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Economic Contribution North Dakota Cooperatives Make to the State Economy

Randal C. Coon and F. Larry Leistritz*

Cooperatives are an important and popular form of business organization in North Dakota. Cooperatives have long been viewed as important businesses in the agricultural sector of the state. North Dakota ranked second in the United States for the number of farm service and supply and marketing cooperatives in 2001, following only Minnesota (USDA 2003). Not all cooperatives in North Dakota are farm related, with many other sectors of the economy being represented in this type of business structure. The list includes such diverse areas as electric generation and transmission, telephone, rural water, credit and finance, and child day-care cooperatives, to name a few.

Measuring the economic contributions of cooperatives to the state's economy can provide an indication of how this type of business structure adds to the states' economy in terms of key indicators. This study has been done twice before (Bhuyan and Leistritz 1996; Coon and Leistritz 2001), so this analysis provides an ongoing measurement of how cooperatives impact the state's economy. This study will not look at a specific industry, but rather includes all industries organized under the cooperative business structure. North Dakota is recognized throughout the United States for its leadership role in cooperative development (Bhuyan and Leistritz 1996), so estimating the economic contribution these businesses make to the state's economy is important. This report will provide estimates of the contribution North Dakota cooperatives make to the state's economy measured in terms of such key economic indicators as retail trade, personal income, total business activity, employment, and tax revenue.

METHODOLOGY

North Dakota currently has 405 cooperatives (Astrup 2004) with most (224) related to agriculture (farm supply, agricultural processing, and grain handling). In addition, 33 utility, 66 financial, and 82 cooperatives classified as "other" were operating in the state in 2004 (Figure 1). Farm supply cooperatives have declined from 117 in 2001 (Coon and Leistritz 2001) to 100 in 2004, and grain handling cooperatives were reduced from 119 to 110 during that period. Although these losses were small, they probably can be explained by the continuing trend to larger (and fewer) farms and the growth in the number of shuttle train loading facilities in North Dakota. Between 2001 and 2004 the number of agricultural product processing cooperatives increased from 5 to 14. No large-scale processing plants were built in the state during that period, but many smaller businesses now consider themselves processing plants. Financial cooperatives increased slightly (62 to 66) during the 2001 to 2004 period. The biggest change has been in the number of cooperatives (7 to 82) in the "other" category. This group markets arts and crafts, groceries, lumber, etc. These cooperatives were formed to help vertically integrate farmer-produced raw materials and to provide farm supplies, energy, credit, materials, and services for their members.

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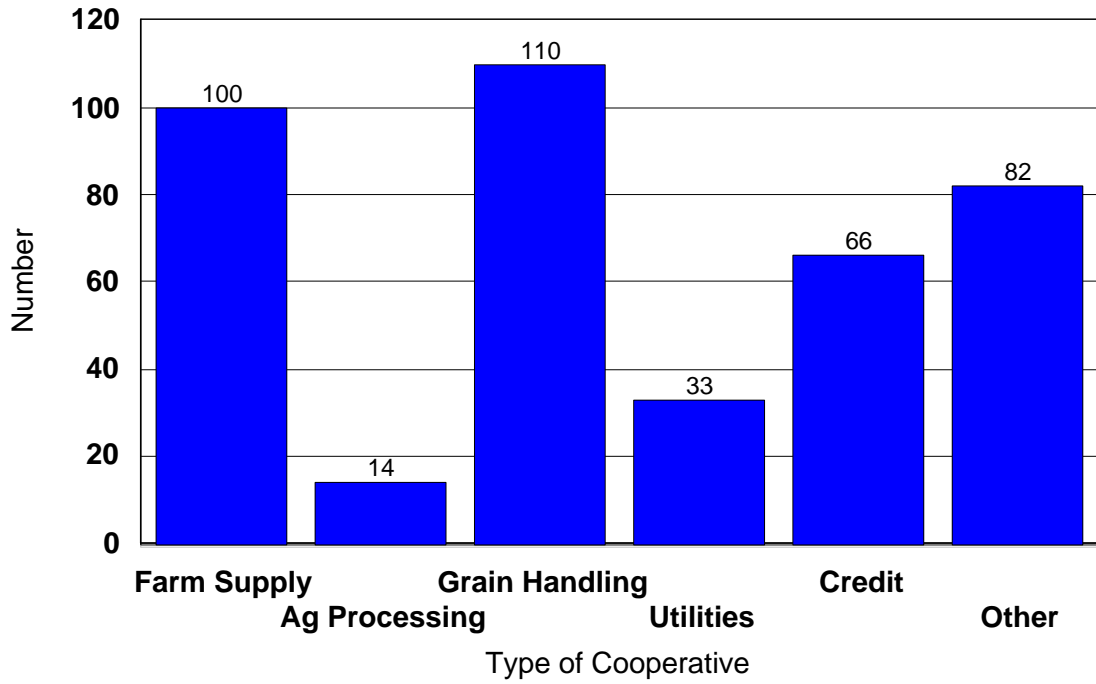


Figure 1. Cooperatives Operating in North Dakota, by Service Type, 2004

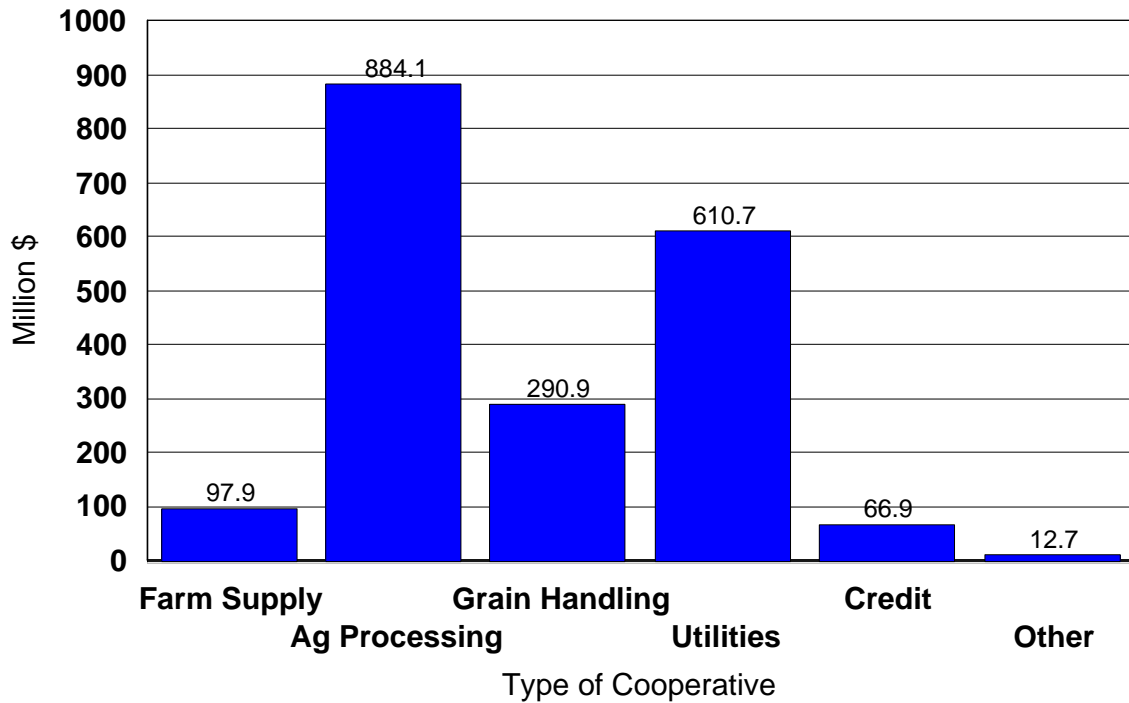


Figure 2. Total Annual In-State Expenditures by Cooperatives Operating in North Dakota, by Service Type, 2004.

Expenditures of cooperatives operating in North Dakota provided the basic data for this study. A survey instrument was developed to obtain cooperatives' in-state expenditures. The questionnaire was distributed to all cooperatives in North Dakota by the North Dakota Coordinating Council for Cooperatives in July 2004. A total of 70 useable survey instruments were returned for the six cooperative types. Representative samples were obtained for the farm supply, agricultural processing, grain handling, and credit cooperatives. Mean values were determined for each expenditure category for each cooperative type. These values were applied to the respective number of cooperatives to estimate total in-state expenditures for each cooperative type. A couple of large-scale agricultural processing cooperatives did not respond to the survey, but expenditures data were available from the previous study (Coon and Leistriz 2001) and used to fill in missing data for that category. For the utilities category, the small number of rural telephone coops responding made it necessary to use expenditures data from the 2001 study for this group. All rural electric cooperatives responded to the survey, but not all transmission/generation coops provided expenditures data. However, data from a previous study (Coon and Leistriz 2004) were available to complete this group.

It was not the intent of this study to analyze the economic contribution for each cooperative type, but rather for all cooperatives in the state. Expenditures for the six cooperative types were summed and analyzed collectively, but it is interesting to look at in-state expenditures in 2004 (Figure 2). The agricultural processing cooperatives had by far the largest total expenditures (\$884.1 million), primarily because of their large expenditures for raw product purchased in North Dakota for processing.

The North Dakota Input-Output Model was used to analyze the economic contribution of cooperatives to the state. The model uses interdependence coefficients, or multipliers, that measure the level of total gross business volume generated in each sector from an additional dollar of sales to final demand in a given sector. This model applies the industry's expenditures to the interdependence coefficients to estimate business activity by economic sector. For a complete description of the North Dakota Input-Output Model, a listing of the coefficients, and how the model can be used to perform an economic contribution study, see Coon et al (1985 and 1989). Resulting levels of business activity were used to estimate tax revenue and indirect and induced employment, based on historic relationships (Coon et al. 1992). Expenditures by North Dakota cooperatives are assumed to work their way through the local economy (via the multiplier process) the same as expenditures of firms in other sectors of the state's economy. All values in this analysis are expressed in terms of current year dollars (i.e., nominal dollars).

RESULTS

North Dakota cooperatives' in-state direct expenditures totaled \$2.0 billion in 2004 (Table 1). The largest expenditure category was the household sector (\$802.0 million) which was comprised of payroll, patronage refunds, and stock retirement. These expenditures accounted for 41 percent of cooperative expenditures (\$802 million). Of this total, 51 percent, or \$408 million, represented patronage refunds and stock retirement. The second largest expenditure category was for the purchase of raw products (\$413.2 million) by the agricultural processing cooperatives. This reflects the importance of agricultural processing cooperatives' role in obtaining higher prices for their farmer-members. Of the total expenditures cooperatives make in North Dakota, nearly two-thirds were to the household and crops sectors. The largest share of cooperatives' spending was for the purchase of members' products, for workers' salaries, and refunds to members.

Table 1. Estimated North Dakota Direct Expenditures, by Economic Sector, for Cooperatives Operating in North Dakota, 2004	
Sector	Expenditure -----million \$-----
Ag, Livestock	3.7
Ag, Crops	409.5
Construction	98.3
Transportation	130.3
Communications & Public Utilities	80.6
Retail Trade	174.6
Finance, Insurance & Real Estate	154.7
Business & Personal Service	71.9
Professional & Social Service	37.6
Households	<u>802.0</u>
Total	1,963.2

Direct expenditures North Dakota cooperatives made in-state were applied to the North Dakota Input-Output Model interdependence coefficients (multipliers) to estimate the associated impacts. Estimates of business activity were generated for each sector of the North Dakota economy, but only key measures will be presented in this report. Total economic contribution resulting from cooperatives' direct expenditures was \$6.1 billion in 2004 (Table 2). Cooperative expenditures resulted in \$2.2 billion in personal income, and \$1.5 billion in retail trade activity.

Table 2. Estimated Direct Plus Indirect Personal Income, Retail Sales Activity, Business Activity for all Business Sectors, and Total Business Activity, for Cooperatives Operating in North Dakota, 2004	
Item	Amount -----million \$-----
Personal income	2,217.4
Retail sales	1,463.8
Business activity for all business sectors ^a	<u>3,070.8</u>
Total business activity	6,114.0

^aIncludes all sectors except agriculture (livestock and crops), households, and government

Cooperative business activity also contributes to the state tax revenue. Total taxes attributable to these businesses were estimated to be \$110.6 million (Table 3). Sales and use tax collections were \$67.8 million, or 61 percent of the total. Direct employment for cooperatives was obtained from the survey. Cooperatives provided full-time jobs for 11,162 workers with many of these jobs in rural areas (Table 4). Direct expenditures by cooperatives also create secondary, or indirect and induced, employment in the state. Cooperative operations support another 53,676 secondary jobs in 2004. These are jobs that arise to serve and support the economic activity resulting from cooperatives operating in North Dakota.

Table 3. Estimated State Tax Revenue Resulting from Activities of Cooperatives Operating in North Dakota, 2004	
Tax	Revenue -----million \$-----
Sales & use	67.8
Personal income	33.3
Cooperative income	<u>9.5</u>
Total	110.6

Table 4. Estimated Direct and Secondary Employment for Cooperatives Operating in North Dakota, 2004	
Employment	Workers
Direct	11,162
Secondary	53,676

CONCLUSIONS

Cooperatives are a popular business organization in North Dakota with over 400 cooperatives operating in the state in 2004. Cooperatives exist to enhance sale price, reduce costs, or provide a service or product for their member-owners. However, they also contribute significantly to the state's economy. Direct expenditures by cooperatives result in higher levels of business activity, tax revenues, and employment.

Cooperatives' expenditures in 2004 were nearly \$2.0 billion. These outlays resulted in higher levels of personal income (\$2.2 billion), retail trade (\$1.5 billion), and total business activity (\$6.1 billion). State-level business activity for each of the North Dakota Input-Output model sectors were available for 2002 (Coon and Leistriz 2004), the last year data were available. Comparing business activity resulting from cooperative operations with state-level data shows that personal income attributed to cooperatives was 15 percent of the state total, retail trade was 13 percent, and all business activity accounted for 13 percent. There are many cooperatives operating in North Dakota, and some are very large business entities, which is reflected in cooperatives' share of state-level economic measures.

Direct employment at cooperatives was 11,162 in 2004. This represents 2.8 percent of the North Dakota total with many of these jobs in rural parts of the state. Secondary, or indirect and induced, jobs resulting from cooperative business activity amounted to 53,676 jobs. Also, \$110.6 million in tax revenues to the state were attributed to cooperative business activity.

Cooperatives are an important component of the North Dakota economy, making significant contributions in terms of employment, business activity, and taxes. Growth in the other cooperatives category indicates that many rural areas are favoring this business structure to provide needed goods and services (groceries, daycare, etc.). Jobs created by cooperatives have employed many workers especially in rural North Dakota. Cooperatives have helped to integrate agricultural processing, thereby adding value to raw materials produced in the state. Goals of cooperatives, to increase product prices and reduce costs for its member-owners, have helped keep more dollars in the state. Profits from cooperative operations also tend to remain in North Dakota in the form of patronage refunds. All these factors add up to the fact that cooperatives are playing a vital role in the North Dakota economy.

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