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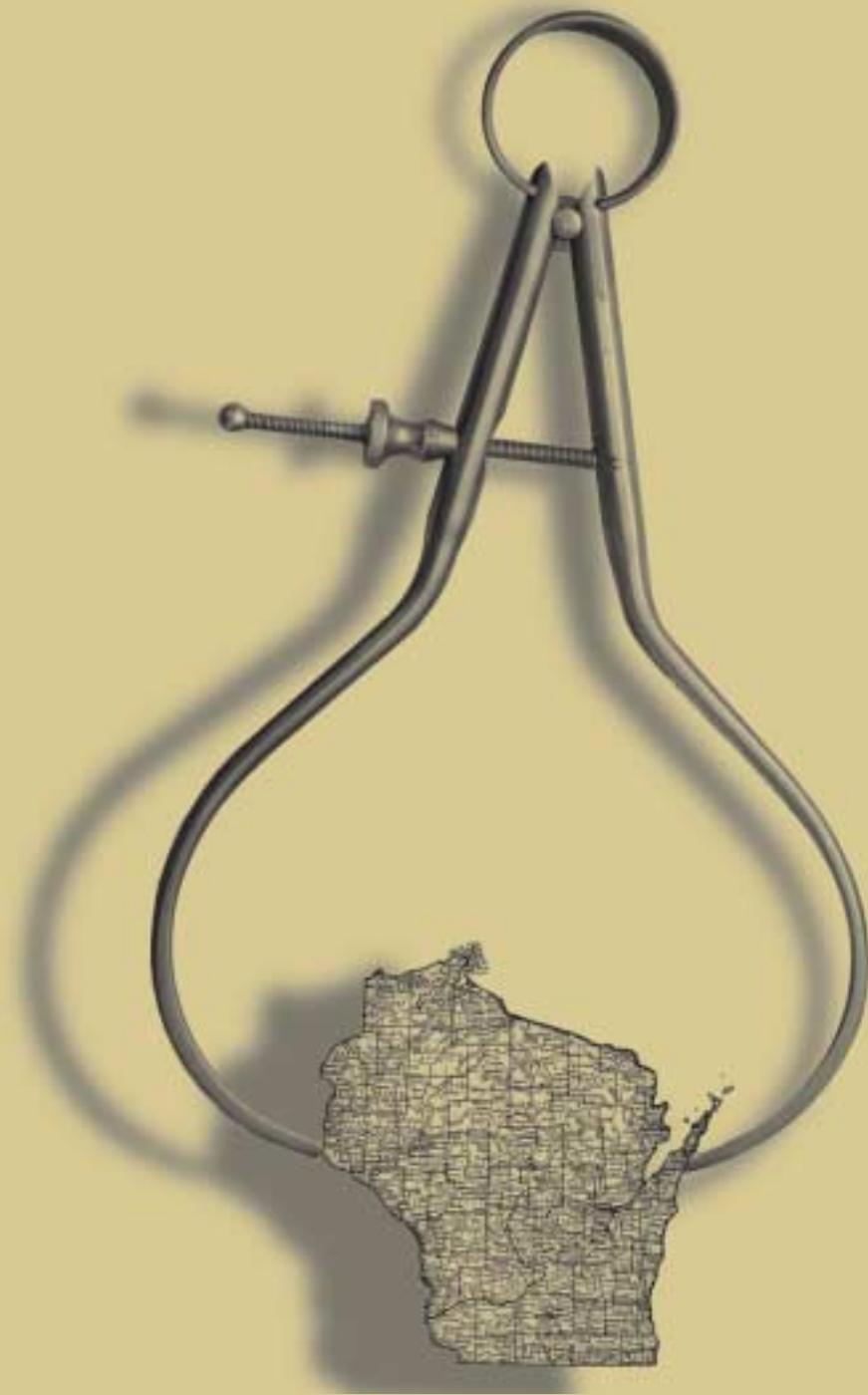


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Measuring the Economic Impact of Cooperatives: Results from Wisconsin



Abstract

This study measures the economic impact of cooperatives at the State level and therefore quantifies a portion of their contribution to economic development. Financial data was collected from almost 800 agricultural and non-agricultural cooperatives in Wisconsin during 2000. The total economic impact of these cooperatives was assessed using a Social Accounting Matrix (SAM) model. The SAM accounted for the total economic transactions spurred by cooperative business activity in Wisconsin. Direct, indirect, and induced effects were estimated in terms of jobs, wages and salary, and total income. In the case of patronage refunds and dividends, the total value added to the State's economy was also calculated. The economic impacts are reported for each of the following six cooperative types: agricultural marketing, farm supply and services, credit unions and farm credit, food, rural utilities, and other. The analysis did not attempt to measure the total value of cooperatives to either their local economies or their members. Economic impact studies are a single, not final, measure of the important role cooperatives play in any economy.

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Preface

The analysis conducted for this research simulated the relationship of Wisconsin's 798 cooperatives to the State's broader economy. The cooperatives represented a total of 2.7 million members and \$5.6 billion in gross sales. More than \$250 million was generated in net profits while \$323 million was returned to members in the form of cash patronage refunds and dividends and almost \$65 million paid in Federal, State, and local taxes.

In the aggregate, and taking into account multiplier effects, Wisconsin cooperatives support nearly 30,000 full-time jobs and generate almost \$1 billion in total income within the State. They also produce more than \$200 million in Federal, State, and local tax revenues. Agricultural cooperatives are responsible for the most significant economic impacts, accounting for 55 percent of the total economic impact of cooperatives.

The cash patronage refunds and dividends that are distributed to cooperative members annually also have significant economic impacts. When these returns are cycled through the State's economy they in effect support a total of 4,637 jobs that generate \$114 million in total income. The returns further create more than \$500 million in total value-added, the influx of additional net income into the State.

Remember, Social Accounting Matrix (SAM) results and those of other economic impact models are simply estimates produced by economic simulations and should be carefully interpreted. The results are products of the data and modeling assumptions. National and regional industrial surveys (the basis of SAM models) do not differentiate cooperatives from other organizational structures. Therefore, any unique relationships cooperatives may have within their economies (e.g., purchasing more inputs locally) are not included in the analysis.

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Measuring the Economic Impact of Cooperatives: Results from Wisconsin

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Introduction

Policymakers and community development agents are increasingly interested in alternative models for locally owned businesses that will be responsive to community needs and stimulate local economic growth. Cooperatives should be an obvious choice. By virtue of being locally owned and controlled, with net profits distributed to patrons, many consider cooperatives to be an ideal model for local economic development. Their structure and objectives compel them to behave differently than other community organizational structures (Fulton and Ketilson).

Cooperatives play a vital and direct role in rural economic development, as recognized in provisions of the current farm bill. It authorized substantial financial allocations for a rural cooperative development program. Cooperative developers also recognized this idea and adopted the following principle for their profession in 1994: "Cooperatives are development tools and should promote both social empowerment and economic goals" (RBS SR 54, *Creating 'Co-op Fever': A Rural Developer's Guide to Forming Cooperatives*, p. 11, Patrie).

Unfortunately, very few studies have measured the economic impact of cooperatives at either the State or local level. So their contribution to economic development has not been well quantified. One reason is a lack of good data describing the cooperative economic activity. With better data and economic impact analysis, policymakers and com-

munity development practitioners could make more informed decisions regarding the support of alternative business development options.

This report summarizes results from the research project "Assessing State and Community Impacts of Agricultural and Rural Cooperatives." The project quantitatively measured the economic impact of cooperatives (both agricultural and non-agricultural) in Wisconsin. This required collecting updated financial data for all of the cooperatives in Wisconsin. Unfortunately, due to insufficiencies in this data, only State-level impacts could be analyzed. Further research is warranted at the county level. The report describes the research methodology, including a general discussion of the limitations of the Social Accounting Matrix (SAM) approach. This is followed by an overview of the cooperative data collected from 798 cooperatives during 2000. The analysis results and conclusion compose the remainder of the report.

Research Methodology

Cooperative Data Collection—Adequate financial data for cooperatives in the State did not exist, so the first step in the project was to collect it. All incorporated cooperatives in the State, except farm credit associations, credit unions, and town mutual insurance companies, register annually with the Wisconsin Department of Financial Institutions. In 1999, the department listed 666 incorporated operating cooperatives. They included agricultural and food cooperatives, rural utilities, and others incorporated under Wisconsin's cooperative statute (Chapter 185). Credit unions and town mutual insurance companies are incorporated under a dif-

ferent State statute while farm credit associations are only incorporated under a Federal statute. All, however, operate according to the same generally accepted cooperative principles.

A survey requesting financial information for fiscal 1999 was sent to 426 cooperatives in March 2000 (see Appendix). It was decided that 240 registered cooperatives would be excluded from the study since a 1992 survey found that they were conducting little or no business (Cropp). These included county Farm Bureaus, dairy breed associations, and other agricultural trade organizations organized as cooperatives in the middle of the last century. A total of 325 surveys were returned by cooperatives (76 percent response), although all surveys were not fully completed.

Followup telephone calls to non-respondents, industry trade associations, and key informants produced additional data from 123 cooperatives operating in the State. Those included 25 of the initial cooperatives surveyed (still operating), 4 farm credit associations, 80 town mutual insurance companies, 8 large agricultural marketing cooperatives headquartered elsewhere and not incorporated in Wisconsin (e.g., Land O'Lakes), and 6 non-incorporated housing cooperatives. (Some housing cooperatives are not formally incorporated although they operate according to generally accepted cooperative principles.)

The "out-of-State" agricultural marketing cooperatives were included because they conduct extensive business with producers in the State and they provided Wisconsin-specific data. Seven of these cooperatives provided gross sales, number of members and employees, and salary figures that represented only the Wisconsin portion of their business. The remaining co-op telephone interviews yielded membership and employee numbers, but little financial information.

Financial information for the 350 credit unions operating in the State was acquired from the Wisconsin Office of Credit Unions, which requires them to submit financial reports twice per year.

Combining the mail survey, credit union, and telephone interview data (798 cooperatives), "response rates"¹ for the various survey questions ranged from 30 percent to 84 percent. While membership information and gross sales figures were obtained for most cooperatives, tax information was

gathered for a mere 30 percent. The Wisconsin Office of Credit Unions does not require credit unions to report their taxes. To account for these data discrepancies, the response rate for each survey question is included in the statistics tables (section three).

Economic Impact Analysis—Economic impact studies generally employ regional modeling methods designed to provide empirical representations of the linkages between the various sectors in the economy. Social Accounting Matrix (SAM) models allow researchers to investigate the interdependencies that industry, institutions, and households have with each other studied region. A SAM comprehensive financial accounting system tracks economic transactions within a given economy. These types of regional models also identify the overall size and contribution of an industry, its economic effect or economic value, in relation to the area mix of economic activity.

A SAM model offers a "snapshot" of the economy, detailing the sales and purchases of goods and services between all sectors of the economy for a specific time. The flow of dollars associated with the operation of an industry is traced throughout the economy. One industry's product can be purchased by others as supplies, fertilizer, fuel and seed by households and other institutions for final consumption, or be exported outside of the study region. Likewise, an industry's product can be purchased from other industries in the economy, from institutions such as households, or imported from outside the region. Basically, any industry's service or product requires employees, materials, utilities, capital investments, financing, maintenance, equipment, and service inputs.

Not all of an industry's products may be purchased locally. Firms may produce goods or provide services for "export" (i.e., sold outside the region being modeled). They attract outside funds into the region that in turn support employment, industrial purchases, and household spending. Firms that use locally produced products, instead of those from outside the region, generate revenue flows to other local industries. However, firms that

¹ Technically, the credit unions did not respond to any survey that was part of this study; however, they did respond to the Office of Credit Unions' annual questionnaire, therefore justifying the use of the phrase "response rate."

produce goods and services for local consumption (either by industries or by households) may not actually stimulate significant additional economic activity in the region.

A firm that purchases or sells products locally (within the region being modeled) is probably incorporated in SAM model calculations. Estimates of an industry within the region being modeled are based on national and regional industrial surveys. Unfortunately, they do not differentiate cooperatives from other organizational structures. SAM results are simply estimates that reflect the quality and type of data employed and the assumptions implicit in the modeling.

Interpretation of SAM Results—SAM models produce many kinds of data. The more useful results for planners and policymakers are estimates of (1) jobs; (2) wage and salary income; (3) total income; and (4) tax flows. These four categories of economic activity are reported in the results section.

Jobs are defined as the number of positions created in the local economy, not the number of employed persons. This distinction is important because the relationship between job growth and labor force growth varies substantially depending on the industry. Some industries rely heavily on semi-skilled and part-time labor. Others use more full-time or skilled jobs. It is important, whenever possible, to quantitatively assess whether the jobs stimulated by a given industry are part-time or full-time and higher or lower paying.

Wage and salary income includes the wages and salaries paid to employees and proprietors, the normal profits made by sole proprietors. *Total income* (gross regional product) includes all personal income (employment compensation and income to sole proprietors) plus property income (dividends, interest, and rents), and indirect tax payments (primarily excise and sales taxes paid by individuals to businesses). This is akin to the national Gross Domestic Product (GDP) measure.

Tax flows measure the dollar value of tax revenues generated by the industry that flow to public institutions (the local, State, and Federal Governments). This flow includes direct taxes paid by the industry as well as the taxes paid by its employees and taxes paid on economic activities created through indirect and induced effects.

SAM models can also measure an industry's total industrial output (gross sales). While some industry analysts may like to use these comparatively large numbers when promoting the impact of their industry, industrial output is not necessarily a reliable indicator of an industry's local economic impact. A gas station, for instance, may generate millions of dollars in gross sales each year, but since it has few and poorly paid part-time employees, its economic impact may be negligible. Thus, industrial output was not measured for this analysis, which instead focused on the employment, income, and tax-related measurements described above.

Each of the economic impact estimates produced by SAM models are further divided into direct, indirect, and induced components. For instance, assume the total local economic impact (total effect) measured in terms of job creation in a certain industry is 1,000 jobs. This industry may actually only directly employ 500 people in its firms (direct effect), although as a consequence of its operations it may generate an additional 500 jobs (indirect and induced effects).

Direct effects refer to the actual production of the firms or institutions that are studied. For example, *direct* jobs are the number of positions within any given business. *Direct* wage and salary income represents the firms' payments to all employees and returns to sole proprietors. *Indirect effects* measure the value of additional economic demands that the firms or institutions being studied place on other industries in the region (e.g., when they purchase supplies from these industries). Firms use public utilities, communication systems, fuel, wholesale goods and services, manufactured goods, financial and legal services, raw and processed commodities, and the products from a variety of other businesses to create their own services or products.

Induced effects estimate the impact of earnings spent by workers in direct and indirect jobs on goods and services in the economy. Induced effects can also be called household effects. The terms are often used interchangeably. When workers purchase goods and services for household uses, they in turn stimulate another layer of economic activity. Most induced activity occurs in the retail, services, finance, insurance, and housing sectors of the economy. Because additional employment (and thus

income) is then stimulated in each of these sectors, yet another layer of induced and indirect economic activity is generated. SAM models account for these iterative rounds of transactions until all of the possible inter-industrial transactions have been measured.

The *multiplier effect* refers to the multiple layers of economic activity linked to an industry. There are two different kinds of multipliers. Type I only measures the value of direct and indirect effects (e.g., direct and indirect jobs are summed and then divided by the number of direct jobs). Type II (or Type SAM)² measures the value of all economic transactions (direct, indirect, and induced) that are stimulated in the economy by the industry under study (e.g., direct, indirect, and induced jobs are summed and divided by the number of direct jobs). Only the Type II multipliers are reported for this analysis.

Cooperative Sector Analysis—The employment, income, and cash patronage refund data were used to generate economic impact estimates for cooperatives in Wisconsin using a SAM model of the State's economy. In the first stage, all of the cooperative data (798 responses) were aggregated to provide an estimate for the total cooperative sector in the State. In the second stage, the data were segregated by cooperative type and separated into six categories for analysis:

- (1) agricultural marketing (includes dairy bargaining associations, cheese plants and creameries, regional dairy and other types of marketing co-ops such as cranberry, live-stock, and forestry);
- (2) farm supply and services (includes local farm supply, artificial insemination, farm management, milk transportation co-ops, and dairy herd improvement associations);
- (3) credit unions and farm credit associations;
- (4) food cooperatives (includes natural and conventional food grocers);
- (5) utilities (includes rural electric and rural telephone co-ops); and
- (6) other cooperatives (includes non-agricultural cooperatives that do not fit neatly

under one of the five other categories, e.g., a funeral home).

The SAM model used in this analysis has 528 industrial sectors with no differentiation among business structures (i.e., cooperatives are not distinguished within the industrial sectors). In addition to the cooperative data collected specifically for this analysis, data from previous county- and State-level modeling projects were used to calibrate the Wisconsin SAM.

Wisconsin Cooperative Statistics

The cooperative statistics are presented in tables 1-3. For a complete summary of the primary data, see the *2001 Directory of Wisconsin Cooperatives* (University of Wisconsin Center for Cooperatives). Table 1 shows that the 798 cooperatives had 2.7 million members and \$5.6 billion in gross sales for 1999. Agricultural marketing cooperatives contributed about \$2.6 billion, with an additional \$1.4 billion accredited to farm supply and service cooperatives. (Both types of credit agencies reported operating income from interest and fees in lieu of gross sales.) The cooperatives generated \$227 million in net profits of which \$323 million was returned to members as cash patronage refunds and dividends. This is somewhat misleading, however, because credit unions account for the majority of that estimate, paying out \$289 million in dividends (this figure is combined with farm credit dividends in table 1). The non-credit cooperatives returned a relatively modest \$32 million or 28 percent of their combined net profits.

Table 2 represents the "balance sheet" for Wisconsin cooperatives. They reported nearly \$13 billion in assets and almost \$11 billion in liabilities. Clearly, assets minus liabilities should give us the equity figure. Due to data discrepancies, this does not exactly balance.

The employment and tax statistics for the cooperatives are shown in table 3. Cooperatives employed 17,413 people full-time and 6,021 part-time in 1999. For the purposes of the economic impact analysis, part-time employees were counted as half full-time equivalents (FTEs), for a total of 20,424 FTEs. The cooperatives reported paying \$583 million in salaries and wages and almost \$80 million in benefits to their employees.

² Technically, type II and Type SAM multipliers are computed differently, although they should be interpreted the same and produce the same estimate.

Table 1— Wisconsin Cooperative Statistics by Type, 1999

| Cooperative Type | Number of Responses | Members | Gross Sales (\$millions) | Net Profit (\$millions) | Patronage Refund* (\$millions) |
|---|---------------------|-------------------|--------------------------|-------------------------|--------------------------------|
| Agricultural Marketing (response rate) | 42 | 77,615 88% | 2,578.70 88% | 33.8 49% | 7 41% |
| Farm Supply & Services (response rate) | 156 | 253,922 76% | 1,394 73% | 39.5 67% | 11 63% |
| Credit Unions & Farm Credit (response rate) | 354 | 1,904,322 100% | 771.2 100% | 114.1 100% | 290.5 100% |
| Food (response rate) | 30 | 41,604 83% | 103.9 77% | 4.2 53% | 0.4 53% |
| Rural Utilities (response rate) | 36 | 234,550 89% | 417.9 89% | 16 64% | 10.9 67% |
| Other (response rate) | 180 | 202,064 57% | 304.6 41% | 19.5 32% | 6.3 36% |
| Total | 798 | 2,714,077 | 5,570.40 | 227 | 323.4 |

Note: The response rate for each statistic is presented in parenthesis following the actual estimate. It should be interpreted as a percentage of the number of responses.

* Includes cash patronage refunds and dividends.

Table 2— Wisconsin Cooperative Equity Statistics, 1999

| Cooperative Type | Assets (\$ millions) | Liabilities (\$millions) | Equity* (\$millions) |
|---|----------------------|--------------------------|----------------------|
| Agricultural Marketing (response rate) | 503 (46%) | 257.8 (46%) | 245.2 (46%) |
| Farm Supply & Services (response rate) | 780.1 (69%) | 348.6 (69%) | 432.1 (68%) |
| Credit Unions & Farm Credit (response rate) | 10,412.10 (100%) | 9,133.90 (100%) | 1,288.20 (100%) |
| Food (response rate) | 23.7 (50%) | 11.9 (50%) | 11.8 (47%) |
| Rural Utilities (response rate) | 1,093.90 (69%) | 751.5 (67%) | 320.3 (67%) |
| Other (response rate) | 146.4 (38%) | 59.9 (39%) | 74.5 (36%) |
| Total | 12,959.30 | 10,563.60 | 2,372.10 |

Note: The response rate for each statistic is presented in parenthesis following the actual estimate. It should be interpreted as a percentage of the number of responses.

* Due to discrepancies in the collected data, assets minus liabilities does not equal equity.

Table 3— Wisconsin Cooperative Employment Statistics, 1999

| Cooperative Type | Full-time | Part-time | Wages (\$ millions) | Benefits (\$ millions) | Taxes* (\$millions) |
|--|-----------------|-----------|------------------------|---------------------------|------------------------|
| Agricultural Marketing (response rate) | 5,614 (83%) | 565 | 163.4 (73%) | 18.2 (63%) | 12.3 (41%) |
| Farm Supply & Services (response rate) | 4,536 (74%) | 2,640 | 157.9 (75%) | 20.3 (69%) | 21.8 (68%) |
| Credit Unions & Farm Credit (response rate) | 4,573 (100%) | 1,552 | 156.9 (100%) | 24.2 (100%) | 7.6 (1%) |
| Food (response rate) | 372 (87%) | 573 | 11.1 | 1.2 | 1.2 |
| 19.4 (response rate) | | | 241 | 63.4 | 12.5 |
| Other (response rate) | 876 (47%) | 450 | 30.2 (43%) | 3.4 (37%) | 2.3 (40%) |
| Total | 17,413 | 6,021 | 582.9 | 79.8 | 64.5 |

Note: The response rate for each statistic is presented in parenthesis following the actual estimate. It should be interpreted as a percentage of the number of responses.

* Tax data for credit unions was unavailable: this only represents taxes paid by farm credit associations.

Wisconsin cooperatives paid \$64.5 million in Federal, State, and local taxes in 1999. Cooperative businesses do not pay Federal or State income tax on net profits allocated to members as patronage refunds, although they do pay income tax on net profits earned from non-member business and/or net profits retained as unallocated equity (i.e., not returned to members). Again, however, it should be noted that the tax figures are probably lower than in reality because only 30 percent of the cooperatives in the State reported tax information. The Wisconsin Office of Credit Unions did not provide any data on the taxes paid by credit unions.

Three different sets of estimates were generated from the SAM analysis. The first set (tables 4-11) measures the direct, indirect, induced, and total economic effects for each of the six categories of cooperatives as well as for all of the cooperatives. The second set (tables 12-14) estimates the distribution of the total economic impact (in terms of jobs, wages and salaries, and total income) of cooperatives across different economic sectors. The final set of results (table 15) measures the contribution of cooperatives in terms of tax revenues.

Agricultural marketing cooperatives (table 4) employ nearly 5,900 people, providing a significant

source of employment in Wisconsin's rural areas. Once the multiplier effect is considered, these cooperative businesses generate an additional 2,395 jobs. They produced \$163 million in direct income, which when cycled through the local economy amounted to \$263 million in income. (Total income is a more comprehensive measure than just wage and salary income.) The multiplier ranges from 1.406 for employment to 1.610 for total income. Because the direct economic impact of all cooperatives was similar (i.e., the direct jobs, direct wages and salary, and direct total income represented a fairly constant portion of their totals across all cooperative types), the multipliers are fairly consistent across all types.

Farm supply and service cooperatives (table 5) each employed about 5,900 people. Accounting for the multiplier effect, these cooperatives helped create more than 8,000 full-time jobs. The direct income and total income created was slightly lower than agricultural marketing cooperatives at about \$158 million and \$254 million, respectively.

Credit unions and farm credit associations (table 6) provide an important range of services for their clients and play a vital role in Wisconsin's credit markets. In terms of direct economic activity,

Table 4— Agricultural Marketing Cooperatives

| Economic Impact | Jobs | Wage and Salary (\$ millions) | Total Income (\$ millions) |
|--------------------|-------|----------------------------------|-------------------------------|
| Direct | 5,897 | 163.4 | 163.4 |
| Indirect | 1,934 | 48.3 | 80.3 |
| Induced | 462 | 11.4 | 19.3 |
| Total | 8,292 | 232.2 | 263.1 |
| Type II Multiplier | 1.406 | 1.366 | 1.61 |

Table 5— Farm Supply & Service Cooperatives

| | Jobs | Wage and Salary (\$ millions) | Total Income (\$ millions) |
|--------------------|-------|----------------------------------|-------------------------------|
| Direct | 5,856 | 157.9 | 157.9 |
| Indirect | 1,867 | 46.7 | 77.5 |
| Induced | 446 | 11 | 18.6 |
| Total | 8,170 | 215.6 | 254.1 |
| Type II Multiplier | 1.395 | 1.366 | 1.61 |

Table 6— Credit Unions and Farm Credit

| | Jobs | Wage and Salary (\$ millions) | Total Income (\$ millions) |
|--------------------|-------|----------------------------------|-------------------------------|
| Direct | 5,349 | 156.9 | 156.9 |
| Indirect | 1,856 | 46.4 | 77.1 |
| Induced | 443 | 10.9 | 18.5 |
| Total | 7,649 | 214.2 | 252.5 |
| Type II Multiplier | 1.43 | 1.366 | 1.61 |

credit unions and associations employ 5,349 people and generate about \$157 million in total income. With the multiplier effect, they ultimately support 7,649 jobs and nearly \$253 million in total income.

Of all the cooperatives examined, food cooperatives (table 7) have the smallest economic impact on the Wisconsin economy. They directly support 659 jobs, which is rather low because most of the food cooperatives are small businesses with few employees (typically half of which are part-time). Regardless, food cooperatives still generate a total income of nearly \$18 million.

Rural utilities (table 8) certainly provide a vital resource for rural businesses and households. In terms of direct employment and income, however,

they are not as significant as agricultural and credit cooperatives. They directly employ 1,563 people and generate nearly \$63 million in total income (which ultimately amounts to more than \$100 million after cycling through the State's economy).

"Other," the group of cooperatives that cannot be easily classified into any of the previous categories (table 9), ultimately generates additional 1,544 jobs and nearly \$49 million in total income. In aggregate (table 10), cooperatives in Wisconsin directly employ 20,424 FTEs. Accounting for the multiplier effect, they support almost 30,000 jobs. The total income created in the State, again after including the multiplier, is nearly \$1 billion.

Table 7— Food Cooperatives

| | Jobs | Wages and Salary (\$ millions) | Income Total (\$ millions) |
|--------------------|-------|-----------------------------------|-------------------------------|
| Direct | 659 | 11.1 | 11.1 |
| Indirect | 128 | 3.2 | 5.3 |
| Induced | 31 | 0.8 | 1.3 |
| Total | 818 | 15.1 | 17.7 |
| Type II Multiplier | 1.242 | 1.36 | 1.601 |

Table 8— Rural Utility Cooperatives

| | Jobs | Wage and Salary (\$ millions) | Income Total (\$ millions) |
|--------------------|-------|----------------------------------|-------------------------------|
| Direct | 1,563 | 63.4 | 63.4 |
| Indirect | 736 | 18.1 | 31.1 |
| Induced | 173 | 4.3 | 7.2 |
| Total | 2,472 | 85.8 | 101.8 |
| Type II Multiplier | 1.582 | 1.353 | 1.605 |

Table 9— Other Cooperatives

| | Jobs | Wage and Salary (\$ millions) | Income Total (\$ millions) |
|--------------------|-------|----------------------------------|-------------------------------|
| Direct | 1,101 | 30.2 | 30.2 |
| Indirect | 358 | 8.9 | 14.8 |
| Induced | 85 | 2.1 | 3.6 |
| Total | 1,544 | 41.3 | 48.7 |
| Type II Multiplier | 1.402 | 1.366 | 1.61 |

Table 10— All Wisconsin Cooperatives

| | Jobs | Wage and Salary (\$ millions) | Income Total (\$ millions) |
|--------------------|--------|----------------------------------|-------------------------------|
| Direct | 20,424 | 582.9 | 582.9 |
| Indirect | 6,880 | 171.8 | 286.3 |
| Induced | 1,641 | 40.5 | 68.6 |
| Total | 28,945 | 795.2 | 937.9 |
| Type II Multiplier | 1.417 | 1.364 | 1.609 |

The cash patronage refunds and dividends distributed to cooperative members annually also have a significant economic impact (table 11). When returns are cycled through the State's economy, they in effect support a total of 4,637 jobs that generate slightly more than \$114 million in total income. Further, they create more than \$500 million in total value-added.³ If these businesses were structured as investor-owned firms, those net profits would have either been reinvested in the firm or returned as dividends. In the latter case, the value-added estimate for the State would probably have been much lower since investors are generally spread across the country.

The second stage of analysis estimated the distribution of the total economic impact (in terms of jobs, wages and salaries, and total income) of the cooperative types across the different economic sectors in the State—agriculture; mining; construction; manufacturing; transportation, communications, and public utilities (TCPU); trade; finance, insurance and real estate (FIRE); services; government; and other (tables 12-14). The first row of the tables represents the direct economic impact of each cooperative type (i.e., the figures are the same as those found in the "direct" row for tables 4-10).

The largest impacts by sector, regardless of the economic measure, occurred in the trade (retail and wholesale), finance, insurance and real estate (FIRE), and service (restaurants, business and personal services, health care, etc.) sectors. This is not too surprising given the fact that the indirect effects of the cooperative sector were fairly significant; a lot of the total economic impact was accrued in the first round of spending. This typically suggests spending on trade, FIRE, and service, which do not require significant investment. The agriculture, mining, and "other" sectors were the least impacted by cooperatives. Again, this has to do with the fact that the first-round multiplier effect constituted a large portion of cooperatives' total impact.

Although the government sector was also relatively little affected by cooperative-induced economic activity, cooperatives do generate tax rev-

enues that flow to Federal, State, and local governments. Some of these tax revenues are paid directly by cooperatives in the form of corporate and other business taxes (\$65 million, see table 3), but cooperatives also generate tax revenues indirectly via the income taxes paid by their employees as well as the taxes paid on the indirect and induced income generated in the economy. The indirect and induced tax revenues created by cooperative businesses in the State are reported in table 15. Agricultural marketing, farm credit associations, and farm supply and service cooperatives generated the most substantial portion of the \$90 million Federal, State, and local tax revenues. More than half of these revenues (\$48 million) are directed to the Federal Government, while \$26 million goes to the State and \$16 million to local governments in Wisconsin. The cash patronage refunds distributed by the cooperatives produce additional tax revenues, almost \$50 million in total (not reported in the table).

Conclusion

The analysis conducted for this research simulated the complex relationship Wisconsin cooperatives have with the State's broader economy. The study looked at six different types of cooperatives: agricultural marketing, farm supply and services, credit unions and farm credit associations, food, rural utilities, and others that did not fit neatly in any other category. Primary data for the 1999 fiscal year was collected from 798 incorporated cooperatives in 2000.

The total economic impact of these cooperatives was assessed using a SAM model. The comprehensive financial accounting system measured the economic transactions spurred by cooperative business activity within the State. The total economic impact that cooperatives have on the State's economy through direct, indirect, and induced multiplier effects was estimated in terms of jobs, wages and salary, and total income.

In the aggregate, and taking into account multiplier effects, Wisconsin cooperatives support nearly 30,000 full-time jobs and generate almost \$1 billion in total income within the State. In addition, they further produce roughly \$205 million in

³ Value-added, or grossdomestic product, represents the impact of non-local (outside the State) demand created by the refunds. Thus, it represents a influx of additional net income into the State.

Table 11— Patronage Refund and Dividend Impact

| | Jobs (\$ millions) | Total Income (\$ millions) | Total Value Added |
|--------------------|-----------------------|-------------------------------|-------------------|
| Direct | — | — | 323.4 |
| Indirect | 3,754 | 92.4 | 158.6 |
| Induced | 883 | 21.8 | 36.9 |
| Total | 4,637 | 114.2 | 518.9 |
| Type II Multiplier | 1.501 | 1.575 | 1.605 |

Table 12— Jobs Supported By Industrial Sector

| | Marketing | Credit | Supply | Food | Other | Utilities | TOTAL |
|---------------|--------------|--------------|--------------|------------|--------------|--------------|---------------|
| Cooperative | 5,897 | 5,349 | 5,856 | 659 | 1,101 | 1,563 | 20,424 |
| Agriculture | 28 | 27 | 27 | 2 | 5 | 11 | 101 |
| Mining | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Construction | 42 | 40 | 41 | 3 | 8 | 16 | 150 |
| Manufacturing | 91 | 87 | 88 | 6 | 17 | 35 | 324 |
| TCPU | 76 | 73 | 73 | 5 | 14 | 27 | 268 |
| Trade | 950 | 912 | 918 | 60 | 176 | 371 | 3,387 |
| FIRE | 202 | 194 | 195 | 14 | 37 | 80 | 723 |
| Services | 954 | 916 | 922 | 65 | 177 | 347 | 3,381 |
| Government | 30 | 29 | 29 | 2 | 6 | 11 | 106 |
| Other | 22 | 21 | 21 | 1 | 4 | 12 | 81 |
| TOTAL | 8,292 | 7,649 | 8,170 | 818 | 2,472 | 1,544 | 28,945 |

Table 13— Wage and Salary Supported by Industrial Sector (\$ millions)

| | Marketing | Credit | Supply | Food | Other | Utilities | TOTAL |
|---------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Cooperative | 163.4 | 156.9 | 157.9 | 11.1 | 30.2 | 63.4 | 582.9 |
| Agriculture | 0.3 | 0.3 | 0.3 | 0.02 | 0.05 | 0.1 | 1 |
| Mining | 0.02 | 0.02 | 0.02 | 0.01 | 0.003 | 0.01 | 0.1 |
| Construction | 1.6 | 1.6 | 1.6 | 0.1 | 0.3 | 0.6 | 5.8 |
| Manufacturing | 3.4 | 3.3 | 3.3 | 0.2 | 0.6 | 1.3 | 12.2 |
| TCPU | 3.1 | 3 | 3 | 0.2 | 0.6 | 1.1 | 11.1 |
| Trade | 17.2 | 16.5 | 16.6 | 1.1 | 3.2 | 6.7 | 61.2 |
| FIRE | 6.2 | 6 | 6 | 0.4 | 1.2 | 2.6 | 22.4 |
| Services | 26.3 | 25.3 | 25.4 | 1.8 | 4.9 | 9.3 | 93.1 |
| Government | 1.3 | 1.3 | 1.3 | 0.1 | 0.2 | 0.5 | 4.6 |
| Other | 0.2 | 0.2 | 0.2 | 0.01 | 0.04 | 0.1 | 0.8 |
| TOTAL | 223.2 | 214.2 | 215.6 | 15.1 | 41.3 | 85.8 | 795.2 |

Table 14— Total Income Supported by Industrial Sector (\$ millions)

| | Marketing | Credit | Supply | Food | Other | Utilities | TOTAL |
|---------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|
| Cooperative | 163.4 | 156.9 | 7.9 | 11.1 | 30.2 | 63.4 | 582.9 |
| Agriculture | 0.5 | 0.4 | 0.4 | 0.03 | 0.1 | 0.2 | 1.6 |
| Mining | 0.04 | 0.04 | 0.04 | 0.003 | 0.01 | 0.01 | 0.1 |
| Construction | 1.7 | 1.6 | 1.6 | 0.1 | 0.3 | 0.7 | 6.1 |
| Manufacturing | 5.2 | 5 | 5 | 0.4 | 1 | 2 | 18.6 |
| TCPU | 7.4 | 7.1 | 7.1 | 0.5 | 1.4 | 2.6 | 26.1 |
| Trade | 27.8 | 26.6 | 26.8 | 1.8 | 5.1 | 10.7 | 98.8 |
| FIRE | 25.2 | 24.1 | 24.3 | 1.7 | 4.7 | 10.7 | 90.6 |
| Services | 30.1 | 28.8 | 29 | 2 | 5.6 | 10.7 | 106.3 |
| Government | 1.6 | 1.6 | 1.6 | 0.1 | 0.3 | 0.6 | 5.8 |
| Other | 0.2 | 0.2 | 0.2 | 0.01 | 0.04 | 0.1 | 0.8 |
| TOTAL | 263.1 | 252.5 | 254.1 | 17.7 | 48.7 | 101.8 | 937.9 |

Table 15 - Indirect and Induced Taxes Generated by The Cooperative Sector (\$ millions)

| | Marketing | Credit | Supply | Food | Other | Utilities | TOTAL |
|--------------|-------------|-------------|-------------|------------|------------|------------|-----------|
| Federal | 13.5 | 13 | 13.1 | 1 | 2.5 | 5.1 | 48.2 |
| State | 7.2 | 6.9 | 7 | 0.5 | 1.3 | 2.8 | 25.8 |
| Local | 4.5 | 4.3 | 4.3 | 0.3 | 0.8 | 1.8 | 16 |
| TOTAL | 25.3 | 24.3 | 24.4 | 1.7 | 4.7 | 9.7 | 90 |

Federal, State, and local tax revenues. Agricultural cooperatives are responsible for the most significant cooperative economic impact in the State. The \$263 million in total income linked to agricultural marketing cooperatives and the \$254 million in total income tied to farm supply and service cooperatives together represent 55 percent of the combined economic impact of all cooperatives. Credit unions and rural utilities are other significant contributors of jobs and income.

Wisconsin cooperatives (excluding credit unions) returned \$34 million to members as cash patronage refunds in 1999. Credit unions issued \$289 million in dividends to their members. Patronage refund and dividend dollars represent another important income stream in the State's economy, ultimately supporting 4,637 jobs and \$114 million in total income after considering multiplier effects. These returns further generate \$500 million in total value-added, the net income brought into

the State as a result of spending the returns. If the cooperatives were structured as investor-owned firms, it is likely that investor dividends would support fewer jobs, total income, and total value-added within the State.

Larger economic impact figures could have been generated if the analysis had been based instead on industrial output or gross sales. Wisconsin cooperatives generated more than \$5.5 billion in gross sales in 1999. Nevertheless, the more conservative impact estimates used in this analysis are based on the assumption that estimates driven by job figures are more appropriate than those derived from gross sales.

Remember, however, that results produced by SAM models are simply estimates produced by economic simulations and should be carefully interpreted. The results are products of the data and modeling assumptions and thus share those limitations. The collected data from cooperatives was

sparse for some variables (e.g., tax information) and thus does not accurately reflect total cooperative figures. Further, the SAM estimates of an industry's input mix and whether those inputs are purchased within the region being modeled are based on national and regional industrial surveys. Unfortunately, these surveys do not differentiate cooperatives from other organizational structures. Therefore, any unique relationships cooperatives may have within their economies (e.g., purchasing more inputs locally) cannot be analyzed. Primary survey information to update the national or regional statistics is needed to improve the quality of the model output, particularly where the studied industry segment may differ from national or regional averages (such as cooperatives).

Finally, this analysis did not attempt to measure the total value of cooperatives to either their local economies or members. Economic impact models, including SAM, measure neither the savings that cooperatives may offer their members nor how savings are spent in the broader economy. Nor do they account for the increased profitability that members may achieve through their cooperative business and how they spend those personal profits in the broader economy. Cooperatives also offer more to their communities than employment opportunities by providing markets access and essential services to the residents. They also help develop local leadership (human capital) that can start and lead other social and business ventures. This impact study should, therefore, be viewed as a single, not final measure, of the important role cooperatives play in the State's economy.

REFERENCES

Cropp, Bob. *Wisconsin Cooperatives: Directory and Business Information Guide*, 1993. Madison, WI: University of Wisconsin Center for Cooperatives.

Fulton, Murray and Lou Hammond Ketilson. "The Role of Cooperatives in Communities: Examples from Saskatchewan." *Journal of Agricultural Cooperation* 7(1992): 15-42.

Patrie, William. *Creating 'Co-op Fever': A Rural Developer's Guide to Forming Cooperatives*. USDA, RBS Service Report 54, July 1998.

APPENDIX: Cooperative Survey Instrument

Information in the box below (with the exception of e-mail address) will go into a public directory.

| |
|---------------------------------|
| Name of _____ |
| Type of Cooperative: _____ |
| General Manager: _____ |
| Board President: _____ |
| Main Address: _____ _____ |
| Telephone: _____ |
| Web Page: _____ |
| Fax: _____ |
| E-mail contact: _____ |

ALL ANSWERS BELOW WILL BE KEPT STRICTLY CONFIDENTIAL

Use most recent fiscal year

| | |
|--|-------|
| Membership: Total | _____ |
| Wisconsin | _____ |
| Gross Sales | _____ |
| Net Margin (Before Income Taxes and Distributions) | _____ |
| Cash Patronage Paid for the Year | _____ |
| Assets: Total | _____ |
| Fixed | _____ |
| Liabilities: Total | _____ |
| Fixed | _____ |
| Member Equity | _____ |
| Federal Taxes | _____ |
| Wisconsin Property Taxes | _____ |
| Wisconsin Income Taxes | _____ |
| Wisconsin Payroll Taxes | _____ |
| Wisconsin Sales Taxes | _____ |
| Other Miscellaneous Wisconsin Taxes | _____ |
| Number of Full-Time Employees in Wisconsin | _____ |
| Number of Part-Time Employees in Wisconsin | _____ |
| Wages and Salaries Paid in Wisconsin | _____ |
| Benefits Paid in Wisconsin | _____ |

IF your cooperative **has no branches**, thank you  for taking the time to complete this survey.



IF your cooperative **has one or more branches**, please continue below.

Please check this box if you would like a copy of the study's summary results.



The information below will allow us to do two things: Most importantly, the town and employee data will allow us to calculate statewide data on a sub-state basis. We've requested the branch managers' names in case we would want to market educational programs to them in the future.

Town or City of Branch Location

Number of Employees

Name of Branch Manager

Your Comments :

U.S. Department of Agriculture

Rural Business-Cooperative Service

Stop 3250

Washington, D.C. 20250-3250

Rural Business-Cooperative Service (RBS) provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The cooperative segment of RBS (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs. RBS also publishes research and educational materials and issues *Rural Cooperatives* magazine.

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