

# **Farm Cooperatives Can Merge**

## *... an Oregon Study*

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**Circular of Information 603**  
**September 1960**

**Agricultural Experiment Station**  
**Oregon State College**  
**Corvallis**

# **Farm Cooperatives Can Merge . . . *an Oregon Study***

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## **The Problem**

This study was undertaken to demonstrate some advantages of cooperative mergers. Considerable interest has arisen recently in mergers as a means of increasing operating efficiency and quality of service.

The five cooperative associations included in this study are all financially sound. Each firm has survived the uncertain years of infancy and early growth. Although each of these cooperatives has achieved some measure of success, opportunities for improvement exist.

The primary concern of this study is to determine actual dollar gains which could be realized soon under merger. In the past few years economic necessity has encouraged increased business size, largely because of increased competition and smaller net margin. Risk often can be minimized by larger firms through diversification, orderly marketing, easier financing, and better management. Cooperative merger offers a method of increasing business size.

## **Objective**

The objective of this study is to indicate some economies which may result if the five associations merge their operations. Points A, B, C, D, and E, in Figure 1, show the volume and costs per dollar of sales in cents for each firm in 1958. Point F shows the combined volume of the five firms and average costs per dollar of sales. The hypothesis proposed in this study is that lower costs per dollar of sales would result from merger. Examples of some savings in labor and capital inputs which may be realized are the principal features of this report.

## **Scope and Research Procedure**

Associations included in this study were selected because they perform similar services in the same geographical location. Four of the five associations are engaged in supply and marketing while the fifth is strictly a petroleum supply firm. The five firms are located in Marion County, Oregon, but several have members in neighboring counties. These cooperatives are located in a 20-square-mile area with four within 10 miles of each other.

A linear programming transportation model (a mathematical technique) was used in finding the minimum costs, under a rerouted delivery schedule, with delivery capacity fixed.

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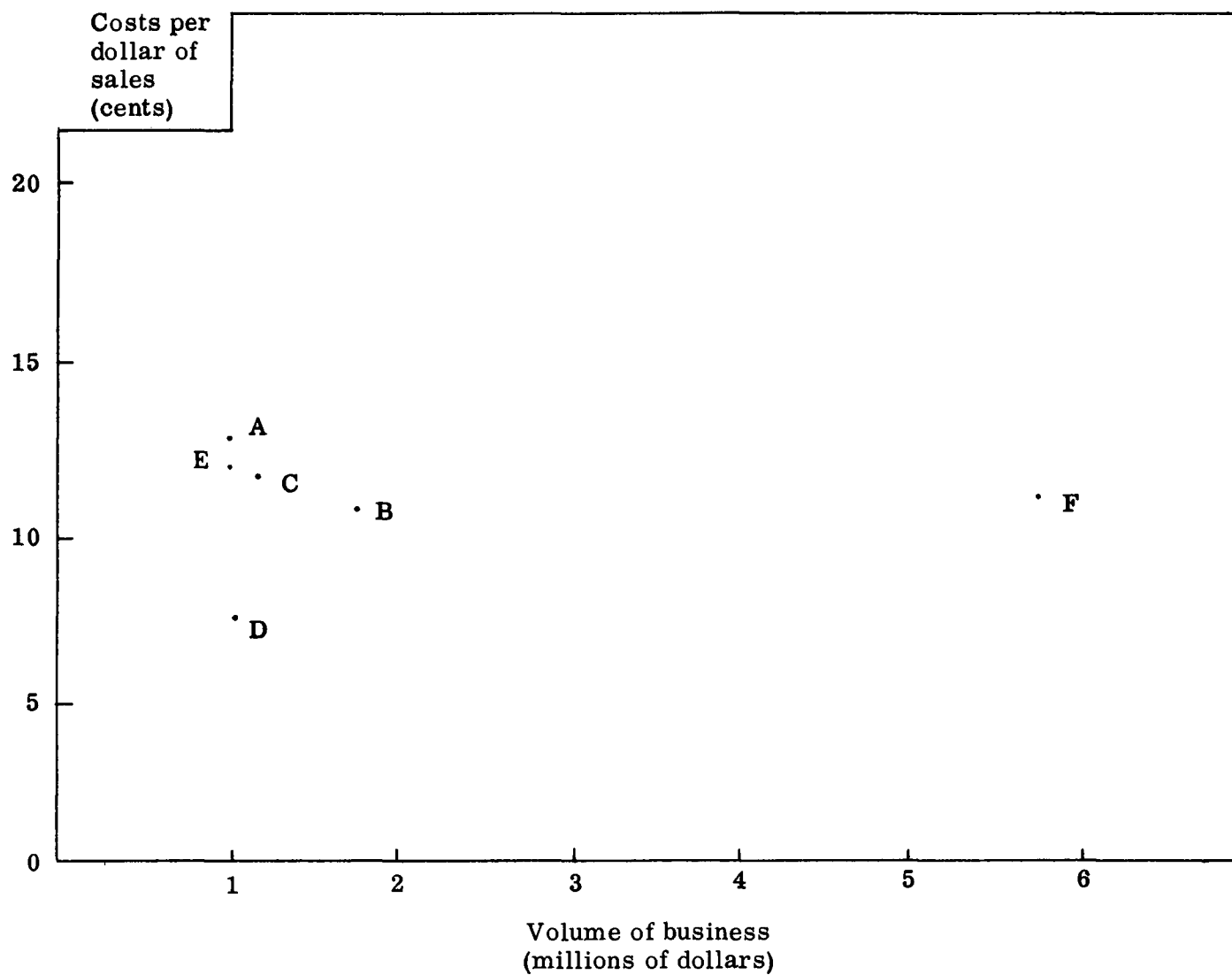


Figure 1. Relationship of costs per dollar of sales and volume for five cooperatives, Oregon, 1958

By observation and comparison it was then shown that further savings could be realized if trucks were shifted from one location to another. A budgeting approach was employed for analyzing possible economies in bookkeeping. The analysis showed machine accounting to be less costly than the present method.

An analysis of the marketing operation consisted of a comparison by association of the price received and the average market price. The underlying assumption is that greater specialization in marketing would result in more frequent realization of the full market price than is now the case. When each manager attempts to do his own marketing, quantities involved are often relatively small.

The hardware activity, which in two associations is operated at a loss, is discussed in terms of variable costs. The assumption is that even if the activity did not exist, most of the fixed costs would still be incurred. The nonquantitative aspects of this enterprise are also considered.

### Usefulness of Study

This is not a complete analysis of all possible savings which could occur through merger. Results of this study should be of value as a guide to boards of directors of any group of associations contemplating combination. Although each situation would differ with regard to type of association, product mix, volume, and revolving funds, the basic problems encountered in cooperative merger would be much the same as those considered here. This study offers basic "guidelines" that can be followed, and provides some facts as to economies which may result from cooperative merger.

### Some Characteristics of the Associations

Total dollar volume and volume by activity for each of the five associations is shown in Table 1. This table indicates considerable variation in volume of business, both total and by activity. Considerable variation also exists in percent ownership of total assets (see Table 2).

Table 1. Business Volume by Activity for Each Association, 1958

Activity	Association				
	A	B	C	D	E
	<u>Thousands of dollars</u>				
Petroleum	154		1,135		167
Hardware & supplies	72	129	81	16	130
Feed, seed & fertilizer	155	821		266	296
Marketing	593	780		742	356
Total volume	974	1,730	1,216	1,024	949

Table 2. Total Assets and Percent Ownership of Total Assets by Members of the Five Associations Included in this Study, 1958

Item	Association				
	A	B	C	D	E
Total assets (dollars)	427,251	678,218	804,831	397,250	343,306
Percent ownership of total assets	73	81	96	68	56

Percent ownership of total assets for the five associations varies from 56% to 96%. The five associations are all affiliated with one of the regional wholesale supply cooperatives operating in the area. The petroleum products retailed by one association were supplied by another regional wholesale supply cooperative.

Some specialization exists in the four supply and marketing associations. This specialization is found in the area of liquid fertilizers, feed manufacturing, and, to some extent, in marketing the various grass seeds.

Information pertaining to revolving funds for each association is shown in Table 3.

Even though four of the five associations are of a similar type and size, variation does exist in the financial structure and specific areas of supply and marketing activities. These differences need not be serious obstacles to merger as will be shown later.

Table 3. Revolving Funds, by Association, 1958

Association	What is retained	Length of revolving fund	Amount of fund
		<u>Years</u>	<u>Dollars</u>
A	Net margin <u>1</u> /	16	204,404
B	Net margin	8	370,762
C	Portion of net margin <u>2</u> /	6	310,277
D	Net margin <u>3</u> /	8	127,199
E	Net margin <u>1</u> /	13	191,271

1/ Net margin retained except for semiannual 1 cent per gallon refund on gasoline, diesel, and stove oil.

2/ An annual cash refund of: 1 cent per gallon on gasoline, stove oil, and kerosene; 3/4 cent per gallon on diesel; 1 cent per pound on grease; 4 cents per gallon on oil, and 8% on miscellaneous is paid to patrons. The remaining net margin is retained.

3/ Twenty-five percent of the net margin is paid in cash, the remaining 75 percent goes into capital retains until \$500 is accumulated by each member patron, then this percentage is credited to the capital revolving fund.

## **Merger**

In order for a merger to occur, members must be convinced that the new organization can give better service and/or higher prices for their products on the marketing side and lower prices for supplies. Members also must be convinced that their association, which is now financially sound, will not be forced to use its assets to assist a cooperative that has been less successful. Because these corporations are cooperatives, each member would own a share of the new firm proportional to his holdings in the old one. Even so, associations with a relatively weak net worth position may be subsidized to some extent by the stronger associations but probably in no important way. The relatively strong associations may still gain considerably from the merger when compared with remaining small independent firms. Subsequent analysis shows that general membership of all associations would gain from a merger.

Under merger the revolving fund of each association could be taken over by the new organization. It could then be revolved according to the time period as established by the old firm, until the cycle has been completed. Thus the existing revolving funds would be handled apart from the revolving fund under the combined operation. Retained earnings of the new firm would be administered as a new fund. In other words, the retains before merger would be revolved by the new firm as originally planned or accelerated if possible. Thus, differences in revolving funds pose no particular problems.

## **Areas of Possible Savings with Merger**

### **Reorganization of Petroleum Delivery**

The areas of possible savings considered under reorganization are (1) rerouting, which is quantified by applying a mathematical technique to a set of routes designed to eliminate overlap; (2) using cost structure of most efficient firm; (3) lower costs by shifting location of trucks to reduce miles of deadheading; and (4) transporting bulk fuel from Portland. The routes used are not intended to show the optimum delivery scheme as the data used were not complete enough for this purpose.\*

Table 4 shows that savings could result from reorganization of the delivery system among the patrons. Under the truck delivery routing plan used in the analysis the model solution shows a saving of \$1,311. This saving appears to be quite nominal, but it should be kept in mind that the routing plan used in this study still may not be the most efficient. More detailed data concerning exact location of patrons and amount delivered at each stop would yield a solution that could show substantially greater savings. The \$1,311 savings in delivery costs represents reduction in cost due only to fewer miles traveled under the model plan than under the existing plan.

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\*The map showing the delivery routes used in the transportation model is not included here because of its detailed nature. It would serve no particular usefulness because some other routing, given more detailed information, would be more efficient. This study is more concerned with showing how specified changes in organization may mean greater efficiency rather than with showing precise magnitude of any and all changes.

Table 4. Comparison of Total Costs of Present Petroleum Delivery System and Total Costs of Rerouted Delivery System

Delivery plan	Cost	Savings
	<u>Dollars</u>	<u>Dollars</u>
Total costs of present delivery system	54,293	
Model solution (rerouted system)	52,982	1,311

Firm B which delivers 76% of the petroleum now enjoys the lowest delivery costs. Under merger it is reasonable to assume that the entire petroleum operation could be carried on with the cost structure of the most efficient firm. This saving would amount to \$6,026. Thus, savings caused by lower delivery costs and rerouting can be summarized as follows:

Savings resulting from rerouting--traveling fewer miles	\$1,311
Savings resulting from lower delivery costs per mile	<u>6,026</u>
Total savings	<u>\$7,337</u>

Under merger it is reasonable to further assume that there would be flexibility in determining location of each truck. At present, four trucks are located with firm C and one each with firms A and E. By moving one truck from the location of firm C to that of firm A, additional savings are possible because total miles of deadheading would be reduced. Taking into account this change in location of trucks, savings are again summarized:

Savings resulting from rerouting--traveling fewer miles	\$1,311
Savings resulting from lower delivery costs per mile	6,026
Savings resulting by reducing deadheading mileage	<u>358</u>
Total savings	\$7,695

In transporting petroleum from Portland in its own truck, firm C has been able to realize a net saving of 0.3 cents per gallon. If this saving could be achieved for the total requirements for the five merged associations, it would mean an additional saving of \$3,838. All of the savings discussed are now summarized below:

Savings resulting from rerouting--traveling fewer miles	\$ 1,311
Savings resulting from lower delivery costs per mile	6,026
Savings resulting by reducing deadheading mileage	358
Savings resulting by transporting total requirements from Portland	<u>3,838</u>
Total savings	<u>\$11,533</u>

Savings resulting from rerouting, reduced costs per mile, less deadheading, and more efficient transport amount to 21%. The above analysis illustrates factors which must be considered before maximum efficiency can be realized. Furthermore, under actual operating conditions almost continuous attention must be given to a reexamination of this and other aspects of the business because other alternative arrangements may prove to be more attractive as conditions change.

## Centralized Bookkeeping

The Present System. The five associations included in this study have a total of nine full-time employees and one part-time employee engaged in bookkeeping. The breakdown of these employees is given in Table 5.

Through interviews with the managers and their bookkeepers, the number of records processed was determined; i.e. the daily transactions, invoices, statements. With this information it was possible to develop a method for centralizing the bookkeeping with the objective of reducing the cost of performing this essential service.

Table 5. Number of Employees by Association, 1958

Association	Employees	Remarks
A	2	1 bookkeeper, 1 clerk
B	3	1 bookkeeper, 2 clerks
C	1	1 bookkeeper <u>1/</u>
D	1	1 bookkeeper <u>2/</u>
E	2 1/3	1 bookkeeper, 1 1/3 clerks

1/ Three other employees work part-time in the office and part-time in the store area.

2/ One other employee works part-time in the office and part-time in the store area.

A Centralized System. A centralized system would consist of a machine accounting installation at the new association's head office or other central point. This department would be staffed by a capable accountant, who would be in charge, and a full-time clerk. Part-time help could be employed as needed. There should be one person at each branch to process the daily transactions and keep inventory cards. This individual would be a combination cashier-bookkeeper. The branch cashier-bookkeeper should also be responsible for preparing and forwarding the day's business to the central office. With centralization, the accounting methods would need to be standardized to some extent in order to facilitate processing.

The Present System vs. Centralization. Under a centralized bookkeeping system with appropriate office equipment, Table 6 shows the general classifications and machine time.\*

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\*Basic rates of performance to determine machine time were provided by a manufacturer of office equipment. These rates of performance were verified by a Certified Public Accountant.



Table 6. Bookkeeping Classifications and Machine Time

Item	Machine time
	<u>Hours</u>
General ledger	1 per day
Accounts payable	1 per day
Accounts receivable	5 per day
Payroll	1 to 3 per week

Daily transactions (accounts receivable) take the most time to process. The other forms, small in number, are either monthly or annual in occurrence. A machine week would be about 7 1/2 hours daily for either a five- or six-day week depending upon total requirements.

Actual savings resulting from centralization fall into two categories: (1) forms, and (2) labor. The data below show that the savings in form costs would be \$3,300 the first year and \$3,500 in each subsequent year.

#### Form Cost

##### Present system

\$6,000

##### Centralized

First year \$2,700

Second year \$2,500

Labor costs of the present system versus centralization are shown below:

#### Labor Costs

##### Present system

Association:

A= \$ 8,900

B= 11,900

C= 5,900

D= 5,900

E= 9,900

Total \$42,500

##### Centralization

Central office:

Senior bookkeeper = \$ 8,100

One assistant = 4,200

One clerk in each

branch at \$3,300

per year = 16,500

Total \$28,800

It would be difficult to realize the annual saving of \$13,700 in labor for the first year or two unless some of the existing personnel were discharged. Under a centralized bookkeeping system, clerks with little experience at a salary of \$3,300 per year could easily perform the work in the branch offices. However, it is not practical to consider discharging the experienced personnel in the various branch offices, several of whom receive salaries twice that paid the clerks, because they often wait on customers and perform other duties as the need arises. Therefore, to reduce bookkeeping personnel may often require adjustments elsewhere in the business.

Machine cost is shown below:

<u>Machine cost</u>	
Initial cost	\$7,800 <u>1/</u>
Six percent federal tax	468
Five percent alternative cost	195 <u>2/</u>
First year machine cost	1,443
Annual machine cost after first year	975
<hr/>	
<u>1/</u> Ten-year flat rate, no salvage	
<u>2/</u> Alternative cost based on average value (\$3,900) at 5%	

Using the first-year machine cost of \$1,443, the possible savings with centralized bookkeeping can now be summarized. It seems likely that net savings of about \$15,000 could be realized, particularly after the first year or two. Furthermore, centralized bookkeeping would substantially reduce the cost of the audit which now amounts to about \$5,000 annually for the five associations:

Savings in forms (first year)	\$ 3,300
Savings in labor	<u>13,700</u>
	17,000
Less cost of machine	<u>1,443</u>
Net savings	\$15,557

### Specialization in Marketing

In pointing out possible advantages of specialized marketing under merger, the problem may be divided into two parts. The first of these, improving efficiency in utilization of plant capacity and equipment, is recognized but not analysed in this study. With specialized marketing, the producer of a given commodity would deliver it to the branch selected to perform this service. The second area, specialization in the actual marketing operation, would be carried out by one or two of the present managers. One could specialize in grain and one in grass seed marketing or it might prove more feasible for one to do both. This added work would be offset to a substantial degree by a reduction in the managerial requirements of the branch which would be assumed by the general manager.

Table 7 shows the general relationship of the average market price with the average price received by the association. In grain marketing, this relationship is reasonably close, which may demonstrate that in a well-developed market such as the grain market, a non-specialist seller can do a satisfactory job of marketing. However, in a less well-organized market such as that prevailing for grass seeds, it is much more difficult to obtain the full market price. If one of the now existing cooperatives would specialize in selling all the grass seeds marketed by cooperative members in the area, it is possible the result would be a higher average price, a price that would compare more favorably with the average market price.

It should be kept in mind that in the three years under observation the average price received for grass seeds by the cooperatives was less than the state average market price. If cooperative selling of grass seeds had resulted in obtaining the average market price for the quantities actually sold, an additional \$120,000 would have been paid to members in 1956, \$138,000 in 1957, and \$160,000 in 1958. It is reasonable to assume that on the average at

Table 7. Comparison of Market Price and Average Price Received  
by Association Over a Three-Year Period

(Market price is State average)

Commodity <u>1</u> /	Market price			Assoc. A			Assoc. D			Assoc. E		
	'56	'57	'58	'56-7	'57-8	'58-9	'56-7	'57-8	'58-9	'56-7	'57-8	'58-9
	<u>Cents per pound</u>			<u>Cents per pound</u>								
Wheat	3.38	3.40	3.02	3.49	3.68	3.07	3.64	3.66	3.14	--	--	--
Oats	2.25	2.09	2.09	2.52	2.19	2.35	2.42	2.27	2.50	--	--	--
Barley	2.19	2.04	2.10	2.60	2.14	2.61	2.57	2.41	2.80	--	--	--
Corn	3.04	2.71	2.55	3.51	3.27	3.23	3.27	3.06	3.12	--	--	--
Bent	43.5	24.0	22.5	45.1	22.9	20.0	34.6	20.6	18.2	24.8	17.7	14.6
Chewings fescue	32.0	29.5	32.0	29.4	29.9	31.6	34.5	31.1	32.3	29.0	28.5	27.7

1/ For the year 1958, the grains included in this table represent 99.3% of the total pounds of grain handled for all associations. The grass seeds account for 98.4% of the total grass seed volume.

least, the prices received by marketing cooperatives should approach the market prices. A coordinated seed marketing program should do much to bring the average pool price in line with the market price.

### Supplies

In the miscellaneous supply activity (hardware and related items), associations A and E show a net loss. Association A's loss was \$5,518 in 1958 and association E had a net loss of \$2,595 in the same year. It would appear on the surface at least that elimination of this activity in associations A and E would mean a savings of \$8,113. This is not necessarily the case, however, for several reasons. This line of business activity may be of a service type and provide the convenience of one-stop shopping. If this is the case, eliminating it may cause some members to go elsewhere. It may also be true that some supplies are priced relatively low to attract business to the association.

Other studies indicate that a loss in this area is not uncommon, especially when traditional accounting procedures are employed to show profit and loss. A case can be made to allocate only the out-of-pocket costs to the hardware activity. The plant, or in this case, the retailing facilities, already exists. It is, therefore, logical to use only out-of-pocket costs in computing profit and loss rather than assigning a full share of fixed costs to this activity.

With respect to association A, if the relevant fixed costs are not charged to the supply activity, there is still a loss of \$1,400 for the year 1958, but the loss has been reduced by nearly \$4,200. This still does not necessarily mean that supply activity should be discontinued. The importance of the other factors mentioned previously should be considered. After making the same adjustment in cost allocations in association E, there is a return above out-of-pocket costs of more than \$1,900 for the hardware and supply activity.

### **Nonquantitative Aspects in Cooperative Merger**

When important differences in the percent of ownership and annual net margins exist with any group of firms contemplating merger, members of a stronger and more efficient firm must be assured that they will not be required to subsidize the weaker ones. Even so, association members may oppose merger because it means becoming part of a large organization, and sacrificing some autonomy.

Possible management and employee opposition may arise because of unfavorable reflection such action may have on management and other employees' previous service. A contemplated merger could also be opposed by employees who might lose their jobs. It is difficult for some employees to realize that if their work is now satisfactory there probably will be room for them in a new company.

Merging associations not in the same town should consider the general attitudes among the areas involved. Problems of this type can develop because of previous difficulty, religious differences, and/or regional independence of an area.

Other opposition could stem from noncooperative, noncompeting businessmen fearful of losing business normally attracted to their town by the cooperative.

## Summary and Conclusions

The associations included in this study are limited in certain activities because of size, while in other activities duplication of service exists. For this reason merger will result in more efficient use of resources without reducing services.

An estimate of the magnitude of possible savings under merger is difficult to determine. However, savings resulting from a centralized bookkeeping system and reorganization of petroleum delivery could amount annually to as much as \$15,500 and \$11,500, respectively. These would be important savings. Also, marketing of grass seeds probably could be improved if selling were more specialized and expert sales personnel were developed. Cooperative pool prices were below the Oregon average market price received during 1956, 1957, and 1958. A better performance from cooperatives in sale of grass seeds could mean as much as \$140,000 more income to growers annually, assuming the quantities marketed in the years ahead are the same as for the years 1956-58.

The general manager of the new firm could be one of the present managers. This man, for the time being, could also continue to manage his own branch. The actual work load would not be as great as may appear, largely because of the reduction in managerial time connected with his own branch, particularly on the marketing side. Only a nominally higher salary would need to be paid the general manager so long as strong leadership existed in most of the branches.