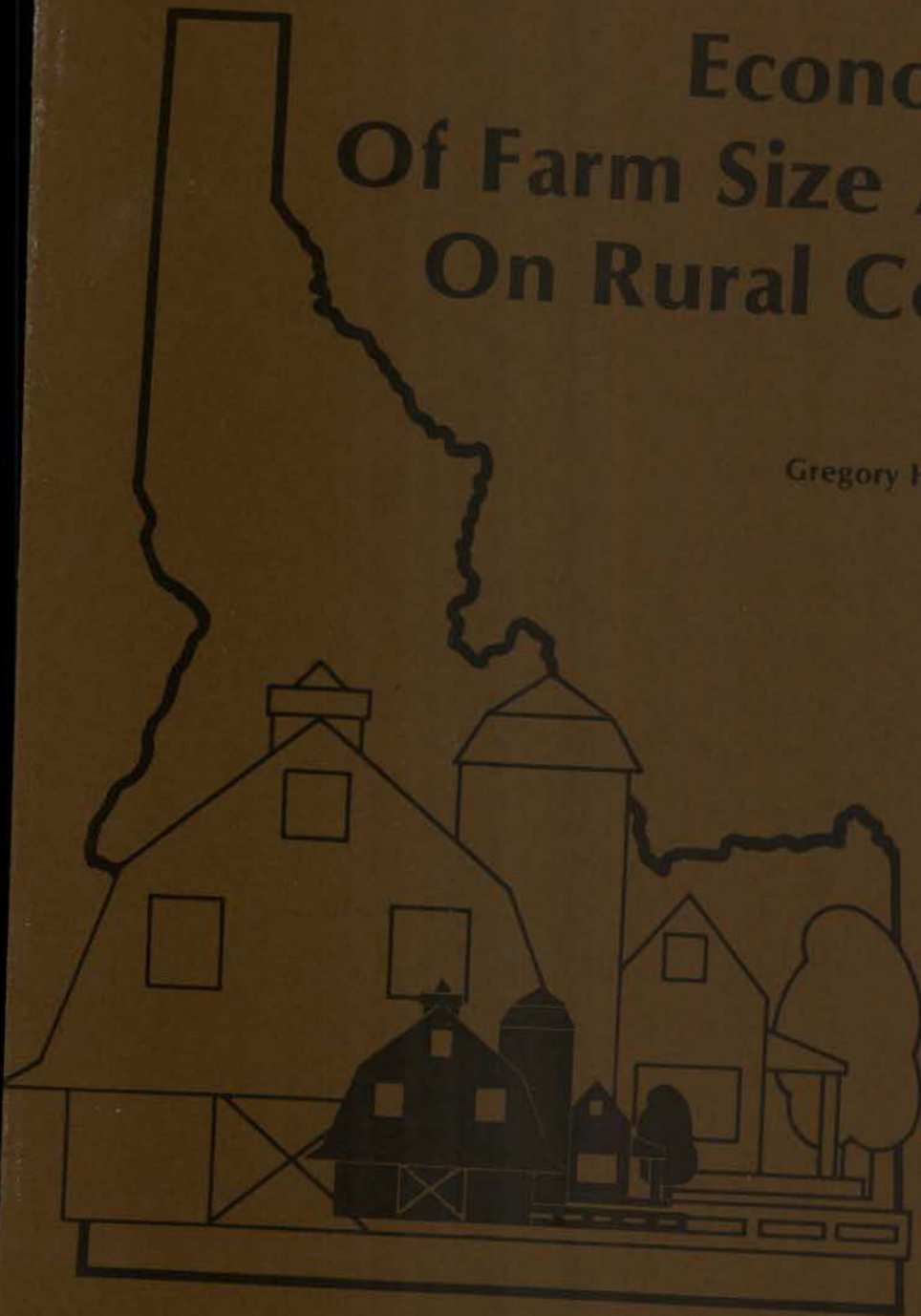


# Economic Impact Of Farm Size Alternatives On Rural Communities

Gregory H. Michaels and Gerald Marousek



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## Table of Contents

Economic Impact of Farm Size Alternatives on Rural Communities .....	1
Study Area and Methodology 1	
Sampling and Data Collection 1	
The Structure of the Jerome-Wendell Economy .....	2
The Farm Sector 2	
Large Farms 2	
Small Farms 4	
Nonfarm Agricultural Industries 5	
Nonagricultural Industries 6	
Households 6	
Government 7	
Summary: Economic Structure 7	
Economic Interdependence in the Jerome-Wendell Economy ...	8
Economic Interdependence 8	
Direct and Indirect (Total) Requirements 9	
Multiplier Analysis 9	
Output Multipliers 9	
Income Multipliers 10	
Employment Multipliers 10	
Consistent Forecasting 10	
Output Impacts 11	
Income Impacts 11	
Employment Impacts 11	
Summary: Economic Interdependence 11	
Conclusions and Implications .....	12
Structural Analysis 12	
Multiplier Analysis 12	
Consistent Forecasting 12	
Policy Considerations 13	
References Cited .....	14
Appendix .....	15
Tables 16	
Exhibits 20	

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# Economic Impact of Farm Size Alternatives On Rural Communities

*Gregory H. Michaels and Gerald Marousek*

Although American agriculture has been adopting new technology for 100 years or more, the rate of adoption has greatly accelerated in recent decades. This technological revolution has resulted in important changes in rural America. Fewer, larger farms have reduced employment opportunities in agriculture. This, in turn, has affected the viability of towns in farming areas. Changes in agricultural technology, in farm size and in farming area towns have had important economic and social effects on rural communities (1, 2, 3, 6, 7, 14).

This study of the economic impact of farm size alternatives on a rural community in southern Idaho assumes the economic interdependence of farm and nonfarm sectors in the rural community. The study had two objectives: (1) to derive empirical measures of the relative economic importance of small farms and large farms, and (2) to estimate the income, output and employment effects of farm size alternatives on the rural community.

## Study Area and Methodology

The Jerome-Wendell community in southcentral Idaho was chosen as the study area because it is similar to many rural communities in America. Farming is the basic and long-established industry. Crop and livestock production is diversified; farm size and structure include part-time, single family and partnership arrangements. Of the towns within the area, Wendell is a crossroads village while Jerome is the seat of county government and the site of a recently built plastic ware fabrication plant. Twin Falls is the regional trade center; major cities are Boise, 120 miles west, and Salt Lake City, 220 miles south.

Examination of past trends showed that the Jerome-Wendell community has experienced the changes in farm-size structure, agricultural employment opportunities and population movements which have taken place generally in rural America over the last generation (1, 2, 3, 8, 16, 18, 19, 23).

Input-output analysis was used to measure the economic interrelationships among the industries in the study area. The assumptions and procedures associated with regional input-output models have been described by various authors (4, 12, 13, 17) and were adhered to in this study. Income multipliers were derived as described by Miernyk

(15) and Richardson (17). Methods developed by Doeksen and Schreiner (5) and Hirsch (9) for computing employment multipliers were used. These plus output multipliers were the bases for consistent forecasting (17) of final demands to reflect alternative structural changes over a 5-year period.

The Jerome-Wendell economy was divided into 22 endogenous and 4 exogenous sectors, with households included as an endogenous sector. Agriculture composed two sectors: small farms, defined as those having less than \$25,000 in gross sales of farm products in 1974 (the base year), and large farms, those with more than \$25,000 gross farm sales. This approximates the boundary between the contracting and the expanding sectors of agriculture in the study area in 1974.

Other exogenous sectors were keyed to the U.S. Department of Commerce Standard Industrial Classification (SIC) after eliminating industries not found in the study area and combining those of less importance. This procedure, plus the necessity of grouping related firms to maintain confidentiality, resulted in a higher level of aggregation than is optimal in an input-output model. However, since the purpose of the study was to determine the economic impact of structural change in the agricultural sector on the total economy of the community, the sectoring scheme did not detract from achieving the objectives. The model included 4 nonfarm agricultural sectors and 15 nonagricultural sectors.

The exogenous sectors were state and local government, federal government, net inventory change — depreciation allowance and exports — imports (Appendix Table I).

## Sampling and Data Collection

Nearly all data were obtained by personal interview. For the agricultural sectors a randomized block sample design was used. Interviewing all farms and rural households within the sample blocks yielded 84 farm responses (49 small farm and 35 large farm) and 70 nonfarm rural household responses. This was 14% of the estimated population of each group in the study area. Published data, expert observers and average values were used to supply missing information (22). Appendix Table II shows the farm yield and price estimates used.

The telephone directory and observation were used to compile the population of 294 business firms operating in Wendell and Jerome. All agriculturally related industries were interviewed. Nonagricultural industries were stratified by size according to employment and business volume. The sampling goal was two-thirds of the firms in each size category of each industry. The goal was met or exceeded in most sectors; lack of response in some sectors with many small firms, e.g. consumer services, reduced the overall sample coverage to 60% of the firms in the study area. This exceeded sampling criteria used by others in regional input-output studies (12).

Farm and rural nonfarm households were interviewed as part of the agricultural sector sample. Town households were assumed to have the same spending patterns as rural households. This sample was expanded to account for all households in the study area and was used to develop the household column in the input-output table (households as consumers). The business sector questionnaire included

items on the geographic residence of employees, from which the labor supplied by households to each industry was derived (households row in the matrix). National data were used both as a supplement to and a benchmark for assessing the reliability of business and household income and expenses (10, 11).

The 16 government agencies in the study area were surveyed by a combination of mail, telephone and personal interview. Complete expenditure data were collected, but it was necessary to use secondary national data sources to assign tax revenue by industry (20, 21). Thus although federal and state-local government sectors were included in the model, both were treated as exogenous industries. State and local government included municipal, county and state agencies.

The questionnaire schedules for the rural (farm and household), business and public sector surveys are reproduced as Appendix Exhibits A, B and C.

## The Structure of the Jerome-Wendell Economy

The interindustry transactions table shows the sales and purchases taking place between each industry (Appendix Table I). It serves as the basis for analyzing the structure of the Jerome-Wendell economy. The aggregated interindustry transactions table, grouping the several individual industries, is presented as Table 2.

### The Farm Sector

Of the 591 farm enterprises operating within the study area in 1974, 245 were estimated to be large farms and 346, small farms. Within the small farm sample, 74% had 120 acres or less. Conversely, 76% of the large farms were larger than 120 acres. The size distribution of farms in the Jerome-Wendell area is summarized in Table 1.

#### Large Farms

Total large farm output for 1974 was estimated at \$37.1 million. Exports accounted for 43% of total large farm sales, with sales to nonfarm agricultural enterprises comprising 26% (Table 2). For commodities marketed in 1974 (excluding inventory accumulation), dairy products ranked first in total value (\$10.1 million), food crops second (\$9.1 million) and livestock and feed and seed crops ranked third

and fourth. More than one-half of all farm sales exported went to purchasers in Twin Falls (Table 3).

Of large farm production requirements, 25% was supplied by households, 20% by imports, 11% by nonfarm agricultural industries, 10% by other farmers and 8% by local nonagricultural industries. Taxes, assessments and depreciation allowances accounted for the remaining production costs.

Twin Falls captured 56% of the feed and seed market and 34% of the agricultural implement market. Large farms purchased 55% of their total production requirements locally, 9% from Twin Falls and 36% from other imports. Details of large farm production purchases are shown in Table 4.

Large farms in the study area required an average of 2.8 man-years of labor with the farm operator contributing 1.18 man-years, the operator's wife and other family members 1.05 man-years and hired labor 0.57 man-years. Thus, 79% of total labor requirements of large farms was met by family labor (Table 5).

On 46% of the large farms either the husband or wife or both had off-farm employment during 1974. Both husband and wife performed some work off the farm on 13% of large farms. Large farms averaged 124 person-days of off-farm work. Off-farm employment data for large farms are summarized in Table 6.

Several items in the questionnaire were designed to provide information on the stability and outlook for the rural sector. Respondents were asked to indicate whether they considered their present situation to be that of full-time farmer, part-time farmer, hobby-recreational farmer or nonfarmer. They were also asked if and in what capacity they expected to be farming in 5 years. On large farms, 91% of respondents considered themselves full-time farmers, and the remaining 9% considered themselves part-time farmers. All expected to be farming at the end of 5 years. All part-time farmers expected to become full-time farmers by the

Table 1. Percentage distribution of small and large farms, by acreage, Jerome-Wendell study area, 1974.\*

Acres	Small farms	Large farms
120 or less	74%	24%
121-180	11%	17%
181-240	6%	15%
Over 240	9%	44%

\*Small farm: less than \$25,000 annual gross sales; large farm: \$25,000 or more annual gross sales.

Table 2. Aggregated interindustry transactions table, Jerome-Wendell study area, 1974 (\$1,000).

Industry producing	Industry purchasing		Nonfarm agricultural industries	Non-agricultural industries	Households	Government	Exports	Total (adjusted) output
	Large farms	Small farms						
Large farms	(8%) 3,043.3 (8%)	(0.4%) 158.0 (2.0%)	(26%) 9,664.5	( - ) 8.9 ( - )	0	0	(43%) 16,031.8 (14%)	37,126.6
Small farms	(12%) 809.0 (2%)	(0.6%) 42.0 (0.6%)	(23%) 1,536.6 (4%)	( - ) 0.1 ( - )			(23%) 1,571.2 (1%)	6,735.4
Nonfarm agricultural industries	(10%) 4,032.7 (11%)	(3.0%) 1,031.9 (15.0%)	(2%) 640.0 (2%)	(0.6%) 241.6 (0.3%)		( - ) 1.7 ( - )	(104%) 41,574.9 (37%)	39,913.5
Nonagricultural industries	(4%) 2,801.6 (8%)	(2.0%) 1,446.8 (21.0%)	(1%) 886.4 (2%)	(6.0%) 4,154.7 (6.0%)	(26%) 19,043.9 (26%)	(1.0%) 479.8 (6.0%)	(61%) 45,435.6 (41%)	74,248.8
Households	(25%) 9,374.2 (25%)	(4.0%) 1,302.6 (19.0%)	(6%) 2,398.4 (6%)	(38.0%) 13,974.7 (19.0%)		(7.0%) 2,720.9 (36.0%)	(20%) 7,270.9 (7%)	37,041.7
Imports	(8%) 7,435.3 (20%)	(2.0%) 1,456.1 (22.0%)	(25%) 22,638.3 (57%)	(52.0%) 47,590.7 (64.0%)	(11%) 10,111.8 (25%)	(3.0%) 2,703.0 (35.0%)		91,935.2

NOTE: Percentage above each dollar figure indicates sales of the producing industry to the purchasing industry as a percentage of total sales of the producing industry. The percentage below each figure indicates purchases of the industry from the producing industry as a percentage of total outlays of the purchasing industry.

Table 3. Large farm commodity sales and market distributions, Jerome-Wendell study area, 1974.

Market Commodity	Other farmers	Jerome-Wendell	Twin Falls	Outside	Commodity totals
Feed and seed	\$1,511,037 (52%)	\$784,513 (27%)	\$266,366 (9%)	\$323,852 (12%)	\$2,885,768 (100%)
Food crops	0	\$3,595,603 (39%)	\$872,951 (10%)	\$4,645,331 (51%)	\$9,113,885 (100%)
Dairy products	0	\$2,307,106 (23%)	\$6,902,868 (68%)	\$912,101 (9%)	\$10,122,075 (100%)
Livestock	\$1,690,263 (25%)	\$2,986,178 (44%)	\$359,419 (5%)	\$1,748,886 (26%)	\$6,784,746 (100%)
Market totals	\$3,201,300 (11%)	\$9,673,400 (34%)	\$8,401,604 (29%)	\$7,630,170 (26%)	\$28,906,474 (100%)

Table 4. Selected large farm production inputs, total and average level of demand, and geographic source of supply, Jerome-Wendell study area, 1974.

Selected major inputs	Average per sampled farm	Total for large farm sector	Source of purchases		
			Jerome-Wendell	Twin Falls	Other import
Feed and seed	\$14,846	\$3,637,239	19%	56%	25%
Agricultural chemicals and fertilizers	\$4,178	\$1,023,656	98%	0	2%
Irrigation equipment	\$3,027	\$741,629	0	10%	90%
Agricultural implements	\$5,378	\$1,317,540	55%	34%	11%
Petroleum products	\$3,485	\$853,723	81%	17%	2%
Total expenses (includes expenses not itemized above)	\$151,537	\$37,126,600	55%	9%	36%

**Table 5. Large farm labor requirements, by source, Jerome-Wendell study area, 1974.**

Source	Average hours/month	Man-year equivalents	Total man-years in large farm sector
Farm operator	282	1.18	289
Operator's wife	83	.35	86
Other family members	167	.70	171
Hired labor	137	.57	140
Total	669	2.80	686

**Table 6. Off-farm employment characteristics of large farms, Jerome-Wendell study area, 1974.**

Days of off-farm employment per year	Off-farm employment of farm operator (percentage of sample)	Off-farm employment of farm operator's wife (percentage of sample)
none	78	67
1-100	0	8
101-150	9	13
151-300	4	4
301-365	9	8
Total	100	100
Average man-days of off-farm employment for those farms reporting off-farm employment	240 man-days	180 man-days
Average man-days of off-farm employment for all large farm respondents	64 man-days	60 man-days
Percentage of sample indicating either operator or his wife performing off-farm work	.46%	
Percentage of sample indicating both operator and his wife work off-farm	.13%	

end of 5 years, while 3% of the full-time farmers expected to become part-time farmers. Overall, 85% of those surveyed expected to remain full-time farmers.

Nearly one-half of the large farm operators anticipated making some changes in their operations. Of those planning changes, 44% expected to shift existing resources from one enterprise to another, 50% planned to expand plant and equipment (land, irrigation system or buildings) and 6% indicated some other change. When asked what obstacles forestalled change, the most common response was availability of money. Other obstacles included the quality of available labor, market uncertainty and high factor prices.

### Small Farms

Total gross output of small farms was estimated at \$6.7 million in 1974. Exports from the area and sales to local nonfarm agricultural businesses each accounted for 23% of the total (Table 2). Livestock and food crops each had a sale value of \$1.1 million. Small farms depend relatively more on local markets than large farms, selling 61% of their output locally (Table 7).

Small farm production requirements were filled by imports (22%), nonagricultural businesses (21%), households (19%) and nonfarm agricultural businesses (15%). Less than 3% of production requirements were purchased from other farmers. The remaining small farm outlays consisted of payments to government and depreciation allowances (Table 2).

Small farmers purchased 59% of their production outlays locally. Although small farms exceeded large farms in numbers (346 vs. 245), total local expenditures of large farms was \$16.4 million greater (Table 8).

Small farms required 512 man-years of labor compared with 686 man-years for the large farm industry. Family labor fulfilled 95% of the total labor requirement of small farms vs. 79% on large farms (Table 9). The \$13,150 output per man-year on small farms measured against \$54,120 on large farms illustrates the higher labor productivity on large farms.

Of the small farmers interviewed, 74% indicated that the farm operator, his wife or both worked off the farm to some extent; 18% reported that both the operator and his wife had

**Table 7. Small farm commodity sales and market distributions, Jerome-Wendell study area, 1974.**

Commodity \ Market	Other farmers	Jerome-Wendell	Twin Falls	Outside	Commodity totals
Feed and seed	\$796,196 (88%)	\$107,877 (12%)	0	0	\$904,073 (100%)
Food crops	0	\$778,338 (71%)	\$103,129 (9%)	\$213,027 (20%)	\$1,094,494 (100%)
Dairy products	0	\$34,729 (4%)	0	\$819,601 (96%)	\$854,330 (100%)
Livestock	\$54,804 (2%)	\$615,756 (57%)	\$366,013 (35%)	\$69,430 (6%)	\$1,106,003 (100%)
Market totals	\$851,000 (22%)	\$1,536,700 (39%)	\$469,142 (12%)	\$1,102,058 (27%)	\$3,958,900 (100%)

off-farm work. Overall, 46% of the operators and 45% of the farm wives had off-farm work (Table 10). The average small farm household worked 227 person-days off-farm in 1974.

More than half — 57% — of small farmers considered themselves full-time farmers, 29% considered themselves part-time, 10% hobby-recreational farmers and 4% nonfarmers. Of the full-time farmers, 17% anticipated that they would not be farming in 5 years; 20% of hobby-recreation farmers did not expect to be farming in 5 years, nor did 14% of the part-time farmers. In all, 22% of small farmers did not expect to be farming at the end of 5 years. Of those small farmers expecting to remain in production, 16% planned to devote more time to their operation, while the others expected to continue at the same level.

Of the 37% of small farmers indicating that they planned changes in their operation, one-half expected to expand their livestock or equipment investment, 22% expected to reallocate existing resources and 28% planned other changes. Obstacles to change included obtaining financing, land constraints, government regulations and market prices for inputs and products.

## Nonfarm Agricultural Industries

Four industries comprised the nonfarm agricultural sector: agricultural services, farm product raw materials, farm equipment dealers and agricultural chemicals. These industries relied on local farmers for 13% of their sales. The bulk of the \$41.5 million output of this sector was sold to farmers outside the Jerome-Wendell study area. (Exports exceed total output for nonfarm agricultural industries in Table 2 because of the deletion of net inventory change.) On the input side, the nonfarm agricultural sector showed greater interaction with the local economy. The farm sector supplied 30% of the nonfarm agricultural sector's input requirements (26% met by large farms, 4% by small farms), households 6% and imports 57%. The sector as a whole required 404 man-years of labor, 9% of the employment in the economy.

Table 9. Small farm labor requirements, by source, Jerome-Wendell study area, 1974.

Source	Average hours/month	Man-year equivalents	Total man-years in small farm sector
Farm operator	219	.91	315
Operator's wife	61	.25	88
Other family members	60	.25	86
Hired labor	16	.07	23
Total	356	1.48	512

Table 10. Off-farm employment characteristics of small farms, Jerome-Wendell study area, 1974.

Days of off-farm employment per year	Off-farm employment of farm operator (percentage of sample)	Off-farm employment of farm operator's wife (percentage of sample)
None	54	55
1-100	2	8
101-150	0	5
151-300	26	24
301-365	18	8
Total	100	100
Average man-days of off-farm employment for those farms reporting off-farm employment		
	279 man-days	213 man-days
Average man-days of off-farm employment for all small farm respondents		
	129 man-days	98 man-days
Percentage of sample indicating either operator or his wife performing off-farm work . . . . . 74%		
Percentage of sample indicating both operator and his wife work off-farm . . . . . 18%		

Table 8. Selected small farm production inputs, total and average level of demand, and geographic source of supply, Jerome-Wendell study area, 1974.

Selected major inputs	Average per sampled farm	Total for small farm sector	Source of purchases		
			Jerome-Wendell	Twin Falls	Other import
Feed and seed	\$1,762	\$609,559	22%	71%	7%
Agricultural chemicals and fertilizers	\$696	\$240,877	80%	3%	17%
Irrigation equipment	\$524	\$181,362	0	91%	9%
Agricultural implements	\$857	\$296,612	49%	38%	13%
Petroleum products	\$860	\$297,446	89%	11%	<1%
Total expenses (includes expenses not itemized above)	\$19,466	\$6,735,400	59%	15%	26%

## Nonagricultural Industries

The nonagricultural industries sector included all remaining endogenous industries except households. In all respects these industries as a group represented the largest sector of the economy. Total output in 1974 was \$74.2 million. Exports provided the largest market, accounting for 61% of sales. Local households purchased 26% of sector output and farms purchased 6%. On the input side, interaction with the rest of the endogenous economy is basically confined to households, which supplied 19% of total factor requirements. Imports supplied 64% of the factor requirements (Table 2). Employment within the nonagricultural industries sector amounted to 2,420 man-years, 55% of the employment in the economy.

Response to questions on the economic climate in the community indicated that business proprietors in Jerome and Wendell were nearly unanimous in their optimism. One-third of the business firms had either begun operating or had been brought under new management within the previous 5 years. Respondents cited two reasons most often for locating in the Jerome-Wendell area: (1) 33% of the newer operators indicated that they were natives of the area and had located there for that reason; (2) 29% believed that the economy was growing and offered a good opportunity for a successful business. Other factors which influenced the location decision were: (a) the advantages of a small community in relation to urban areas, (b) availability of labor, land, water, power and rail service and (c) proximity to markets.

Entrepreneurs were generally "bullish" on the Jerome-Wendell economy. Only 5% explicitly described economic conditions in negative terms, while 63% made positive statements about the local economy. The types of firms mentioned most frequently by entrepreneurs as deserving encouragement to locate in the area included quality men's and women's clothing stores, a shoe store, agricultural commodity processing plants, a quality restaurant, a motion picture theatre, recreation facilities and a bakery. Despite nationwide recessionary conditions in 1974, entrepreneurs in the study area sometimes explicitly stated that they believed the local economy to be sufficiently diverse to avoid unemployment difficulties experienced elsewhere.

One-third of the business people interviewed favored population growth, while 25% were content with the current level of population. Three-fifths of the respondents were sympathetic to economic growth, while 24% preferred that the community maintain its existing economic status. Planned economic growth that would not over-tax social services was favored by 9% of the respondents. Recognition of the economic problems of smaller farmers and preference for a farm-size structure characterized by more small farms rather than "large corporate farms" was indicated by 30% of the business people.

To indicate the validity of projections based on the input-output analysis, respondents were asked whether and in what respects the 1974 data differed from a typical year. If substantial differences were cited, coefficients would require adjustment to reflect normal conditions more accurately. Opinion was divided: 1974 was judged to be a typical year by

45% of business sector respondents and atypical by 46%. Despite statements by some entrepreneurs to the contrary, other businessmen believed the local economy was vulnerable to national economic adversities. Because of the oil embargo during the winter of 1973-1974, business people in Jerome and Wendell thought that the automotive sales were down and costs of doing business higher than in previous years. Other respondents believed consumption purchases were down because of consumer anxiety built up by media coverage of the national recession. Abnormal conditions existed for other businessmen because of parts shortages, factor prices, sales volume and agricultural commodity prices. Nonfarm agricultural industries (farm equipment dealers, fertilizer suppliers, commodity warehouses and agricultural services) generally considered 1974 to have been atypical because of high commodity prices and supply shortages. Most of the respondents who considered 1974 atypical cited inflated prices as the distinguishing factor. Since this included both input and product prices no adjustments were made to compensate for price changes. Given the few responses that 1974 trade patterns were significantly different from other years, no adjustment was made in import coefficients.

Operational changes were anticipated by 30% of the businessmen surveyed. Plans for expanding plant and equipment were expressed by 18%, 4% indicated intention to close and 8% cited other changes. Obstacles to desired changes included government regulations (e.g., OSHA, Affirmative Action, EPA) cited by 8% as hampering employment expansion ambitions, and financing problems mentioned by 9%. Other obstacles included space limitations for parking and plant expansion and zoning requirements.

## Households

The total income to all households in the study area in 1974 was \$37 million. Sources of household income were 29% from farms (4% small farms, 25% large farms), 6% from nonfarm agricultural industries, 38% from nonagricultural industries, 7% from government sources (includes welfare, social security and unemployment payments) and 20% from industries located outside of the study area (Table 2).

On an aggregate basis, one-half of household expenditures took place within the local economy. Larger farm households spent 56% of their consumption dollars with local merchants, 27% in Twin Falls and 17% elsewhere (Table 11). The average large farm household spent \$9,434 (exclusive of taxes) in 1974, amounting to a total market of \$2.3 million. Small farm households spent 64% of their total outlays locally and constituted a market nearly equal in size to large farm households (Table 12).

The greater dependence of small farm households on local sources for consumption purchases has significant implications for the economic impact of continued decline of small farms. As small farms cease production, returns to small farm households from the farm operation are diminished. The magnitude of resulting negative multiplier effects depends on the extent to which small farm household members are able to find employment, remain in the area and maintain consumption patterns. Should the members of



small farm households be unable to remain in the local area and be displaced by large farm households with a greater tendency to import household goods, negative impacts on the economy would be registered through household as well as production activities of small farms. The specific impacts on the Jerome-Wendell economy are discussed in the next major section of this report.

## Government

The government sector, including federal, state and local governments, played a relatively minor economic role in the

Jerome-Wendell area. Government provided 9% of the jobs, 7% of household income and \$0.5 million local purchases (Table 2). Exact amounts and incidence of government transfer payments to households was difficult to establish given the lack of secondary data and the boundaries of the study area. State agencies provided estimates of three types of transfer payments: 1974 unemployment benefits paid to households within the study area equalled approximately \$94,000, welfare payments \$96,000 and social security benefits \$335,000. These transfer payments accounted for 1% of total household income.

## Summary: Economic Structure

This section has described the structure of the Jerome-Wendell economy, fulfilling the first objective of this study. The highlights are:

1. Small farms as defined in this study represent a relatively small economic sector. They provided 12% of total employment, 7% of consumer spending and 4% of household income. Large farms provided 15% of total employment, 7% of the consumer spending and 25% of household income.
2. Small farms represent a relatively small market for the output of local businesses. They purchased about 1% of the output of other farms, 3% of the output of nonfarm agricultural industries and 2% of the output of nonagricultural industries. Large farms purchased 8% of the output of other large farms, 12% of the output of small farms, 10% of the output of nonfarm agricultural industries and 4% of the output of nonagricultural industries.

Table 11. Selected large farm household expenses, total and average level of demand, and geographic source of supply, Jerome-Wendell study area, 1974.

Selected major expense categories	Average per sampled household	Total for large farm sector	Source of purchases		
			Jerome-Wendell	Twin Falls	Other import
Groceries	\$2,023	\$495,574	72%	23%	5%
Furniture and appliances	\$415	\$101,569	47%	53%	0
Automobile purchases and maintenance	\$754	\$184,610	24%	26%	50%
Clothing	\$512	\$125,376	40%	60%	<1%
Total expenses (includes expenses not itemized above)	\$9,434	\$2,311,373	56%	27%	17%

Table 12. Selected small farm household expenses, total and average level of demand, and geographic source of supply, Jerome-Wendell study area, 1974.

Selected major expense categories	Average per sampled household	Total for small farm sector	Source of purchases		
			Jerome-Wendell	Twin Falls	Other import
Groceries	\$1,382	\$478,069	81%	18%	1%
Furniture and appliances	\$189	\$65,557	57%	22%	21%
Automobile purchases and maintenance	\$320	\$104,438	60%	33%	7%
Clothing	\$323	\$111,725	51%	47%	2%
Total expenses (includes expenses not itemized above)	\$6,060	\$2,096,598	64%	27%	9%

3. Small farmers spent relatively more of their production expenditures locally than large farmers (59% vs. 55%). Large farms outspent small farms in total dollars with local merchants in 1974, \$20.4 million compared to \$4.0 million.
4. Small farms required fewer man-years of labor per farm and as a sector, and exhibited a higher labor-output ratio (labor intensity) than large farms.
5. Small farm households had more off-farm employment than large farm household. Small farm household members worked an average 277 man-days off the farm compared with 124 for large farm households.
6. Within 5 years after the survey, 22% of the small farmers sampled expected to cease farming but all large farmers expected to stay in production.
7. Small and large farm households each spent \$1.3 million locally. Small farm households provided a 10% smaller aggregate market than large farm households, but showed a higher propensity to spend locally.

Although the total dollar impact of small farms in the Jerome-Wendell community is overshadowed by other industries and by large farms, some of the relative aspects of small farm economic activity will be shown to have significant impacts on economic structural change.

## Economic Interdependence in the Jerome-Wendell Economy

### Economic Interdependence

Knowledge of economic interdependence helps one understand the structure of the Jerome-Wendell economy and the process through which endogenous industries influence regional economic activity at different rates. One might conclude that the larger the dollar output of the industry the larger the interdependence with the remainder of the economy and the greater the economic impact of changes in the industry's activities. But this does not necessarily follow. While the largest industries might employ the most people or produce the most output they do not necessarily contribute proportionally to the generation of total regional income, output and employment.

An industry's economic interdependence with the remainder of the regional economy is determined by two general characteristics: (1) magnitude of its direct requirements coefficients, and (2) its pattern of purchases of production inputs. Direct requirements coefficients measure the value of purchases from other industries necessary to produce each dollar's worth of output. Large direct coefficients from endogenous industries indicate that a large portion of each dollar spent remains within the local economy. However, large direct requirements coefficients alone are not sufficient to insure high levels of interdependence. The industries supplying input requirements must in turn have high direct requirements from endogenous industries to insure high interdependence. That is, the degree of economic interdependence depends not only on what happens to dollars in the first transaction, but what happens in successive transactions as well.

If an industry has large direct requirements from another industry that in turn has high direct requirements from a third industry that also exhibits high direct requirements from local industries, succeeding rounds of spending will retain transactions flows within the economy, generating greater economic activity. However, if an industry has high direct requirements from industries with high propensities to import, or itself has high propensities to import its factor inputs, a large portion of each additional dollar spent with that industry will leak out of the system, generating less internal activity. In this manner, it is possible to have industries with low levels of output but with high capacity to generate regional output, income and employment, as well as to have industries with high levels of output but low capacity to generate regional economic activity.

Direct requirements coefficients of industries can be compared to determine their relative propensities to purchase inputs locally. Small farms spent proportionally more locally than large farms, except for intra-farm transactions, purchases of professional services and payments to households (Appendix Table III). Thus, although large farms spent more locally in absolute terms, small farms showed higher first round capacity to generate economic output. Both farm sectors had higher direct requirements coefficients than retail and service sectors, indicating that farms spent a higher proportion of their production outlays locally.

An alternative measure of the direct propensity to spend dollars locally is reflected in the import coefficients for each industry. As with direct requirements coefficients, these indicate the amount of materials and services required to

produce each dollar's worth of output. The average propensities to import for small and large farms were nearly equal; both were much lower than for nonfarm businesses. Service industries and households purchased relatively less outside the local economy than did businesses, but still showed a higher propensity to import than farms.

## Direct and Indirect (Total) Requirements

Total requirements coefficients take into account three interrelated stages of spending: (1) the direct effects of increasing sales to final demand, (2) the indirect effects upon each industry of another industry increasing sales to final demand, and (3) the induced effects of endogenous households increasing consumption because of larger wage payments resulting from increased economic activity. Conversely, total requirements coefficients measure total decrease in demand from direct, indirect and induced sources.

The total requirements for large farms can be used to illustrate the sources of economic activity. To sustain a \$1 increase in final demand for farm commodities, large farms must increase their output by \$1.10 (Appendix Table IV). Because of economic interdependence, the increased large farm output requires activity in other sectors. Small farms must increase output by \$0.03, agricultural services by \$0.05 and other industries as indicated in the large farm column of the total requirements table, including a \$0.34 increase in the labor supply by households. The sum of the total requirements coefficients is the output multiplier — 1.87 for the large farm sector.

## Multiplier Analysis

Multipliers measure economic interdependence in terms of different variables such as output, income and employment. Several types of multipliers are useful because industries having a high multiplier for one variable will not necessarily have high multipliers for others. Therefore including more than one variable provides a better measure of economic change. Multipliers indicate which industrial activity will generate the largest regional output, income or employment for each additional dollar of final demand, unit of income or man-year of employment. In rural areas with low income and high unemployment and outmigration, regional multipliers can assist in determining which economic activities can do most to improve income and employment. The discussion here focuses on implications of multipliers for small and large farms, with mention of nonfarm indicators where appropriate.

### Output Multipliers

The output multiplier for both large and small farms was 1.87 (Table 13). Thus, to sustain a \$1 increase in final demand for farm commodities, the entire economy must increase output by \$1.87.

Comparing the relative size of multipliers shows which industries generate the greatest total economic output. Only one industry had an output multiplier higher than large and small farms: professional services output multiplier was 2.00. Small and large farms reflect high economic interdependence with the rest of the economy with respect to

Table 13. Output, income and employment multipliers for endogenous industries, Jerome-Wendell study area, 1974.

Industry	Output multiplier	Income multiplier	Employment multiplier
Large farms	1.8729	1.3423	1.6157
Small farms	1.8694	1.4464	1.1546
Agricultural services	1.3234	1.1821	1.2077
Construction trades	1.6457	1.6131	1.2185
Farm product raw materials	1.8337	3.9758	3.0553
Printing and publishing	1.2701	1.1554	1.0631
Miscellaneous manufacturing	1.3175	1.1083	1.0457
Utilities	1.1342	1.3208	1.1525
Farm equipment dealers	1.2349	1.1793	1.1691
Agricultural chemicals	1.1461	1.1910	1.2364
Hardware	1.2964	1.1500	1.1144
Clothing stores	1.1542	1.1398	1.1147
Food stores	1.1775	1.1534	1.1291
Petroleum products	1.2909	1.2465	1.3210
Automotive and transportation	1.4852	1.2655	1.2377
Furniture	1.3659	1.1580	1.1486
Restaurants	1.6370	1.1735	1.1261
Miscellaneous retail	1.6988	1.1403	1.1455
F.I.R.E.	1.3874	1.1467	1.1963
Professional services	2.0050	1.1267	1.1418
Other services	1.8495	1.1775	1.1241
Households	1.6610	undefined*	undefined*

\*The direct income and employment coefficients for households are effectively zero although mathematically undefined.

output because their direct requirements coefficients from other industries are high. Furthermore, industries from which farms have high direct requirements also have high direct requirements with the local economy, e.g. farm product raw materials, automotive and transportation goods and services and households. Transactions made by farmers are such that dollars spent have a higher propensity to remain in the local economy and generate local economic activity.

### *Income Multipliers*

Income multipliers measure the total income generated throughout the economy from a \$1 increase in direct income to an industry. Income generation by an industry depends upon (1) the labor intensity of the production process, (2) the propensity for consumers to spend locally and with industries that exhibit large returns to local households and industries and (3) its degree of interaction with other labor intensive, highly interdependent industries.

The income multiplier for small farms in the region (1.45) exceeded that for large farms (1.34) (Table 13). Both of these, however, were exceeded by the income multipliers for farm product raw materials (3.98) and construction trades (1.61). Thus the farm production and processing industries, along with construction trades, would generate more total regional income for each additional dollar of direct income than other local industries.

### *Employment Multipliers*

Employment multipliers estimate the total employment generated in the economy with a one unit increase in employment in an industry. Industries having high income or output multipliers will not necessarily have high employment multipliers. The employment multiplier for small farms (1.15) was smaller than that for large farms (1.62) (Table 13). Employment in the total Jerome-Wendell economy will increase more for a given employment increase on large farms than small farms. Farm product raw materials had the highest income multiplier (3.06) and large farms were next, but small farms ranked 10th among the 22 endogenous industries.

The multiplier analysis can be summarized as follows: (1) small farms and large farms had the same output multipliers, (2) income multipliers were higher for small farms than large farms and (3) large farms had higher employment multipliers than small farms. Professional services had the highest output multiplier while farm product raw materials had the largest employment and income multipliers.

## Consistent Forecasting

Consistent forecasting complements multiplier analysis in analyzing economic impacts. Multipliers indicate the total impact of a change in income, output or employment in one industry; consistent forecasting measures the cumulative effects of changes across all industries.

This study developed 5 sets of consistent forecasts, each including different assumptions about the future activity levels of agriculture and other industries in the economy.

The resulting forecasts fulfill the second objective of the study: to estimate the income, output and employment effects of farm size alternatives on the rural community. The 5 alternative sets are:

**1. Minimal Economic Growth Set** — This set was designed to determine the impacts of changes in the final demand for the output of small farms, with all other industries (including large farms) maintained at 1974 demand levels. The first run reflected an increase in final demand for small farm output of 5% per year for 5 years, and the second reflected a decrease of 5% per year for 5 years.

**2. Moderate Economic Growth Set** — This set assumed that the economy would experience a 3% annual growth in final demand for 5 years. Final demand was varied for the output of small farms only. One run assumed small farms would also experience a 3% annual growth in final demand. A second run assumed that final demand for small farms would remain constant. The third run assumed that small farms' final demand would decline 3% per year for 5 years.

**3. High Economic Growth Set** — This set assumed that the economy would grow at the rate of 5% per year for 5 years. The three runs varied small farm final demand: 5% annual growth, constant demand and 5% annual decrease.

**4. Total Displacement Set** — The four runs made in the total displacement set were all designed to reflect the impact of total final demand for agricultural products being met by large farms at the end of 5 years. Small farm sales to exports would fall to zero, although production would continue to satisfy intermediate demand of large farms for inputs. The first run assumed that final demand for farm products would grow at 3% per year for 5 years. Concurrently, final demand for all nonfarm industries would remain constant at 1974 levels. The second run assumed that all nonfarm industries as well as agriculture would grow at 3% each year. The third run was the same as the first run except that final demand for farm output was assumed to grow at 5% instead of 3% per year. The fourth run assumed that final demand for both farm and nonfarm output would grow at 5% per year.

**5. Structural Reverse Set** — This set was run to discover the impacts should historical trends be reversed, that is, should small farms capture a greater share of the market, increase in numbers and displace some of the large farms. The four runs were the same as in the total displacement set, but the final demand for farm output assumed that large farms would experience a decline of 50% from the 1974 level at the end of 5 years, and that small farms would maintain their 1974 share of the market as well as adding those portions vacated by large farms and created through market growth. One run assumed that overall final demand for farm output would increase by 3% each year and that all other industries would maintain 1974 final demand levels. The second run assumed that all industries including agriculture would experience 3% annual growth. The third and fourth runs used the same assumptions with 5% growth rates instead of 3%.

The output, income and employment resulting from each of the alternative sets and runs are recorded in Table 14 and discussed in the following section.

## Output Impacts

Only under one set of projected conditions did total output of the endogenous industries in the Jerome-Wendell area decline. In the second run of the minimal growth set, when small farms contracted 5% per year for 5 years, total output declined from the 1974 level of \$195.1 million to a projected level of \$192.7 million. Otherwise, total output increased to a high of \$248.3 million achieved in the fourth run of the structural reverse set.

## Income Impacts

The only instance where total income declined from the 1974 level was also in the second run of the minimal growth set, falling from \$37.0 million to \$36.7 million. The highest level of total income was \$47.4 million generated in the third run of the total displacement set.

## Employment Impacts

In three projected situations employment declined below the 1974 level of 4,022 man-years: one case was again the second run of the minimal growth set (3,807 man-years); the other two were in the total displacement set. With small farms displaced by large farms and nonfarm industry demand constant, total employment in the area was 3,906 man-years when agricultural demand increased 3% annually (Run 1) and 4,006 man-years when it increased 5% annually (Run 3). Only when all industries, including agriculture, grew 3 or 5% per year were the negative employment effects of total small farm displacement offset.

The highest employment level, 6,193 man-years, was projected in the fourth run of the structural reverse set. At all projected growth levels in the structural reverse set, which assumes that small farms displace 50% of the final demand of large farms, employment exceeds that of other alternatives. This includes the first run of the high economic growth set where all farms and industries were projected to grow 5% annually.

## Summary: Economic Interdependence

The outcome of the minimal economic growth set confirms that regional output, income and employment would fall below 1974 levels only under conditions of no growth in the large farm and nonfarm industries combined with relatively rapid decline in the number of small farms. The results of the moderate and high economic growth sets indicate that if all industries in the economy grow, regional income, output

Table 14. Output, income and employment impacts under five sets of economic growth projections, Jerome-Wendell study area.

	Output (thousands of dollars)	Income	Employment (man- years)
Base year levels (1974)	195,066.0	37,041.7	4,022
<b>1. Minimal growth set</b>			
Run 1: Small farms expand	197,363.2	37,379.2	4,197
Run 2: Small farm decline	192,662.4	36,679.1	3,807
<b>2. Moderate growth set</b>			
Run 1: Small farms expand	226,173.6	42,941.0	4,662
Run 2: Small farms constant	224,872.9	42,747.2	4,460
Run 3: Small farms decline	223,767.5	42,582.6	4,549
<b>3. High growth set</b>			
Run 1: Small farms expand	248,178.5	47,114.4	5,104
Run 2: Small farms constant	245,922.0	46,778.3	4,998
Run 3: Small farms decline	244,153.9	46,515.0	4,915
<b>4. Total displacement set</b>			
Run 1: Agriculture grows 3%	203,614.9	38,844.5	3,906
Run 2: All industries grow 3%	226,145.0	43,239.2	4,378
Run 3: Agriculture grows 5%	209,881.9	39,978.6	4,006
Run 4: All industries grow 5%	248,147.3	47,442.7	4,782
<b>5. Structural reverse set</b>			
Run 1: Agriculture grows 3%	203,729.5	37,599.8	5,123
Run 2: All industries grow 3%	226,260.1	41,994.4	5,587
Run 3: Agriculture grows 5%	209,935.0	38,535.8	5,417
Run 4: All industries grow 5%	248,280.5	45,999.9	6,193

and employment would exceed base year levels regardless of final demand for the output of small farms.

The total displacement set results show that, although increases in area output and income would occur under all levels of growth, employment would be above the 1974 level only if nonfarm industries grow at a moderate or rapid rate.

The results of the structural reverse set lead to the conclusion that, should small farms increase their share of final demand for farm products within even moderately expanding agricultural demand and despite no growth in nonfarm industries, net increases in area output, employment and income would be achieved.

## Conclusions and Implications

The economic impacts of farm size alternatives on the rural community of Jerome-Wendell were assessed by (1) deriving empirical measures of the relative economic importance of small and large farms and (2) estimating the income, output and employment effects of various farm size structures. Input-output analysis was used to determine the economic structure of the community. Then multiplier analysis and consistent forecasting were applied to establish the effects of changes in farm size structure.

### Structural Analysis

In terms of dollar transactions, employment opportunities and economic output, small farms represented a relatively small sector of the Jerome-Wendell economy. The small farm sector provided 12% of total employment, 4% of household income and 15% of agricultural output. Small farms purchased 1% of the output of other farms, 3% of the output of nonfarm agricultural industries and 2% of the output of nonagricultural industries. Small farmers had a higher propensity to purchase factors of production locally than large farmers, although their 1974 local production expenditures of \$4 million were only 20% that of large farmers.

Total output of large farms, \$37.1 million, exceeded small farm output by over \$30 million in 1974. Large farms provided 15% of the employment and 25% of the household income of the area. Large farmers purchased 10% of the output of nonfarm agricultural industries and 4% of the output of nonagricultural industries.

Because of their higher propensity to spend consumer dollars with local merchants, small farm households provided a consumer market in the Jerome-Wendell economy equal to that of large farm households. Each group spent \$1.3 million annually with local firms on consumer goods.

While 22% of the small farmers surveyed expected to cease production within 5 years, none of the large farmers expected to cease production and 25% planned to expand operations in some way. These results suggest that past changes in the structure of the farm sector will continue in the short-term future.

Analysis of the economic structure revealed the diversification of the Jerome-Wendell economy. Nonagricultural firms provided 55% of the employment and

38% of household income. The farm sector provided 27% of the employment and 29% of direct household income.

Most business people interviewed described the health of the local economy in positive terms and favored continued economic growth. Sentiment existed, however, for preserving the "small town atmosphere" and social amenities of the area: 25% of the business respondents wanted the economy and population to remain at current levels and 30% preferred a farm-size structure characterized by smaller family farms.

### Multiplier Analysis

The professional services industry had the highest output multiplier (2.00) followed by large farms and small farms (both 1.87) and farm product raw materials (1.83). Farm product raw materials had the highest income and employment multipliers, 3.98 and 3.06 respectively. The small farm income multiplier (1.45) was second among the endogenous industries and large farms (1.34) was third. The large farm employment multiplier (1.62) ranked second in the economy; the small farm employment multiplier (1.15) ranked tenth. Thus, with the exception of the employment multiplier for small farms, the two farm sectors held the second and third rankings among the 22 Jerome-Wendell area industries in all three types of multipliers.

The impact on the local economy of continued displacement of small farms by large farms can be stated empirically using the multipliers derived in this study. With other factors unchanged, each \$1 decrease in small farm output will result in a \$1.87 decrease in total output in the Jerome-Wendell economy; each \$1 decrease in the direct income derived from small farms will cause a \$1.45 decline in total regional income; and each man-year decrease in employment on small farms will reduce total regional employment by 1.15 man-years.

### Consistent Forecasting

Only under the assumption that small farms declined while all other industries maintained 1974 levels of final demand would regional output, income and employment drop below base-year levels over a 5-year projection period. When large farms were assumed to capture the entire agricultural final demand market, regional output and income exceeded 1974 levels, but total employment increased only with a moderate or high growth rate in

nonfarm industries. Assuming that large farms declined as an industry while small farms expanded to offset the large farm decline and to meet the demands of a growing market, study area income, output and employment would increase over 1974 levels.

It is unlikely that the nonfarm sectors of the Jerome-Wendell economy would continue to operate at 1974 levels of output for 5 years. Therefore, succeeding forecasts assumed moderate (3%) or high (5%) growth rates in other economic sectors. These growth rates are consistent with the expectations of local businessmen for the future of the Jerome-Wendell economy. The 5-year projections then indicated that regional income, output and employment would be higher than base-year levels despite negative multiplier effects of small farm displacement. The impacts of continued small farm decline for Jerome and Wendell are reductions in employment, income and output, but the net effects depend on the rates of growth in other sectors of the economy.

## Policy Considerations

This study demonstrates the impact of farm-size structure on three economic indicators: income, output and employment. The economic trade-off brought into focus is essentially between income and employment. Replacing small farms with large farms results in greater regional income while increasing the number of small farms yields greater regional employment. Agricultural output is comparable for the two farm-size structures.

In the broader context of rural development, the economic dependence of small rural towns on an agricultural sector including small farms is related to trading patterns, proximity to regional growth centers, opportunities for nonagricultural development, demographic patterns and other factors. Although each community is unique, many similarities exist. The analysis presented in this report provides a framework for understanding economic interdependencies in rural communities and indicates areas where public policies and private economic endeavors (e.g. technological development and innovation) affect rural communities most severely.

A wide range of policy alternatives is suggested by these results. At one extreme, the process of economic change which results in fewer and larger farms, rural-to-urban outmigration and declining rural towns can be accepted as socially desirable. The benefits to society are assumed to exceed the costs of change to the individuals affected. Public policy would then center on alleviating the economic and human costs incurred by small farmers and dependent rural communities.

At the other extreme, the continued existence of viable small farms and rural communities can be accepted as worthy. Policies would be followed to assure the continued survival of small farms and small towns, regardless of economic efficiencies foregone by society.

The relative merits of these extreme positions and various alternatives between them cannot be assessed by economic analysis alone. Each has a set of costs and benefits (economic and non-economic) for individual farmers, rural communities and society as a whole.

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## Appendix

Appendix Table 1. Inter-industry transactions, Jerome-Woodruff study area, 1974.

(Thousands of Dollars)

Industries producing	Industries purchasing		Agricultural services	Construction trades	Farm product raw materials	Printing and publishing	Miscellaneous manufacturing	Utilities	Farm equipment dealers	Agricultural chemicals	Hardware	Clothing stores	Food stores	Petroleum products	Automotive and transportation	Furniture	Restaurants	Miscellaneous retail	F.I.R.E.	Professional services	Other services	Households	State and local government	Federal government	Net inventory change	Exports	Total output		
	Large farms	Small farms																											
Large farms	3,043.3	158.0			9,664.5								8.9												8,220.1	16,031.8	37,126.6		
Small farms	809.0	42.0			1,536.6								0.1													2,776.5	1,571.2	6,735.4	
Agricultural services	1,616.0	560.6	11.3																						1.0	-196.7	522.2	2,614.4	
Construction trades	131.5	51.8	12.0	325.4	107.4	14.3	26.0	251.4	34.5	30.0	11.2		1.7	3.5	60.6	3.2	2.6	0.7	67.1	23.4	10.8	2,209.0		57.5	5.0	7,540.1	1,405.5	12,186.2	
Farm product raw materials	694.5	132.5	1.0		538.0		7.5						50.5	19.5			145.0			8.2	6.3				0.6	-7,663.1	35,948.4	29,888.9	
Printing and publishing			7.0	26.3	9.3	0.5	5.3	3.0	7.1		6.0	20.0	31.4	15.2	21.2	4.7	3.7	18.1	36.8	19.9	8.8				4.8	-1,153.8	4,671.1	3,766.4	
Miscellaneous manufacturing																											-4,854.5	18,014.6	13,160.1
Utilities	483.8	224.2	13.3	115.6	81.7	156.6	321.5	19.1	35.2	4.4	11.0	10.8	44.8	31.8	65.7	27.6	45.8	25.9	99.7	61.7	53.9	1,718.7		133.7	7.7	-1,609.9	7,042.5	9,224.8	
Farm equipment dealers	722.3	144.9	26.7				4.6		30.0																0.1	584.8	4,071.4	5,584.7	
Agricultural chemicals	999.9	193.9			33.0																						-334.2	1,032.9	1,925.5
Hardware	235.7	245.3	5.4	3.4	6.0	0.3	3.5	1.6	20.5		0.7			5.2	5.6	0.4		0.7	1.2	1.4	6.9	444.2		4.7	548.9	305.9	1,847.5		
Clothing stores			0.7	6.2											0.5		0.5			0.5	0.1	1,129.3		0.5	483.3	212.5	1,833.7		
Food stores																					3.0	5,759.1			0.6	-776.2	640.3	5,626.8	
Petroleum products	692.2	263.5	50.0	124.5	10.3	37.6	16.8	2.5	35.7	11.1	10.0		23.6	3.3	71.5	13.5	7.9	4.3	21.4		26.7	1,725.1		13.7	-1,526.8	3,571.4	5,211.9		
Automotive and transportation	217.7	121.8	34.6	159.7	8.2	1.8	0.5		50.0	1.7	7.3	0.5	1.5	275.4	279.1	8.1		1.2	8.3	2.5	7.9	800.3		188.3	3.2	-499.5	2,433.4	4,113.5	
Furniture			1.1	8.3	16.2	10.0		2.2			0.5		2.2	2.4	2.1	5.9		7.7	15.1	15.0	0.2	819.9		1.8	0.1	250.7	623.3	1,684.7	
Restaurants						3.5	1.0	0.1	0.1							0.3		20.4	13.6	3.0		209.8				345.7	2,319.0	2,916.5	
Miscellaneous retail			0.2		12.0	0.6															3.0	347.5			8.1	968.3	228.3	1,568.0	
F.I.R.E.	1,305.5	534.8	9.9	372.4	195.2	7.4		33.0	34.8		20.1	14.2	10.8	58.1	93.9	45.2	118.4	65.3	82.0	158.8	72.9	1,877.9		25.7	5.2	1,366.5	6,508.0		
Professional services	35.2	5.4	5.3	22.1	25.6	5.1	9.4	4.7	9.9		5.4	0.5	2.6	4.9	3.2	2.0	15.0	0.4	7.3	15.7	7.9	591.1		17.0		2,533.1	3,328.0		
Other services						0.3	0.7						1.4	2.7			1.6		1.4		8.0	525.0		0.8	562.6	168.2	1,272.7		
Households	9,374.2	1,302.6	342.7	3,723.9	1,356.1	434.8	2,225.9	442.0	575.3	126.3	267.9	134.8	443.6	543.0	686.1	282.2	796.8	542.9	1,225.7	1,753.4	471.7				2,389.9	331.0	7,270.9	37,041.7	
State and local government	1,142.5	156.4	52.6	91.8	639.4	138.3	59.5	963.6	80.7	37.2	20.9	24.6	56.2	78.3	87.4	24.5	109.0	21.8	428.9	65.6	22.7	4,015.4			1,483.0	222.8		10,023.1	
Federal government	4,415.7	604.8	275.6	153.2	480.5	147.8	422.1	1,344.7		17.6	71.2	12.8	13.4	183.6	36.5	9.7	167.1	29.0	816.9	158.1	119.5	4,757.0			25.7			14,262.5	
Depreciation allowance	3,772.3	536.8	134.3	78.4	357.8	147.7	459.5	345.6	47.8	26.4	16.2	17.8	42.9	78.8	59.6	13.7	75.1	16.1	379.1	68.4	92.7							6,767.0	
Imports	7,435.3	1,456.1	1,530.7	6,975.0	14,811.7	2,659.9	9,596.3	5,811.3	4,625.1	1,670.1	1,399.1	1,598.2	4,891.2	3,906.2	2,640.7	1,243.7	1,428.0	815.5	3,303.5	972.4	349.7	10,111.8			2,609.7	93.3		92,935.2	
Total outlays	37,126.6	6,735.4	2,514.4	12,186.2	29,888.9	3,766.9	13,160.1	9,224.8	5,584.7	1,925.5	1,847.5	1,833.7	5,626.8	9,211.9	4,113.5	1,684.7	2,916.5	1,568.0	6,508.0	3,328.0	1,272.7	37,041.7			6,967.0	669.8	3,466.3	111,884.4	318,054.0
Employment requirements	686	512	43	370	227	158	775	109	85	13	49	28	79	62	109	42	149	77	135	218	96				372	30		4,424	

Appendix Table II. 1974 price and yield estimates, Jerome and Gooding counties, Idaho.

<u>Commodity</u>	<u>Yield/A</u>	<u>Price</u>
1. Sugarbeets	19 T	\$35.00/T
2. Alfalfa hay	5 T	\$45.00/T
3. Wheat	75 bu.	\$ 4.40/bu. (Portland)
4. Potatoes	325 cwt.	\$ 4.25/cwt.
5. Beans	20 cwt.	\$30.00/cwt.
6. Silage	22 T	\$12.00/T
7. Corn	100 bu.	\$ 3.50/bu.
8. Mixed grain	75 bu.	\$ 2.80/bu.
9. Barley	80 bu.	\$ 2.75/bu.
	<u>Weight/Hd</u>	<u>Price</u>
Dairy Cows (producing	-	\$475/hd
Slaughter Cows*	1000 lb.	\$26.00/cwt.
Slaughter Steers & Heifers*	950 lb.	\$42.00/cwt.
Feeder Steers & Heifers*	600 lb.	\$36.00/cwt.
Calves*	400 lb.	\$35.00/cwt.
Hogs (barrows & gilts)	200 lb.	\$35.00/cwt.
Milk	10,500 lb.	\$ 7.50/cwt.

\* "Cattle" average 500 lb. \$38.00 cwt.

Appendix Table III. Direct requirements coefficients, Jerome-Wendell study area, 1974.

Industries producing \ Industries purchasing	Large farms	Small farms	Agricultural services	Construction trades	Farm product raw materials	Printing and publishing	Miscellaneous manufacturing	Utilities	Farm equipment dealers	Agricultural chemicals	Hardware	Clothing stores	Food stores	Petroleum products	Automotive and transportation	Furniture	Restaurants	Miscellaneous retail	F. I. R. E.	Professional services	Other services	Households	
Large farms	.0020	.0235			.3233								.0016										
Small farms	.0218	.0062			.0513																		
Agricultural services	.0435	.0832	.0045																				
Construction trades	.0035	.0077	.0048	.0267	.0036	.0038	.0020	.0273	.0062	.0156	.0061		.0003	.0007	.0147	.0019	.0009	.0004	.0103	.0070	.0085	.0596	
Farm product raw materials	.0187	.0197	.0004		.0180		.0006						.0090	.0037			.0497			.0025	.0049		
Printing and publishing			.0028	.0022	.0003	.0001	.0004	.0003	.0013		.0032	.0109	.0056	.0029	.0052	.0028	.0013	.0115	.0057	.0060	.0069		
Miscellaneous manufacturing																							
Utilities	.0130	.0333	.0053	.0095	.0027	.0416	.0244	.0021	.0063	.0023	.0060	.0059	.0080	.0061	.0160	.0164	.0157	.0152	.0153	.0185	.0423	.0464	
Farm equipment dealers	.0195	.0215	.0106				.0003		.0054														
Agricultural chemicals	.0269	.0288			.0011																		
Hardware	.0064	.0364	.0021	.0003	.0002	.0001	.0003	.0002	.0037		.0004			.0010	.0014	.0002		.0004	.0002	.0004	.0054	.0120	
Clothing stores			.0003	.0005													.0002			.0002	.0001	.0305	
Food Stores																						.0024	.1555
Petroleum products	.0186	.0391	.0199	.0102	.0003	.0100	.0013	.0003	.0064	.0058	.0054		.0042	.0006	.0174	.0080	.0027	.0027	.0033		.0210	.0466	
Automotive and transportation	.0059	.0181	.0138	.0131	.0003	.0005			.0090	.0009	.0040	.0003	.0003	.0528	.0679	.0048		.0008	.0013	.0008	.0062	.0216	
Furniture			.0004	.0007	.0005	.0027		.0002			.0003		.0004	.0005	.0005	.0035		.0049	.0023	.0045	.0002	.0221	
Restaurants						.0009	.0001									.0002		.0130	.0021	.0009		.0057	
Miscellaneous retail			.0001		.0004	.0002																.0240	.0094
F. I. R. E.	.0352	.0794	.0039	.0306	.0065	.0020		.0036	.0062		.0109	.0077	.0019	.0111	.0228	.0268	.0406	.0416	.0126	.0477	.0573	.0507	
Professional services	.0010	.0008	.0021	.0018	.0008	.0013	.0007	.0005	.0018		.0029	.0002	.0005	.0009	.0008	.0012	.0051	.0002	.0011	.0047	.0062	.0160	
Other services						.0001							.0002	.0005			.0005		.0002		.0063	.0142	
Households	.2525	.1934	.1364	.3056	.0454	.1154	.1691	.0479	.1027	.0656	.1450	.0735	.0788	.1042	.1668	.1675	.2732	.3462	.1883	.5269	.3706		
Imports	.2003	.2162	.6088	.5724	.4956	.7062	.7292	.6300	.8282	.8677	.7573	.8716	.8693	.7495	.6420	.7382	.4896	.5201	.5076	.2922	.2748	.2730	

Appendix Table IV. Direct and indirect requirements coefficients, Jerome-Wendell study area, 1974.

Industries producing	Industries purchasing																					
	Large farms	Small farms	Agricultural services	Construction trades	Farm product raw materials	Printing and publishing	Miscellaneous manufacturing	Utilities	Farm equipment dealers	Agricultural chemicals	Hardware	Clothing stores	Food stores	Petroleum products	Automotive and transportation	Furniture	Restaurants	Miscellaneous retail	F.I.R.E.	Professional services	Other services	Households
Large farms	1.9979	.0355	.0003	.0004	.3633	.0002	.0004	.0001	.0001	.0001	.0002	.0001	.0051	.0015	.0002	.0002	.0184	.0006	.0003	.0015	.0023	.0011
Small farms	.0252	1.0081	.0001	.0001	.0610		.0001						.0006	.0002			.0031	.0001		.0003	.0004	.0001
Agricultural services	.0501	.0857	1.0045		.0210								.0003	.0001			.0011			.0001	.0001	.0001
Construction trades	.0280	.0298	.0159	1.0512	.0182	.0137	.0148	.0322	.0147	.0212	.0174	.0057	.0065	.0103	.0306	.0153	.0228	.0268	.0251	.0465	.0390	.0700
Farm product raw materials	.0222	.0216	.0008	.0008	1.0269	.0004	.0010	.0001	.0003	.0002	.0004	.0002	.0095	.0041	.0005	.0005	.0517	.0015	.0006	.0039	.0061	.0022
Printing and publishing	.0014	.0019	.0034	.0034	.0011	1.0005	.0009	.0006	.0018	.0003	.0037	.0112	.0059	.0036	.0064	.0035	.0024	.0128	.0064	.0078	.0086	.0026
Miscellaneous manufacturing							1.0000															
Utilities	.0344	.0517	.0145	.0292	.0198	.0489	.0343	1.0058	.0131	.0065	.0152	.0109	.0132	.0142	.0291	.0273	.0338	.0372	.0273	.0507	.0672	.0566
Farm equipment dealers	.0226	.0234	.0107		.0087		.0003		1.0054					.0001			.0004				.0001	
Agricultural chemicals	.0303	.0300			.0127					1.0000			.0002	.0001			.0006			.0001	.0001	
Hardware	.0123	.0407	.0042	.0047	.0071	.0018	.0026	.0010	.0052	.0010	1.0025	.0010	.0012	.0027	.0041	.0026	.0042	.0053	.0029	.0077	.0109	.0133
Clothing stores	.0104	.0086	.0052	.0114	.0055	.0041	.0057	.0020	.0037	.0024	.0051	1.0026	.0028	.0040	.0066	.0059	.0100	.0121	.0066	.0183	.0134	.0333
Food stores	.0527	.0435	.0251	.0553	.0283	.0207	.0292	.0038	.0188	.0122	.0259	.0130	1.0141	.0202	.0328	.0502	.0499	.0614	.0336	.0923	.0703	.1695
Petroleum products	.0399	.0569	.0284	.0284	.0192	.0167	.0106	.0037	.0127	.0098	.0138	.0043	.0089	1.0081	.0294	.0179	.0192	.0225	.0142	.0297	.0433	.0537
Automotive and transportation	.0192	.0319	.0206	.0248	.0099	.0048	.0052	.0022	.0135	.0037	.0093	.0026	.0031	.0604	1.0800	.0110	.0093	.0119	.0077	.0173	.0201	.0298
Furniture	.0078	.0066	.0041	.0089	.0047	.0058	.0043	.0017	.0029	.0018	.0041	.0019	.0025	.0035	.0054	1.0080	.0074	.0140	.0073	.0181	.0103	.0246
Restaurants	.0021	.0019	.0010	.0022	.0011	.0017	.0012	.0004	.0007	.0005	.0010	.0005	.0006	.0008	.0013	.0014	1.0020	.0155	.0034	.0046	.0028	.0065
Miscellaneous retail	.0032	.0027	.0016	.0034	.0021	.0015	.0018	.0006	.0011	.0007	.0016	.0008	.0009	.0012	.0020	.0018	.0031	1.0037	.0020	.0056	.0065	.0103
F.I.R.E.	.0623	.1012	.0144	.0533	.0359	.0105	.0119	.0083	.0141	.0052	.0213	.0128	.0077	.0205	.0380	.3900	.0615	.0661	1.0261	.0838	.0854	.0636
Professional services	.0070	.0060	.0049	.0078	.0044	.0036	.0038	.0016	.0039	.0013	.0057	.0016	.0021	.0032	.0045	.0045	.0106	.0069	.0048	1.0147	.0137	.0181
Other services	.0049	.0041	.0023	.0051	.0026	.0020	.0027	.0009	.0017	.0011	.0024	.0012	.0015	.0024	.0031	.0028	.0051	.0057	.0033	.0085	1.0126	.0157
Households	.3389	.2797	.1612	.3555	.1805	.1333	.1874	.0633	.1211	.0781	.1668	.0838	.0909	.1299	.2111	.1940	.3206	.3943	.2159	.5937	.4364	1.0899
Output multipliers	1.8729	1.8694	1.3234	1.6457	1.8337	1.2701	1.3175	1.1342	1.2349	1.1461	1.2965	1.1542	1.1775	1.2909	1.4852	1.3659	1.6370	1.6988	1.3874	2.0050	1.8495	1.6610

Appendix Table A. Rural sector questionnaire.

Farming Operation:

1. a. Total acres farmed \_\_\_\_\_
- b. Total acres irrigated \_\_\_\_\_
- c. Total acres owned \_\_\_\_\_
- d. Total acres rented \_\_\_\_\_
2. Indicate the production and sales from last year's farm operations (include inter-farm and direct consumer sales).

a. Cash Crops

(May be actual or usual)

<u>Crop</u>	<u>Acreage</u>	<u>Yield</u>	<u>Price</u>	<u>Purchaser and Location</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Livestock and Livestock Products (meat animals, milk, poultry, eggs)

<u>Product</u>	<u>Volume</u> (No., lbs., doz., etc.)	<u>Price</u>	<u>Purchaser &amp; Location</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

3. a. Do you plan to make any changes in your operation?

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b. What would you say are the major obstacles to changes you would like to make?

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4. Do you allow public access to your land for recreational purposes, and if yes, under what conditions?

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5. Summarize the labor required in your farming operation. (Indicate in hours per month or full-time equivalents; do not include custom work).

a. Yourself \_\_\_\_\_ b. Your Wife \_\_\_\_\_

c. Other family members \_\_\_\_\_

d. Hired labor \_\_\_\_\_ e. Rate \_\_\_\_\_

f. Source of hired labor (local farmers, city dwellers, etc.) \_\_\_\_\_

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Farm Expenditures

For the goods and services listed below, please indicate the average dollar amount or percentage which you spend per year in your farm business, not for your personal or household use. In addition, please indicate the approximate % of your purchases at the indicated locations.

Total Annual Farm Production Expenses \$ \_\_\_\_\_.

Expenses by Types	Amount (\$ or %)	Source of Purchase	
		Wendell-Jerome	Other
Feed & Seed (Commercial sources)			
Ag. Chemicals & Fertilizers			
Ag. Services (Milling, Marketing charges, Storage, Vets)			
Irrigation Equip. & Service			
Ag. Equip. Sales & Service			
Construction & Building Supplies & Service			
Utilities (Electricity, Gas, Phone)			
Automotive Sales, Service, Parts			
Gas, Oil & Other Petroleum			
Hardware			
Payment on Principal for Land			
Insurance, Interest, Banking & Finance Charges, Real Estate Commissions, etc.			
Legal & Tax Services			
Direct Purchases from other Farms			
Feed & Seed			
Livestock			
Custom Work			



Family Living Expenses

For the goods and services listed below, please indicate the average dollar amount or percentage which you spend per month or year for your personal or household use. In addition, please indicate the approximate % of your purchases at the indicated locations.

Total Annual \$ \_\_\_\_\_ or Monthly \$ \_\_\_\_\_ Family Living Expenses.

Expenses by Types	Amount	Source of Purchase	
	(\$ or %)	Wendell-Jerome	Other
Food Products			
Utilities			
Clothing			
Furniture & Home Furnishings			
Const. & Bldg. & Mobile Homes			
Public Transportation			
Auto Sales, Services & Parts			
Gas & Oil			
Jewelry & Gifts			
Eating, Drinking & Recreation			
Principal Payment on Home			
Insurance, Real Estate Commissions, Interest, Banking & Finance Charges			
Professional Services			
Misc. Services (Barber, Dry Cleaners, Photo Shops, etc.)			

Appendix Exhibit B. Business sector questionnaire.

1. For the goods and/or services you sell indicate your 1974 sales volume (\$ or %).

Type of Good or Service	Location of Customers		
	Wendell-Jerome Town Residents	Study Area Rural Residents	Outside the Study Area

2. If 1974 was not a typical year for your business operation (purchase or sale volume, source, market) how did it differ from past experience?

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3. Summarize the labor used in your business operation. (Indicate the full or fractional person years in each category.)

- a. Yourself \_\_\_\_\_ b. Your wife \_\_\_\_\_
- c. Other family members \_\_\_\_\_
- d. Hired labor: full time \_\_\_\_\_ part time \_\_\_\_\_
- e. What was your total labor cost in 1974? (Indicate

the value of your own and your family's labor, whether or not actually paid.)

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4. Of your hired labor force, how many	#	#
	Male	Female
a. Live on full time farms in the study area		
b. Live on part time farms in the study area		
c. Live in Jerome or Wendell		
d. Live outside the local community (Study Area)		
e. Are migrant workers		
f. Are not included in any of the above		

5. How does the number of persons employed in your business compare with:
- a. 5 years ago \_\_\_\_\_
  - b. What you expect in the future \_\_\_\_\_

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6. Do you have a labor turnover problem? If so, to what factors might it be attributed?

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Business Expenditures

For the goods and services listed below, please indicate the average dollar amount or percentage which you spend per year in your business including goods resold, but not for your personal or household use. In addition, please indicate the approximate % of your purchases at the indicated locations.

Total 1974 Business Expenses \$ \_\_\_\_\_.

Expenses by Types	Amount (\$ or %)	Source of Purchase		
		Wendell- Jerome Study Area	Twin Falls	Other
Ag. & Food Handling & Processing				
Feed & Seed				
Livestock				
Dairy				
Food Crops				
Ag. Chemicals & Fertilizers				
Ag. Services (Milling, Marketing charges, Storage, Vets)				
Irrigation Equip. & Service				
Ag. Equip. Sales & Service				
Const. & Bldg. Supplies and Service				
Utilities (Electricity, gas, phone, cable TV)				
Automotive Sales, Service, Parts				
Wholesale Gas, Oil & Other Petroleum				
Retail Gas, Oil & Other Petroleum				
Hardware, Plumbing				
Printing & Publishing, including Advertising, Mailing				
General Manufacturing				
Wholesale Food Products				
Retail Food Products				
Clothing & Department Stores				
Furniture, Home Furnishings, Appliances				
Public Transportation				
Misc. Retail (drugs, jewelry, general merchandise)				
Eating & Drinking Places				

Business Expenditures (Cont.)

Expense by Type	Amount (\$ or %)	Source of Purchase		
		Wendell- Jerome Study Area	Twin Falls	Other
Professional Services (Medical, Dental, Legal)				
Misc. Consumer Services (Barber, Dry Cleaners, Photo Shops, Laundries, etc.)				
Insurance premiums & Real Estate fees				
Banking & Credit Charges, Interest, Div.				
Real Estate Rent & Princi- pal Payments				
Other (specify)				

Appendix Exhibit C. Public sector questionnaire.

For the questions below, please answer for offices located in Wendell or Jerome (city) only. All figures should be for calendar 1974 or fiscal 1973-74, and should represent Wendell or Jerome operations only.

1. Name of Agency or office \_\_\_\_\_

2. Employment

a. How many persons were employed by your Agency in 1974?

full time \_\_\_\_\_

part time \_\_\_\_\_

b. Please specify the hours per week worked by each part-time employee (average or actual).  
\_\_\_\_\_

c. Of your employees, how many:

1. Live on small farms in our "target study area"?\* \_\_\_\_\_

2. Live on large farms in the "target study area"?\* \_\_\_\_\_

3. Live in non-farm households in the "target study area"?\* \_\_\_\_\_

4. Live in Wendell or Jerome? \_\_\_\_\_

5. Live elsewhere? \_\_\_\_\_

d. What was your total expenditure for wages and salaries in 1974?  
\_\_\_\_\_

\* Map was included to define "target study area".

3. Operating Expenses

a. What was your 1974 operating budget? \_\_\_\_\_

Please indicate for each item listed below, the dollar expenditure made by your local office in 1974. In addition please indicate the % of each expenditure made in each indicated location.

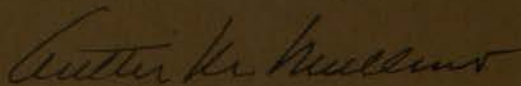
EXAMPLE:

Expense Category	Amount (\$)	Source of Purchase		
		Wendell-Jerome	Twin Falls	Other
AUTOMOTIVE	\$1500/yr.	75%	10%	15%

This example says, \$1500 were spent on automotive items during 1974; 75 percent of the \$1500 was spent in either Wendell or Jerome; 10 percent was spent in Twin Falls; and 15 percent of the \$1500 was spent outside of the area.

Expense Category	Amount (\$)	Source of Purchase		
		Wendell-Jerome (%)	Twin Falls (%)	Other (%)
CONSTRUCTION (services/supplies for maintenance, expansion, renovation or initial construction of your office)				
UTILITIES (electric, gas, phone)				
AUTOMOTIVE (purchases of vehicles, purchases of parts, maintenance, tires, etc.)				
WHOLESALE PETROLEUM PRODUCTS				
RETAIL PETROLEUM PRODUCTS				
HARDWARE, PLUMBING (purchases of tools, plumbing services)				
PRINTING				
MAILING				
ADVERTISING				
OFFICE FURNITURE & EQUIP.				
FREIGHT CHARGES (commercial carriers)				
PUBLIC TRANSPORTATION				
REAL ESTATE RENT or PAYMENT ON PRINCIPAL				
OFFICE SUPPLIES				
OTHER (Specify)				

*The State is truly our campus. We desire to work for all citizens of the State striving to provide the best possible educational and research information and its application through Cooperative Extension in order to provide a high quality food supply, a strong economy for the State and a quality of life desired by all.*



Auttis M. Mullins  
Dean, College of Agriculture  
University of Idaho



## SERVING THE STATE

This is the three-fold charge of the College of Agriculture at your state Land-Grant institution, the University of Idaho. To fulfill this charge, the College extends its faculty and resources to all parts of the state.

**Service** ... The Cooperative Extension Service has active programs in 42 of Idaho's 44 counties. Current organization places major emphasis on county office contact and multi county specialists to better serve all the people. These College of Agriculture faculty members are supported cooperatively by federal, state and county funding to work with agriculture, home economics, youth and community development.

**Research** ... Agricultural Research scientists are located at the campus in Moscow, at Research and Extension Centers near Aberdeen, Caldwell, Parma, Sandpoint, Teton, Twin Falls and at the U.S. Sheep Experiment Station, Dubois and the USDA/ARS Soil and Water Laboratory at Kimberly. Their work includes research on every major agricultural program in Idaho and on economic and community development activities that apply to the state as a whole.

**Teaching** ... Centers of College of Agriculture teaching are the University classrooms and laboratories where agriculture students can earn bachelor of science degrees in any of 20 major fields, or work for master's and Ph.D. degrees in their specialties. And beyond these are the variety of workshops and training sessions developed throughout the state for adults and youth by College of Agriculture faculty.