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Costs and returns of operating feeder pig sales in Tennessee

Joseph Arnold Brasher

To the Graduate Council:

I am submitting herewith a thesis written by Joseph Arnold Brasher entitled "Costs and returns of operating feeder pig sales in Tennessee." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

Raymond Daniel, Major Professor

We have read this thesis and recommend its acceptance:

Bill Hicks, Ben McManus, Bill Trevena

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

February 14, 1973

To the Graduate Council:

I am submitting herewith a thesis written by Joseph Arnold Brasher entitled "Costs and Returns of Operating Feeder Pig Sales in Tennessee." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Economics.

Raymond Doniel
Major Professor

We have read this thesis
and recommend its acceptance:

BR McMeans

Billy J. Trevena

B. G. Wilks

Accepted for the Council:

Hilton A. Smith
Vice Chancellor for
Graduate Studies and Research

COSTS AND RETURNS OF OPERATING FEEDER PIG SALES IN TENNESSEE

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Joseph Arnold Brasher

March 1973

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ABSTRACT

The objectives of this study were to determine all costs associated with the operation of organized feeder pig sales in Tennessee and to determine the influence of volume, ownership of sale facilities, and other factors on these costs.

The 1971 accounting data from 20 of the 21 organized feeder pig sales were used in this study. The 20 sales were placed in three size categories according to the total number of pigs handled in 1971. The sales handling 0-20,000 feeder pigs were classified as small; 20,000-40,000 as medium; and 40,000 or more as large. Within each size category sales were divided on the basis of who owned the sale facility--privately owned, publicly owned, or association owned.

The initial costs of the sale facilities varied from $17,500 to $61,000 with information not available from the owners of the large private facilities. The total initial costs of the feeder pig sale facilities and equipment varied from $25,950 to $75,025.

Building investment per head of capacity ranged from $7.71 to $20.47 per head. Investment in office and barn equipment per head varied from $0.70 to $1.99 per head. The estimated average value of sale facilities per head of capacity ranged from $11.96 to $28.94 per head.

Total fixed costs ranged from $286.35 to $6,556.50 annually.

Labor and advertising were the largest and second largest operating expenses, respectively, of the organized feeder pig sales. Total average variable or operating costs ranged from $4,501.68 to

$40,136.22 annually with increased size of the sale generally indicating increased total variable costs.

The average commission received per head for all sales was $0.64. The average total costs ranged from $0.35 to $0.68 per head. All sales operating with a positive net revenue had total costs of $0.56 per head or less.

All sales operating in public facilities and medium sized sales operating in private facilities were found to be operating unprofitably on the average. Small sales operating in private facilities would have been unprofitable if they were forced to pay for all donated labor. Large sales operating in private facilities showed the greatest return on investment followed by large sales operating in association owned facilities.

Budgets were developed for hypothetical sales of two sizes--3,000 and 5,000 head capacity. The amount of initial investment required, variable and fixed costs, and total and net revenue was projected for these sales. It was projected that the selling of all feeder pigs through the 3,000 head capacity sales would return an additional $190,000 annually to farmers in Tennessee because of the lowering of the average marketing charge by $0.30 per head. Savings possible from the selling of all feeder pigs through the 5,000 head capacity sales were projected to be more than $155,000 annually.

"Lack of volume" was cited as the greatest cause of problems in the attracting of buyers to the sales and in the management and operation of the sales.

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CHAPTER I

THE PROBLEM AND OBJECTIVES OF THE STUDY

I. INTRODUCTION

The marketing of feeder pigs in Tennessee through producer organized auction sales is an important source of income to farmers of the state.[1] In 1971, 35.7% (641,085 head) of the total Tennessee pig crop was sold through 432 organized feeder pig sales at 21 separate locations in the state making Tennessee rank first nationally in the number of pigs sold through producer organized sales. The gross receipts from the sale of these feeder pigs in 1971 exceeded 8.5 million dollars[2] (7).

Feeder pig sales organized by producers generally follow the same operational procedures. First, they all use the auction form of marketing. Secondly, the feeder pig sales are held no more than one day per week and may be held only one or two days per month. Thirdly, most sale operators are in a position to approximate in advance of the sale the number of pigs that will be offered for sale through the pre-sale consignment of pigs by producers. Other operational procedures and their unique effects on feeder pig sale costs will be cited later.

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[1] "Organized" as used in this study refers to the existence of a local cooperative association of feeder pig producers who have joined together (through the Welfare, Cooperative Marketing, or State General Cooperation Acts) for the purpose of operating feeder pig sales for the association members and other eligible pig producers.

[2] These figures do not account for any of the feeder pigs sold through private sales, contracts, dealers, and open auctions.

All produced organized auction sales of feeder pigs in Tennessee must conform to several basic regulations that, in many instances, are unique to this form of marketing (8). The regulations are as follows:

1. Sales must be producer organization sponsored and must be approved by the Tennessee Department of Agriculture and the Animal Health Division of the United States Department of Agriculture (USDA).

2. Pigs must be ear tagged so the producer of the pigs can be ascertained.

3. Pigs must come directly to the sale from the farm of the producer.

4. Consignors must be members of the sponsoring producer organization and are required to obtain a marketing card which certifies they are a feeder pig producer and do not traffic or trade in feeder pigs in any way.

5. Pigs must be graded by a representative from the Tennessee Department of Agriculture according to USDA standards.

6. Sale barns must have concrete pens and sale areas.

7. Pigs are farm inspected, and/or inspected at the sale by a representative of the producer organization, in most cases. In all cases, pigs must be inspected at the sale by the graders from the Tennessee Department of Agriculture.

These regulations apply to all producer organized feeder pig sales and affect the cost of operating these sales.

II. THE PROBLEM

The number of pigs sold through each organized sale in Tennessee in 1971 averaged 1,483 head per sale with the range varying from 450 head to 3,950 head per sale. According to a study of the marketing costs of feeder pig sales in Southern Illinois, operating efficiency is maximum when volume per sale reaches 2,000 head (2, p.35). When volume exceeds 2,000 head per sale, diseconomy exists and increases as

volume increases. The same study indicated an expected volume of 1,000 head per sale would be necessary to justify the construction of new facilities. In 1971 10 of the 21 organized feeder pig market locations in Tennessee averaged less than 1,000 pigs per sale and all but two of the sale locations averaged less than 2,000 head per sale.

From the indications of the study cited above, we may hypothesize that the existing organized feeder pig sales in Tennessee are not operating at peak efficiency. This, coupled with the continuing growth in the number of sales planned annually (533 sales were planned for 1972), suggests that all marked participants--producer, sale operator, and buyer--may not be receiving the returns that would be possible if the marketing system was operating at peak efficiency.

This study attempted to determine the costs associated with operating the producer organized sales in Tennessee. This information should be useful for determining the directions these auction markets should move to become more efficient and to organizations contemplating starting a feeder pig sale.

III. OBJECTIVES OF THE STUDY

The general objectives of this study were as follows: (1) determine costs associated with the operation of different size organized feeder pig sales in Tennessee and (2) determine the influence of volume, ownership of sale facilities, and other factors on the costs of operating organized feeder pig sales. Specific factors studied were:

1. Volume and characteristics of organized feeder pig sales.
2. Physical features and capacity of present organized feeder pig sale facilities.

3. Initial investment required for organized feeder pig sale facilities.
4. Fixed costs of sale facilities.
5. Requirements and costs of adequate labor and other personnel.
6. Other variable costs of organized feeder pig sales.
7. Revenue and total costs of feeder pig sales.
8. Development of potential costs and returns for sales of alternative sizes.
9. Problems of attracting buyers and in the management of sales.

The information furnished by this study combined with future studies dealing with the costs incurred by pig producers and buyers using organized feeder pig sales should suggest several alternatives for the reduction of costs and the improvement of the marketing efficiency of organized feeder pig sales in Tennessee.

IV. RESEARCH PROCEDURE

Data for this study were gathered from 20 of the 21 organized feeder pig sales in Tennessee. The 1971 accounting records of the sales were used as the source of the data. Responsible personnel at each sale were interviewed to gain information from the accounting records and information not covered in these records.

For analysis purposes, sales were placed in three size categories based on the total number of feeder pigs handled in 1971. Sales handling from 0 to 20,000 pigs were classified as "small"; sales handling from 20,000 to 40,000 pigs were classified as "medium"; and sales handling

40,000 pigs or more were classified as "large". There were eleven small sales, five medium sales, and four large sales.

Within each size category feeder pig sales were placed in sub-categories based on whether the sale facilities were owned privately (i.e., stockyards in most cases), publicly (i.e., fairgrounds, or by the sponsoring association. Five small sales used private facilities, five used public facilities, and one used association facilities. Four medium sales used private facilities and two used association facilities. Two large sales used private facilities and two used association facilities. Only small feeder pig sales were operating in public facilities.

CHAPTER II

REVIEW OF THE LITERATURE

Prior research to determine the costs associated with marketing feeder pigs through auction sales is limited. Only two studies dealing specifically with this topic were found. Other studies concerning factors affecting the prices received for feeder pigs have limited applicability to the determination of the costs of operating the feeder pig sales but were reviewed for their possible value. Numerous studies were found that dealt with the costs of operating livestock auctions. Some of these will be covered later.

Hill and Kirtley (1964) studied feeder pig marketing systems in an eight county region of Southern Illinois and in Wisconsin from the standpoint of the buyer, producer, and sale operator (3). They selected three firms in Southern Illinois engaged in selling feeder pigs to be studied. Two firms were cooperative feeder pig auctions such as those with which this study dealt and one firm was a contracting agency affiliated with the Illinois Agricultural Association. Hill and Kirtley were studying quality determination, marketing efficiency, pricing accuracy, volume, and the operation procedures of the sale facilities. They found that the costs to the cooperative feeder pig auctions for operating the sales averaged $1.10 per hundredweight of pigs handled. In Wisconsin they found that the costs of marketing feeder pigs was $2.74 per hundredweight for a feeder pig marketing cooperative.

O'Neal (1964) studied Sevier County organized feeder pig sales from 1961 to 1963, the period of infancy for sales in this county (6). The total annual volume of these sales ranged from 1,035 to 3,571 head. O'Neal found the variable costs of operating this sale to be $0.17 per head of feeder pigs. After computing the variable costs of operating the sales, O'Neal suggested that a volume of at least 800 to 1,000 pigs per sale be maintained to insure adequate financing and the attraction of large buyers for the feeder pig sales.

Donaldson (1970), McFall (1969), and Waddell (1965) studied the effects of pen size on prices for feeder pigs at two locations in Tennessee (1, 4, and 9 respectively). All concluded that pen sizes of at least 31 pigs or more in each weight and grade was desired by most buyers.

Williams and Stout (1964) cited a study that indicated labor availability was one of the major problems facing general livestock auction markets located in the northeastern states because of their practice of having only one or two sales per week (10). The lack of continuous sale days was also a source of much inefficiency in the market firms. Williams and Stout indicated that in 1960 the average investment in livestock auction physical facilities was $31,146.

Murra and Mire (1967) studied the costs of operating general livestock auctions in Louisiana (5). They found that total marketing costs were $3.23 per animal unit for small auctions, $2.76 for medium auctions, and $2.85 per animal unit for large auctions. The results of their study led them to stress the importance of having volume consistent with the capabilities of the facility. They found that

the lack of adequate volume reduces operating efficiency and may lead to the eventual failure of the sale.

Wootan and McNeely (1962) studied the costs of operating general livestock auctions in Texas (11). Auctions were grouped into five size categories and total costs ranged from $2.28 per animal unit for the smallest category to $1.70 per animal unit for the largest size category. They found that variable costs accounted for about 60% of the total costs of operating the sales. Small auctions had low cash outlays because of their use of family labor and low investment in the sale facilities. Larger auctions repeatedly had lower marketing costs per animal unit handled than did smaller auctions.

CHAPTER III

RESULTS AND ANALYSIS

I. VOLUME AND PHYSICAL CHARACTERISTICS OF ORGANIZED FEEDER PIG SALES

County extension personnel have been chiefly responsible for organizing 40% of the feeder pig sales in Tennessee. Their work has usually been closely coordinated with or channeled through livestock association personnel. The livestock associations alone have been chiefly responsible for organizing 25% of the sales. Vocational agriculture teachers, bankers, and others have been responsible for organizing the remaining feeder pig sales in the state.

Small sales operating in publicly owned facilities held fewer feeder pig sales (11) on the average in 1971 than did other sales while large sales operating in privately owned facilities held more sales per year (50) on the average than did all other sales (see Table I). Many sale operators indicated that they needed to hold a large number of sales (two or more per month) to remain competitive (in attracting pigs) with other feeder pig sales in their area.

The total number of feeder pigs handled on the average by each size and facility ownership sale class in 1971 ranged from 10,006 to 131,665 head. The number of feeder pigs handled per sale on the average varied from less than 900 (893) to more than 2,600 (2,633) head. The small sales operating in public facilities overaged handling the least number of pigs per sale and per year while the large sales

TABLE I

AVERAGE NUMBER OF HEAD PER SALE, POUNDS OF PIGS, AND AVERAGE NUMBER OF SALES PER YEAR

Size	Facility Owner	N	Average Number Sales Per Year	Average Number Head Per Sale	Average Number Head Per Year	Average Pounds of Pigs Per Year
Small	Private	5	13.6	895.2	12,175	622,444
	Public	5	11.2	893.4	10,006	511,367
	Association	1	12.0	1,222.0	14,664	693,743
Medium	Private	4	37.5	709.1	26,591	1,327,281
	Association	1	15.0	1,816.5	27,247	1,336,180
Large	Private	2	50.0	2,633.3	131,665	6,133,020
	Association	2	37.0	1,895.1	70,118	3,324,295
All sales			23.8	1,392.3	33,137	1,596,137

operating in privately owned facilities averaged handling the highest number of pigs per sale and per year.

Data were collected on the greatest distance regularly traveled by producers bringing pigs to each sale (see Table II).

The mean distance indicated by all sale operators was around 23 miles with the average for each size and ownership category ranging from 15.7 to 42.0 miles. On the average, there seemed to be a relationship between sale size and the greatest distance traveled by producers to sales.

Physical Features and Capacity of Present Sale Facilities

Estimates of the square feet of floor space making up selected areas of the sale facilities were developed for each sale (see Table III). Areas estimated were the pens, office, sale ring, and total area in this facility.

In privately owned facilities, the estimated pen space represents only the concreted pens meeting state standards for feeder pig sales. Average total pen space ranged from 6,625 square feet to 16,850 square feet for the sale facilities. Large privately owned sale facilities provided an average of around 17,000 square feet of pen space. Publicly owned facilities with small sales had considerably more pen space available than other facility ownership categories with small sales. Many sales increase their available pen space by using aisles and alleys as pens.

Office space ranged on the average from 150 to 550 square feet per sale facility. This office space was utilized for weighing pigs, sorting supplies, and handling records. At those sales with large amounts of available office space, office space was also made available for buyers.

TABLE II

ESTIMATED MILES TRAVELED BY PRODUCERS TRAVELING
THE GREATEST DISTANCE TO SALES

Size	Facility Owner	Average Miles Traveled
Small	Private	15.7
	Public	19.6
	Association	18.0
Medium	Private	23.3
	Association	20.0
Large	Private	42.0
	Association	30.0
All Sales		22.6

TABLE III

AVERAGE SQUARE FEET IN SELECTED AREAS OF FACILITIES
AT 20 ORGANIZED FEEDER PIG SALES

Size and Owner	No. of Sales	Pens	Office	Sale Ring	Total	Average in Total Facility by Size	Square Feet Per Pig Capacity
		Sq. Ft.					
Small							
Private	5	6,790	340	570	11,580	12,850	3.9
Public	5	9,360	266	1,056	14,890		7.0
Association	1	6,625	150	400	9,000		3.6
Medium							
Private	4	7,512	312	487	8,480	9,084	3.2
Association	1	9,500	240	900	11,500		3.3
Large							
Private	2	16,850	550	725	19,625	16,062	3.7
Association	2	9,550	370	417	12,500		3.1
All Sales		8,986	325	683	12,550		4.1

Sale ring area varied from an average of 400 to 1,056 square feet per sale facility. Public owned sale facilities with small sales had more sale ring area available than did other ownerships and size categories. Sale ring area did not appear to be a crucial factor affecting operational efficiency in any of the sale facilities as most sales only presented a sample of each pen in the sale ring for observation by the buyers during the sale.

Total square feet in all the facilities averaged 12,550 square feet. Sale facilities of small sales averaged having more total area than did facilities of medium sales (12,850 versus 9,084 square feet) because of the large total area made available by the small sales operating in public facilities (14,890 square feet). The effect of having large amounts of square footage that may be underutilized on the financial statement of sales in the small publicly owned category will be discussed later.

Estimates were made of the acreage associated with facilities, pen capacity, sales arena seating capacity, and space provided for parking (see Table IV). No definite patterns for these items were found to exist that could be associated with sale size or facility ownership.

The total capacity per sale for feeder pigs was estimated for each size and ownership category. The mean capacity for sales in each category varied from 2,140 to 5,250 head per sale. Operators of small sales in publicly owned facilities indicated their facilities averaged having less capacity than did all other sales.

TABLE IV

AVERAGE ACRES WITH FACILITY, NUMBER OF SEATS IN SALES ARENA, NUMBER OF CARS PROVIDED SPACE FOR PARKING, NUMBER OF PENS, CAPACITY PER PEN, TOTAL CAPACITY OF SALE, PERCENT OF TIME USED BY FEEDER PIG SALES

Size and Facility Owner	No. of Acres	No. of Seats in Sales Arena	No. of Cars Provided Parking	No. of Pens	Per Pen Capacity of Pigs	Total Capacity of Sale	Percent of Time Used by Feeder Pig Sales
Small							
Private	10.6	360	300[c]	22[b]	195[b]	2,980	20
Public	23.5[a]	213	Unlimited	59	50	2,140	58
Association	4	300	150	50	50	2,500	100
Medium							
Private	9.7	150	233[d]	35[a]	123[b]	2,638	79
Association	3	200	Unlimited	54	65	3,500	75
Large							
Private	4.5	500	Unlimited	36[a]	70[a]	5,250	49
Association	10.5	300	Unlimited	55[a]	150[a]	4,000	59
All Sales	11.1	278		44	146	3,033	55

[a]Information not available from one sale for this category.

TABLE IV (continued)

[b]Information not available from two sales in this category.

[c]Three sales in this category had surplus parking capacity.

[d]Two sales in this category had surplus parking capacity.

Referring to Table III (page 13), the publicly owned facilities had the greatest total square footage available per head capacity which may indicate the poor functional design of these facilities for feeder pig sales and suggest that these facilities are being greatly under utilized when used as feeder pig sales. All present feeder pig sales averaged utilizing only one-fourth to one-half of their estimated per sale capacity which indicates that the present facilities have considerable excess capacity. The three largest sale facilities have the capacity estimated necessary to handle a greater number of pigs than are presently sold by all 20 sales in the state (assuming one sale held per week).

All feeder pig sale facilities averaged being used from 20 to 100 percent of the time for feeder pig sales. The small private facilities were used less for feeder pig sales because of the small number of sales held each year. Several of the association owned facilities were built primarily to handle pigs which accounted for their high percentage utilization as feeder pig sale facilities.

All facilities had only one scale available for weighing pigs with the exception of one facility of the large sale category which had two scales. The number of chutes available for unloading pickups varied from an average of 1.2 to 7.0 chutes per sale facility. The number of chutes available for unloading stakebed trucks ranged from an average of one to more than three per sale facility. All sale facilities provided one chute for multilevel trucks. At most sales the chute for multilevel trucks was not permanently fixed to the sale facility.

All sale facilities except two privided restrooms while only five provided eating facilities in the sale facility. Eating facilities varied in elaborateness from a cafeteria to a small stand operated by one person.

When facility owners were asked about plans to expand their facilities in the next two or three years, none indicated that they had plans to do so.

Initial Investment Required for Organized Feeder Pig Sales

The cost of the physical facilities used for organized feeder pig sales varied with the elaborateness of the facility (see Table V). Building costs varied from $17,500 to $61,000 per facility with information on costs not available from the owners of the large private facilities. It is of interest to note in Table V that the privately owned facilities hosting small sales had the highest building costs of all sales for which information was available. These building costs represented only that portion of the private sale facilities which could be utilized for feeder pig sales.

In considering the building costs of sale facilities, one should also consider the years used for feeder pig sales. The privately owned facilities had been used for feeder pig sales slightly more than seven (7.1) years while the other sale facilities had been used for feeder pig sales for almost nine (8.8) years. Most sale facilities were at least as old as the feeder pig sale and many facilities were much older. Public facilities were estimated to average being constructed 16 years, private facilities--12 years, and association facilities--7 years.

TABLE V

INITIAL EXPENSES FOR BUILDINGS, ADDITIONS, LAND, EQUIPMENT, AND PRESENT VALUE OF FACILITIES

Size and Facility Owner	Initial Building Cost	Addition Cost	Land Cost	Scales Cost	Miscellaneous Building Costs	Cost of Office and Other Equipment	Total Investment Cost	Estimated Present Value of Facilities and Equipment[a]
	Dollars							
Small								
Private[b]	61,000	3,100	5,000	4,125	0.0	1,800	75,025	86,250
Public	17,500[d]	1,800	4,000[c]	2,200[d]	0.0	450	25,950	40,300
Association	31,000	0	2,500	600	250	1,425	35,675	35,000
Medium								
Private	22,833	3,000	7,575[f]	2,575	0.0	1,062	37,045	31,550
Association	27,000	0	3,600	1,460	0.0	1,000	33,060	50,000
Large								
Private[e]	NA	3,000	NA	5,000	0.0	1,050	NA	150,000
Association	41,000	4,500	6,700	2,825	4,750	1,650	59,351.50	57,448

NA = Not available for any facilities in this category.

[a]These figures represent what the sale owners feel their facilities are worth on today's market.

TABLE V (continued)

[b]Data not available from one sale for any category in this table except building costs.

[c]Data not available from three sales for this category.

[d]Data not available from one sale for this category.

[e]Data not available from one sale in this category for any items in this table except present value of facilities.

[f]Information not available from two sales in this category.

Adjustments should be made for age of the facility when projecting the costs of building sale facilities today.

Many facility owners had labor donated for building their facilities. Private facilities hosting medium sized sales averaged having 6.3 man-days of labor donated to the building of the facility; association owned facilities hosting large sales averaged 60 man-days of donated labor; and publicly owned facilities averaged having 122.4 man-days of labor donated to the building of sale facilities.

Additions to sale facilities consisted of extensions to the sale barn, purchasing of new scales, and concreting pen areas. Concreting pen areas was the most common addition made because of this health requirement of feeder pig sales that does not apply to other livestock sales.

Only two groups of sales--small and large using association owned facilities--had building costs other than those reflected in the initial building expenses of the sale facilities. These costs were never actually realized because they consisted of extensive donations of landscape work and building materials.

The total initial costs of the physical facilities and equipment used in the operation of the organized feeder pig sales varied from an average of $25,950 to $75,025 per facility. It appeared that the publicly owned facilities which had the lowers initial costs of sale operation ($25,950) will likely face sharp increases in maintenance expenses in future years because of their poor construction quality and age.

Estimates were made for the initial building investment per head of estimated capacity and per square foot for each size and ownership category (See Table VI). On the average building investment per head of capacity ranged from $7.71 for the medium sized sales operating in association owned facilities to $20.47 for the small sales operating in private facilities. The high investment per head capacity for the small sales operating in private facilities may be explained by the small percent of the total facility usage attributable to feeder pig sales. These sale facilities also averaged having the greatest initial building investment per square foot.

The average investment in office and barn equipment per head of capacity ranged from $0.70 for association owned facilities hosting medium sized sales to $1.99 per head for the privately owned facilities hosting small sales. Association owned facilities had less investment in equipment per head than the other ownership categories. Equipment investment per square foot of facility size averaged $0.35 for all sales.

The estimated average present value of sale facilities per head of capacity ranged from $28.94 to $11.96. The average for all sales was $19.10. Anyone wishing to buy or build sale facilities can reasonably expect to invest at least $14.00 to $20.00 per head of estimated feeder pig capacity. The average present value per square foot was $4.69 for all sale facilities. This figure also represents the minimum investment that would be required by anyone building or purchasing sale facilities today.

TABLE VI

BUILDING AND EQUIPMENT INVESTMENT REQUIREMENTS PER HEAD AND PER SQUARE FOOT

Size and Facility Owner	Initial Building Investment Per Head of Estimated Pig Capacity	Initial Building Investment Per Sq. Ft.	Equipment (Office and Barn) Investment Per Head of Estimated Pig Capacity	Equipment (Office and Barn) Investment Per Sq. Ft. of Facility	Estimated Present Value of Facilities Per Head of Estimated Pig Capacity[a]	Estimated Present Value of Facilities Per Sq. Ft.[a]
	Dollars					
Small						
Private	20.47	5.27	1.99[b]	.51[b]	28.94	7.45
Public	8.18[b]	1.18[b]	1.24[b]	.18[b]	18.83	2.71
Association	12.40	3.44	.81	.23	14.00	3.89
Medium						
Private	8.66	2.69	1.38	.43	11.96	3.72
Association	7.71	2.35	.70	.21	14.29	4.35
Large						
Private	NA	NA	1.15[b]	.31[b]	14.76	3.95
Association	10.25	3.28	1.12	.36	18.75	6.00
All Sales	12.14	3.08	1.39	.35	19.10	4.69

NA = Not Available.

[a]Based on what the owners felt their facilities and equipment were worth on today's market.

[b]Information not available from one sale for this category.

II. FIXED COSTS OF SALE FACILITIES

Expenses for taxes, licenses, and bonds varied from zero costs each year to an average of $1,664 per year per facility (See Table VII). The weighmen's license was the only license required for all sales except those operating in private facilities who had to buy additional licenses. No public sales bought the weighmen's license. Taxes varied due to the exempt status of public facilities, the non-profit status of association owned facilities, and to differences in the taxation of some privately owned facilities.

Some sale facilities were not insured while others were insured only for claims other than liability. These conditions could prove to be of crucial importance in the future to the owners of sales on a shaky financial basis.

Average annual expenditures for interest varied from zero for those sales with no debits to over $1,150 per year for the small sales operating in association owned facilities. Interest expenditures seemed to be hard to determine by many sale operators. The amounts shown on Table VII constitute estimates made from accounting records of the sale firms and may not be indicative of the true average interest paid each year by the operators of these sale facilities.

Average depreciation expenditures ranged from zero to $3,150 per year. Some associations had either never set up a depreciation schedule on their facilities or had depreciated them completely though several years of useful life remained in the facilities.

Annual total fixed costs that could be allocated to feeder pig sales ranged from an average of less than $300 (286.35) to more than

TABLE VII

ANNUAL FIXED COSTS[a]

Size and Facility Owner	Taxes, Licenses and Bonds	Insurance	Interest	Depreciation	Other	Total
	Dollars					
Small						
Private[b]	167.40	340.20	400.95	852.19	0.00	1,760.74
Public	Exempt	165.89	518.40	298.08	0.00	982.37
Association	10.00	550.00	1,150.00	0.00	0.00	1,710.00
Medium						
Private[b]	212.28	941.23	305.00	910.12	0.00	2,368.63
Association	4.50	354.75	0.00	507.00	0.00	866.25
Large						
Private	1,664.00	1,231.00	361.50	3,150.00	150.00	6,556.50
Association	11.50	274.85	0.00	0.00	0.00	286.35
All Sales	186.17	496.13	387.99	802.03	8.33	1,880.65

[a]For all facilities the costs shown were allocated on the basis of the percent of the total days usage of the facility that usage for feeder pig sales made. Example: Facility used 100 days in year for all purposes. Feeder pig sales held 24 days of year. Therefore: 24 percent of fixed costs allocated to feeder pig sales.

[b]Data not available from one firm for this category.

$6,500 (6,556.50). It should be noted that both the high and low average total fixed costs occurred for sale facilities in the large sale size category. The association owned facilities hosting large sales had less fixed costs on the average than did other sales because of their reduced tax expense, their small insurance expense, and the absence of interest and depreciation expenses.

III. VARIABLE COSTS OF SALE OPERATIONS

Requirements and Costs of Adequate Labor and Other Personnel

Labor appeared to be the largest expense of operating feeder pig auction markets and has been a frequent source of many operational problems. Thirty percent of the sale managers indicated that finding and keeping dependable labor was the major problem facing the operation of their sale. Specific labor problems cited were the difficulty encountered in getting people to work one day per week or less and the training of new labor for each sale. Several managers indicated that they were trying to operate the sale with too little labor, leading to inefficiency in sale operations.

Managers' salaries varied from $15 to $110 per sale (See Table VIII). Most managers of small and medium sized sales had other occupations while all large sale managers were occupied full-time with the operation of livestock sales.

All auctioneers were paid a set fee per sale regardless of the hours worked. The auctioneer at the small sale operation in an association owned facility was paid the least salary ($25) per sale. No explanation is avilable as to why this auctioneer was paid less than

TABLE VIII

AVERAGE LABOR USAGE, TOTAL HOURS WORKED PER SALE, AND TOTAL WAGES PAID PER SALE

Labor Classification	Small			Medium		Large		Average Small	Average Medium	Average Large	Average All
	Private	Public	Association	Private	Association	Private	Association				
Manager[e]											
No. hired	1	1	1	1	1	1	1	1	1	1	1
Hrs. worked	17.2	20.4	15	15.8	24	16	33	18.5	17.4	24.5	19.4
Total wages paid ($)	21.25	12.50[a]	0.00	36.75	140.00	45.00	175.00[d]	15.0	57.4	110.0	44.6
Auctioneer[e]											
No. hired	1	1	1	1	1	1	1	1	1	1	1
Hrs. worked	1.1	1.7	2.0	1.25	1.5	1.5	1.25	1.5	1.3	1.4	1.4
Total wages paid ($)	33.75[a]	42.00	25.00	56.00[b]	40.00	37.50	42.50	37.00	50.67	40.00	42.63
Office Labor											
No. hired	2.8	2.0	2.0	1.5	3.0	3.0	4.5	2.4	1.8	3.8	2.5
Hrs. worked	20.8	15.3	10.0	18.8	30.0	25.0	15.5	17.3	21.0	20.3	18.8
Total wages paid ($)	48.75[a]	25.00	50.00	35.00[c]	76.00	47.04[a]	32.68	38.06	48.67	37.46	40.59
Wages per hour ($)	2.34	1.63	5.00	1.86	2.53	1.88	2.11	2.20	2.31	1.85	2.16
Penners, Sorters and Taggers											
No. hired	6.4	8.4	11.0	8.0	14.0	18.0	9.0	7.7	9.2	13.5	9.3
Hrs. worked	40.5[a]	68.2	97.0	73.8	112.0	155.3	92.5	60.0	81.4	123.9	79.1
Total wages paid ($)	65.30	111.62	142.20	118.35[a]	224.00	267.84	164.25	96.15	144.76	216.04	153.04
Wages per hour ($)	1.61	1.64	1.47	1.60	2.00	1.73	1.78	1.60	1.78	1.74	1.68

TABLE VIII (continued)

Labor Classification	Small			Medium		Large		Average Small	Average Medium	Average Large	Average All
	Private	Public	Association	Private	Association	Private	Association				
Weighmen											
No. hired	1	1	1	1	1	1.5	1.5	1	1	1.5	1.1
Hrs. worked	6.8	7.5[a]	5.0	7.3	6.0	9.0	14.3	6.9	7.0	11.6	7.9
Total wages paid ($)	12.25[a]	22.75[a]	8.00	22.20[c]	12.50	23.52[a]	17.60	16.44	18.97	19.57	17.58
Wages per hour ($)	1.80	3.03	1.60	3.04	2.08	2.61	1.23	2.38	2.71	1.69	2.23
Graders[e]											
No. hired	1	1	1	1	1	2	1	1	1	1.5	1.1
Hrs. worked	5.4	5.3	5.0	6.3	6.0	12.0	6.3	5.3	6.2	9.1	6.3
Total wages paid ($)	37.89	38.94	37.50	38.95	37.50	72.28	63.97	38.33	38.66	68.12	44.37
Other Labor											
No. hired	.2	.6	0	1.2	0	1.5	1	.4	1	1.3	.7
Hrs. worked	4.6	4.8	0	7.3[a]	0	9.0	6.0	4.3	5.5	7.5	5.2
Total wages paid ($)	15.00	14.00	0	8.33[a]	0	33.50	20.00	13.18	6.25	26.75	14.58
Wages per hour ($)	3.26	2.92	0.0	1.14	0.0	3.72	3.33	3.07	1.14	3.57	2.80
Total											
No hired	13.4	15.0	17.0	14.7	21.0	28.0	19.0				
Wages	234.19	266.81	262.70	315.58	530.00	526.68	516.00				

[a]Information not available from one sale for this category.

TABLE VII (continued)

[b]One auctioneer in this category was the barn operator for which a salary could not be determined. Information from one other sale auctioneer was not available for this category.

[c]Information not available from two sales for this category.

[d]One manager in this category receives, as a portion of his salary, part of the earnings of the association. His minimum salary for each sale was used in computing the average.

[e]The managers, auctioneers, and graders were mostly paid on a flat rate basis or a fee schedule where hours worked did not determine the wages paid. Therefore, wages per hour are not figured for this labor.

other auctioneers. All auctioneers were employed in jobs other than full-time auctioneering for the feeder pig sales.

Most office workers, barn workers (penners, sorters, and taggers), weighmen, and other laborers were employed in additional jobs other than feeder pig sale work. Office workers, barn workers, and weighmen were paid on the average $2.16, $1.68, and $2.23, respectively. Sources of these workers varied from the county extension service, students, and farmers to housewives.

The wages paid office workers varied with the type of personnel performing the office duties. Some sales hired professional bookkeepers or accountants to do the office work while other sales used a large amount of donated labor.

The labor expense of penners, sorters, and taggers varied with the layout of the physical facilities and with the percentage of pigs tagged and inspected on the farm. Some sales required fewer laborers because of efficiently designed facilities and the on farm tagging of more of the pigs than other sales.

Total hours donated to the sale operation ranged from 6.5 hours per sale for the large sales to an average of 36.2 hours per sale for the small sales (See Table IX). Livestock association members contributed a portion of the donated labor.

Graders were employed by the Tennessee Department of Agriculture (TDA) and the sales were billed by the TDA for the graders services. Sales were charged $0.03 per pig if the number of pigs per sale was greater than 1,000 or $37 if the number of pigs per sale was less than 1,000.

TABLE IX

AVERAGE HOURS LABOR DONATED PER SALE TO SALE OPERATION

Size	Facility Owner	Hours
Small	Private	36.2
	Public	24.6
	Association	8.0
Medium	Private	10.5
	Association	18.0
Large	Private	6.5
	Association	6.5
All Sales		19.9

Referring to Table VIII, labor classified as "other" included people having duties of inspecting incoming pigs before they went to the grader, checking eligibility of producers, bookkeeping, and serving as ringmen.

The time required after the end of the sale to complete all office work and the loading out of pigs ranged from 0.5 to 11 hours with 4 hours being the average time used. The number of pigs handled by the sale determined the amount of time necessary to complete office and loadout work.

The arrangement of the chutes, scales, and pens in the sale facilities affected the amount of labor needed. The Jamestown sale facilities should be visited by anyone interested in seeing a facility that is efficient from the standpoint of labor needs because of the total physical layout of the facility. The time table for different sale activities also influenced the hours worked by labor. Some facilities opened earlier and therefore had to pay for more hours worked by labor than did other sales. See Table XXII in the Appendix, for the time table of sale activities for the organized feeder pig sales included in this sale.

Advertising Expenses of Organized Feeder Pig Sales

On the average, advertising was the second greatest operating expense incurred by organized feeder pig sales. Advertising may be where much money is being unwisely placed and is surely a concern to most sale managers interviewed by this researcher.

The telephone was the greatest used advertising tool (See Table X). Sale managers used the telephone for contacting buyers, producers, and, to a limited extent, for selling pigs. The small sales operating in public facilities appeared to be the primary users of the telephone in advertising and averaged spending around $400 per month for this type of advertising.

Some small sales were attempting to combine the features of the regular on-site-bidding auction with the features of a tele-auction through the use of the telephone. The combination of these features has proven successful for most sales using it although the tele-auction method of marketing alone has not yet proven its value in Tennessee.

The state livestock association accounted for the second highest advertising expense for feeder pig sales. The state livestock association encourages each sale to earmark $0.02 of the commission received per head for advertising efforts of the association. Most sale sponsoring organizations followed this practice except for the large sale sponsors. Operators of these sales believe their established volume records and their other advertising efforts were sufficient without participation in the state association's advertising efforts.

The small and medium sized sales operating in association owned facilities relied almost entirely on the state livestock association for their advertising. Most other advertising used by the operators of these sales was donated by the county extension office or by local private agricultural interests.

A significant portion of the direct mail advertising for all sales was being coordinated through the county extension service. This

TABLE X

AVERAGE ANNUAL ADVERTISING AND PROMOTION EXPENDITURES[a] BY TYPE AND COSTS OF SERVICE PROGRAMS

Size and Facility Owner	Radio	Farm Publications	State Livestock Association	Telephone	Direct Mail	Other	Subtotal	Costs of Service Programs	Total
	Dollars								
Small									
Private	0.00	60.00	180.33	68.00	72.00	286.00	666.33	140.00	806.33
Public	6.40	23.40	30.84	1,072.81	188.00	0.00	1,321.45	120.00	1,441.45
Association	0.00	0.00	293.28	0.00	0.00	0.00	293.28	0.00	293.28
Medium									
Private	187.50	126.25	165.90	62.50	86.25	73.13	701.53	118.75	820.28
Association	0.00	0.00	544.94	0.00	255.00	0.00	799.94	250.00	1,049.94
Large									
Private[b]	0.00	0.00	0.00	0.00	0.00	931.63	931.63	4,000.00	4,931.63
Association	180.00	0.00	0.00	48.00	150.00	734.00	1,112.00	400.00	1,512.00
All Sales	57.11	46.10	127.88	293.13	110.00	252.69	886.91	541.25	1,428.16

[a]The owner of one facility had over $12,000 expenditure for advertising and promotion which is not reflected in this table.

[b]Information from the two sales in this category gave only the total advertising expenditures for each sale. These expenditures were all placed under the "other" column.

part of the sale operation and expenses could be the responsibility of the sale management or local livestock association personnel.

Service programs were a form of advertising and/or public service. The service provided by the sale sponsoring associations took many forms. Some of these were:

1. Boar buying assistance for eligible producers.
2. Gilt buying programs.
3. Sponsoring awards for 4-H and FFA livestock shows.
4. Sponsoring production tested livestock sales.
5. Sponsoring educational programs on livestock production practices.

Perhaps the most extensive service programs in the state were those of the Cookeville and Lawrenceburg sale sponsoring associations. Average cost of these service programs is presented in Table X.

Costs of Meeting Health Regulations

Expenses of meeting the health regulations are a significant portion of the total operating costs of each feeder pig sale. The management of each feeder pig sale must agree to follow health regulations of the Tennessee Department of Agriculture (TDA) and the USDA before the sale is allowed to operate. Each sale is then subject to inspection at any time by state or federal inspectors. Therefore, it is necessary that an ongoing effort be made to meet these minimum health standards.

Pigs must come directly to the sale from the farm of the pig producer. To safeguard against "pig dealers" all pigs are inspected at

the farm or at the loading dock when the pigs arrive at the sale. Each consignor is required to have an identification card indicating his county of residence, the number of sows he farrows, and the approval of some designated person who is knowledgeable of the producer's operation. The operators of two sales paid $0.05 per pig for on-farm-inspection of pigs and one sale paid $0.07 per pig for this inspection. All sales were required to have someone available whose job was to check the eligibility of all pig producers selling through the feeder pig sale.

The requirement that all sales be held on impervious material has already been discussed in Section III of this chapter. This requirement has caused higher building costs to be incurred by those sponsoring feeder pig sales though the potential for disease existence has been reduced.

Pigs must not be held on premises where slaughter swine have been held since the last feeder pig sale unless the facility has been thoroughly cleaned and disinfected. Expenses necessary to meet this requirement are shown in Table XI. Some facilities in which feeder pig sales were held no more than one time per month and no other livestock sales were held did not disinfect their facilities before each sale. Litter was not used in the pens by all sales. Labor was usually the largest item of expense in meeting this requirement.

Another health requirement that must be met deals with the identification of each pig back to the farm of the producer of that pig. This requirement is met by the eartagging of each pig with ear tags provided by the TDA for this purpose. This identification requirement

TABLE XI

AVERAGE EXPENSE PER SALE FOR MEETING HEALTH REQUIREMENTS

Size and Facility Owner	Litter	Disinfectant	Labor	Other[d]	Total
	Dollars				
Small					
Private[a]	5.00	4.30	12.80	13.33	35.43
Public[b]	2.00	1.67	37.17	0.00	45.54
Association	0.00	0.00	56.00	0.00	56.00
Medium					
Private[c]	3.33	0.88	35.20	0.00	39.41
Association	0.00	1.00	42.00	0.00	43.00
Large					
Private[c]	26.80	5.45	48.00	0.00	80.25
Association	13.75	3.50	25.00	0.00	42.25
All Sales	6.09	2.43	32.25	2.86	44.75

[a]Information from two sales not available for this category.

[b]Information from two sales in this category provided only the total expenditure (averaged $52.60 per sale) but not the break-out for each heading. These expenditures are figured into the total average costs.

[c]Information from one sale not available for this category.

[d]Expenses in this category are for machine hire.

also necessitates the keeping of adequate records indicating the origin and destination of each pig.

Before pigs can leave the state they must be accompanied by a health certificate. This health certificate is issued by an inspecting veterinarian. All sales but two indicated that they had a veterinarian available for this duty. Eight sales paid for the veterinarian's services and this cost averaged $423.75 per year per sale. The remaining sales passed this expense on to the buyer or to the pig producer.

Other Expenses

Sixty-five percent of the sale facilities provided heat in a portion of their facilities during four to six winter months. Their expense for heating averaged $4.00 per sale more than their regular expenditure for utilities.

Stamps were a large item of expense for most sales (See Table XII). Expenditures for this item amounted to an average of $311 per sale facility and usually exceeded the expense of all other office supplies.

A summary of all variable costs is presented in Table XII.

IV. REVENUE AND TOTAL COSTS OF FEEDER PIG SALES

Total Revenue

Marketing changes from which sale revenue was derived was computed by two methods--straight per head and straight per head plus percentage of gross revenue--by all sales but one (Table XIII). All sales indicated no special reason for selecting the computation method they used. It is

TABLE XII

AVERAGE ANNUAL VARIABLE COSTS BY SIZE AND TYPE OF FACILITY OWNERSHIP

Size and Facility Owner	Labor	Adver-tising	Util-ities[a]	Mainte-nance & Repairs	Stamps	Other Office Supplies	Barn Supplies[e]	Other[b]	Total
					Dollars				
Small									
Private	3,184.98	806.33	465.33[c]	230.00[c]	139.67[c]	108.33[c]	133.15[c]	26.67[c]	5,094.46
Public	2,988.27	1,441.45	321.60	175.00	311.20	122.00	61.10	455.24	5,875.86
Association	3,152.40	293.28	180.00	180.00	456.00	240.00	0.00	0.00	4,501.68
Medium									
Private	11,834.25	820.28	1,594.25	325.00	275.25	182.40	157.87[d]	385.41	15,598.09
Association	7,950.00	1,049.94	562.46	198.00	200.00	175.00	15.00	75.00	10,225.40
Large									
Private	26,334.00	4,931.63	773.90	547.73	255.00[d]	2,102.50	2,270.01	2,921.45	40,136.22
Association	19,092.00	1,512.00	2,379.00	300.00	650.00	1,792.00	638.25	3,189.33	29,552.58
All Sales	9,276.82	644.36	264.33	246.92	311.00	548.26	412.36	899.69	12,603.74

[a]Includes telephone use for purposes other than advertising.

[b]Major items included in this category were: (1) Social Security expenses not included in labor, (2) veterinarian expense, and (3) costs of on-farm inspection.

[c]Information not available from two sales for this category.

[d]Information not available from one sale for this category.

[e]Included in "Barn Supplies" are all expenditures for meeting health requirements except labor.

TABLE XIII

METHODS OF COMPUTING MARKETING CHARGES, MEDIAN TOTAL MARKET CHARGES, MEDIAN CHARGE GOING TO COUNTY ASSOCIATION, MEDIAN CHARGE GOING TO SALE OPERATOR IF DIFFERENT THAN COUNTY ASSOCIATION, AND MEDIAN CHARGE GOING TO OTHER SOURCES

Method of Computing Charges	All Auctions (%) n=20	Median Total Charge	Median Charge Going to County Association	Median Charges Going to Sale Operator if Different Than County Association	Median Charge to Other Sources
			Dollars		
Straight per head	70	.66	.405	.23	.025
Combination per head and percentage	25	.50 + 1%	.08	.42 + 1%	.00
Other	5	.01/lb.	.01/lb.	.00	.00
Total	100				

reasonable to assume that the total charge per head would be about the same under any of the methods used in Tennessee. The average commission received per head of feeder pigs handled was $0.64 for all sales and ranged from $0.61 to $0.67 (See Table XIV). All sale operators were questioned as to whether they gave quantity discounts for larger groups of pigs brought to the sale. None did though it was later learnied that this practice is allowed by state and federal regulations. Discriminatory charges for marketing are not allowed. No credit was extended for marketing charges. The charges were subtracted from the gross receipts of the farmer before the farmer received his payment.

All sales accepted pigs from outside the counties where the sales were located. Four sales returned a portion of the marketing charge to the local associations of out-of-county producers using the sales. No sale operators made additional charges to producers from outside the counties where the sales were located.

One sale operated a receiving station at a location other than the main sale facility. Producers were charged a fee for hauling the pigs to the main sale facility. The sale manager pointed out that this receiving procedure was purely a service to the producers and not a profitable part of the sale operation.

Total Costs

Total costs of various sales varied directly with sale sizes with the sales operating in the association owned facilities incurring the least costs (See Table XV). The average total costs per head ranged from $0.35 for large sales operating in private facilities to $0.68

TABLE XIV

AVERAGE ANNUAL REVENUE, COSTS, AND NET REVENUE PER HEAD OF PIGS HANDLED

Size and Facility Owner	Revenue From Commission Per Head	Annual Fixed Costs Per Head	Annual Variable Costs Per Head	Total Costs Per Head	Net Revenue Per Head
Small					
Private	.67	.14	.42	.56	.11
Public	.61	.10	.59	.69	-.08
Association	.65	.12	.31	.43	.22
Medium					
Private	.65	.09	.59	.68	-.03
Association	.65	.03	.38	.41	.24
Large					
Private	.63	.05	.30	.35	.28
Association	.64	.00[a]	.42	.42	.22
All Sales	.64	.06	.38	.44	.20

[a]Actual value = $0.004

TABLE XV

AVERAGE ANNUAL REVENUE, COSTS, NET REVENUE AND RETURN ON INVESTMENT

Size and Facility Owner	Estimated Present Investment Value	Revenue from Commissions	Annual Fixed Costs	Annual Variable Costs	Total Costs	Net Revenue	Net Revenue After Accounting for Donated Labor	Percent Return on Investment[a]
	Dollars							
Small								
Private	86,250	8,204.84	1,760.74	5,094.46	6,855.20	1,349.64	315.77	1.6
Public	40.300	6,063.37	982.37	5,875.86	6,858.23	-794.86	-1,373.43	0[b]
Association	35,000	9,531.60	1,710.00	4,501.68	6,211.68	3,319.92	3,118.32	9.5
Medium								
Private	31,550	17,384.97	2,368.63	15,574.71	17,943.34	-558.37	-1,385.25	0[b]
Association	50,000	17,710.55	866.25	10,225.40	11,091.65	6,618.90	6,051.90	13.2
Large								
Private	150,000	83,283.27	6,556.50	40,136.22	46,692.72	36,590.55	35,908.05	24.4
Association	75,000	44,922.51	286.35	29,552.58	29,838.93	15,083.58	14,578.53	20.1
All Sales	57,448	21,226.73	1,880.65	12,603.74	14,484.39	6,742.34	5,747.74	11.7

[a]Return before having to pay for donated labor.

[b]Negative return on investment.

for medium sales operating in private facilities. All sales operating with a positive net revenue and total costs of $0.56 per head or less on the average. Variable costs accounted for 72 to 99 percent of the total costs incurred. This is in variance with the study cited earlier of livestock auctions where variable costs accounted for 60 percent of the total costs (11). The high percentage of total costs accounted for by variable costs may be attributed to the allocation of costs on the basis of the percentage of total days usage by feeder pig sales.

Net Revenue and Return on Investment

Referring to Table XV, the small sales operating in public facilities and the medium size sales operating in private facilities were the only sales to show a net revenue loss. Net revenue per head of pigs was $0.11 or greater for all sales operating with a positive net revenue. All sales did cover their variable or operating expenses. All sales operating in association owned facilities had a positive net revenue. These small, medium, and large association owned and operated sales averaged approximately $3,320, $6,619, and $15,084 net revenue per year, respectively. Small and large sales operating in private facilities also averaged a positive net revenue of about $1,350 and $36,590 respectively, which is net revenue above costs of service programs included under advertising. The association operated sales using their own facilities returned much of their net revenue to other county producer associations and used the money to purchase or replace equipment and to make advance payments on the financed sale facilities

Estimates were made of the average net revenue of each sale size and ownership category under the assumption that all donated labor was

paid $2.10 per hour. If the medium size sales operating in private facilities paid for all donated labor, then they would average a net revenue of around $1,385 per year. These sales would only cover variable costs by around $1,810 if all donated labor was paid $2.10 per hour.

The small sales operating in public facilities had a net loss of about $795 per year on the average. These sales returned an average of around $187 above variable costs per year. An imputed cost of donated labor at a rate of $2.10 per hour would not allow the variable costs of these sales to be covered.

A breakdown of the costs and returns to the association and to the owners of the private facilities will be discussed later.

The average return on investment was estimated for each size and ownership category. The returns on estimated present investment value ranged from less than zero to 24.4 percent. The association owned and operated sales averaged around 16 percent return on the estimated value of their present investment. The owners of the large private sale facilities averaged around 24 percent return on the estimated value of their present investment.

Costs and Returns Allocated Between Association and Facility Owner

The associations that sponsored the feeder pig sales but did not own the facilities shared the revenue and costs of the sale operation. Most associations paid all the advertising expenses for the feeder pig sales. Other items of the operating expenses shared by the facility owner and the sponsoring association were office supplies, some barn supplies, and labor.

Fixed costs usually shared by the associations and the facility owners were licenses for the weighmen, interest, and depreciation on equipment.

The associations sponsoring small, medium, and large sales were found to be paying 27.4, 20.5, and 14.0 percent of the total costs, respectively, on the average. These associations were being paid 40.0, 23.6 and 7.1 percent of the total revenue respectively (See Table XVI).

The associations sponsoring small sales receiving the largest percentage of the total revenue paid the largest percentage of the total costs. As the sale size increased the percentage of the total revenue and total costs allocated to the association decreased.

A more detailed breakdown of the allocation of costs and revenue between associations and private sale facility owners is given in the Appendix.

V. ESTIMATED CONSTRUCTION, OPERATION COSTS AND RETURNS FOR 3,000 AND 5,000 HEAD CAPACITY FEEDER PIG SALES

Budgets were estimated for sales of two sizes--one having a capacity of 3,000 head per sale and another having a capacity of 5,000 head per sale (See Tables XVII and XVIII). The primary source of information for these budgets come from the aggregation of ownership categories for existing medium and large size organized feeder pig sales (data from medium size sales were used in the budget for the 3,000 head capacity sale and data from large size sales were used in the budget for the 5,000 head capacity sale).

TABLE XVI

AVERAGE ANNUAL COSTS AND RETURNS OF FEEDER PIG ASSOCIATIONS AND PRIVATE SALE FACILITY OWNERS BY SIZE

	Association			Facility Owner		
	Small	Medium	Large	Small	Medium	Large
	Dollars					
Total revenue	3,287.25	4,095.01	5,924.93	4,917.59	13,289.96	77,385.34
Variable cost	1,865.53	3,664.30	6,550.00	3,228.93	11,910.41	33,586.22
Fixed cost	10.00	18.75	0.00	1,750.74	2,349.88	6,556.50
Total cost	1,875.53	3,683.05	6,550.00	4,979.67	14,260.29	40,142.72
Net revenue	1,411.72	411.96	-625.07	-62.08	-970.33	37,215.62
Percent of total costs	27.4	20.5	14.0	72.6	79.5	86.0
Percent of total revenue	40.0	23.6	7.1	60.0	76.4	92.9

TABLE VII

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR 3,000 HEAD CAPACITY FEEDER PIG SALES

Item	Dollars	Dollars
Revenue		
Sale commissions	49,896.00	
Total revenue		49,896.00
Variable Costs		
Labor	11,889.00	
Advertising	4,186.00	
Utilities	1,388.00	
Maintenance and repairs	300.00	
Stamps	260.00	
Other office supplies	181.00	
Barn supplies	122.00	
Other	323.00	
Total variable costs	18,649.00	
Fixed Costs		
Taxes, licenses, bonds	160.00	
Insurance	824.00!	
Interest	1,303.00	
Depreciation	1,800.00	
Other	0.00	
Total fixed costs	4,087.00	
Total costs		22,736.00
Net revenue		27,160.00
Total Investment Costs		
Initial building costs	26,067.00	
Land costs	6,700.00	
Scales costs	2,352.00	
Cost of office and barn equipment	1,049.00	
Total	36,168.00	
Revenue and Costs Per Pig		
Total revenue per pig	0.63	
Fixed costs per pig	0.05	
Variable costs per pig	0.24	
Total costs per pig	0.29	
Net revenue per pig	0.34	

TABLE XVIII

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR 5,000 HEAD CAPACITY FEEDER PIG SALES

Item	Dollars	Dollars
Revenue		
Total sale commissions		110,880.00
Variable Costs		
Labor	46,027.00	
Advertising	1,022.00	
Utilities	1,576.00	
Maintenance and repairs	424.00	
Stamps	453.00	
Other office supplies	1,947.00	
Barn supplies	1,454.00	
Other	3,055.00	
Total variable costs	55,958.00	
Fixed Costs		
Taxes, licenses, bonds	838.00	
Insurance	753.00	
Interest	2,124.00	
Depreciation	2,954.00	
Other	0.00	
Total fixed costs	6,669.00	
Total variable and fixed costs		62,627.00
Net revenue		43,253.00
Total Investment Costs		
Initial building costs	47,125.00	
Land costs	6,700.00	
Scales costs	3,912.00	
Cost of office and barn equipment	1,350.00	
Total	59,087.00	
Revenue and Costs Per Pig		
Total revenue per pig	0.63	
Fixed costs per pig	0.04	
Variable costs per pig	0.32	
Total costs per pig	0.36	
Net revenue per pig	0.27	

It was assumed that the sale facilities would average operating at 80 percent capacity. The average number of sales to be held each year were assumed to be 33 for the medium size sales and 44 for the large size sales. The interest rate on borrowed capital was assumed to be 7 percent per annum and the buildings were assumed to be fully depreciated after 20 years with no salvage value. The marketing charge per pig was assumed to be $0.63. It was further assumed that all labor would be paid for and that there would be no public service programs.

These budgets should be of value to either an association planning to build a facility or to a private individual planning to do so. The expense for taxes, licenses, and bonds should be greater for the private owner than those given in the tables and should be less for the association than those given because of the tax reductions afforded organizations set up as non-profit entities.

The average initial building costs for sale facilities of 3,000 head capacity were estimated to be $26,067 (see Table XVII). The building would be functional only for use in feeder pig sales. The total investment in buildings, land, scales, and equipment was estimated to be $36,168.

Gross revenue for each year of operation at 80 percent capacity for 33 sales was estimated to be $49,896. Total annual costs were estimated to be $22,736 of which 82 percent ($18,649) was variable costs. Net revenue would be $27,160 annually or $0.34 per pig returning $0.75 to each dollar invested. From this projected return on investment, the importance of volume that is consistent and that makes up a major

part of the facility's available capacity can be readily seen on the financial situation of a sale facility, assuming the conditions previously stated.

The average initial building costs of sales facilities of 5,000 head capacity were estimated to be $47,125 (see Table XVIII). The building would be built for no other use than for feeder pig sales. The total investment in the facility, land, and equipment was projected at $59,087.

Annual gross revenue was estimated to be $110,880. Total annual costs were estimated to be $62,627 of which 89 percent was variable or operating costs. Net revenue was estimated to be $48,253 for each year or $0.27 per pig returning $0.82 to each dollar invested. When considering the return per dollar invested, one should be cognizant of the possibility of all costs to management for these sales not being represented in this analysis.

On a per pig basis, fixed costs were less for the large sale than those for the 3,000 head capacity facility indicating some economies of scale present while variable costs per pig were greater for the larger sale indicating some diseconomies associated with the variable costs of the larger facility. From the standpoint of cost minimization rather than profit maximization and assuming the existence of present facility construction technology and operational efficiency, the optimum size sale probably lies somewhere between 3,000 and 5,000 head capacity. Total costs per pig for existing sales were found to be greater than the costs for the hypothetical 3,000 head capacity sale. The subsequent increase in total costs per pig for the 5,000 head capacity sale over the costs for the

3,000 head capacity sale warranted the conclusion of optimum sale size falling between three and five thousand. This conclusion could be invalid if new technology increased the operational efficiency of new facilities beyond the present operational efficiency of sale facilities.

VI. PROBLEMS OF ATTRACTING BUYERS AND OF THE MANAGEMENT OF SALES; ADVICE TO GROUPS WISHING TO ORGANIZE SALES

As stated before, much of the expense of advertising is spent in an attempt to get enough buyers to attend a sale so a competitive price may be paid for the pigs offered. The type of buyers attending a sale varies somewhat with the size and location of the sale. Sales in West Tennessee attracted a greater proportion of in-state feeders and out-of-state feeders than did Middle and East Tennessee sales which were predominated by order buyers. In-state feeders were attracted more to the small sales while order buyers liked the large sales where volume and selection was adequate for their needs (See Table XIX). Having "adequate" volume was mentioned by all sale operators as being necessary for attracting buyers in sufficient quantity and with desirable quality (money). "Maintaining volume" was the major problem cited by the largest number of sale operators (See Table XX). Following closely was "the inability to get dependable labor."

The labor problem may stem from the unique character of the auction type of market. As sales are in operation only one day per week, if that often, sale operators must rely on personnel who are available for work on a temporary basis. Sale operators are fortunate if they can find a

TABLE XIX

PERCENT OF PIGS SOLD DIRECTLY TO BUYERS
FALLING IN SELECTED CATEGORIES

Size	Facility Owner	In-State Feeders	Out-of-State Feeders	Order Buyers
		Percent		
Small	Private	29.6	18.0	52.4
	Public	48.0	11.0	41.0
	Association	20.0	5.0	75.0
Medium	Private	20.0	1.2	78.8
	Association	5.0	10.0	85.0
Large	Private	10.0	17.5	72.5
	Association	14.0	13.5	72.5
All Sales		27.1	11.3	61.6

TABLE XX

PROBLEMS ASSOCIATED WITH OPERATING 20 ORGANIZED FEEDER PIG SALES

Problem	Small N=11	Medium N=5	Large N=4	Total N=20
	Percent[a]			
1. Low volume/volume fluctuates widely	64	20	0	40
2. Hard to get dependable labor	36	0	50	30
3. Small number of buyers	18	20	0	15
4. Meeting health requirements	0	20	50	15
5. Grading	9	0	25	10
6. Other	0	20	50	15
7. No problems	18	40	0	20

[a]Percentages sum to greater than 100 because of multiple problems given by some sales.

sufficient number of laborers who will work for the sale on sale day. The sale located at Savannah should be studied by anyone interested in methods successfully used to combat the problems of labor availability. This sale depends largely on students for labor and has been quite successful in the management of this labor source.

The item of advice given by the greatest number of sale operators to anyone interested in organizing a feeder pig sale was that "adequate, reliable volume and quality should be ascertained to be available." (See Table XXI). Following closely was the need for "a strong producer association."

Though only 10 percent of the sale operators primarily advised that "Other feeder pig sales should be visited first," many operators indicated that they had done so and felt this practice was of value to their beginning operation.

TABLE XXI

ADVICE GIVEN BY SALE PERSONNEL AT 20 ORGANIZED FEEDER PIG SALES TO ANYONE WISHING TO ORGANIZE A FEEDER PIG SALE

Advice	Total[a] N=20 (%)
1. Make sure that adequate, reliable volume and quality of pigs is available	40
2. Should have a strong producer association	35
3. Association should own and operate its own facilities	25
4. Should visit other sales first	10
5. Plan for a slow start before sale becomes successful	15
6. Other	10

[a]Sums to more than 100 because of multiple items of advice offered by some sales.

CHAPTER IV

SUMMARY AND CONCLUSIONS

I. SUMMARY

The general objectives of this study were as follows: (1) determine costs associated with the operation of different organized feeder pig sales in Tennessee and (2) determine the influence of volume, ownership of sale facilities, and other factors on the costs of operating organized feeder pig sales.

The method used for implementing this study involved the use of 1971 sale accounting data collected by personal interviews with 20 of the 21 sale managers during the summer of 1972.

For analysis purposes sales were placed in three size categories as follows: (1) 0-20,000 feeder pigs sold in 1971--small, (2) 20,000-40,000 feeder pigs sold--medium, (3) 40,000 pigs or more sold in 1971--large. Within each size category sales were divided on the basis of the entity owning the sale facilities--privately owned, publicly owned, and association owned.

The total number of pigs handled on the average by each sale size and facility ownership class in 1971 ranged from 10,000 to 131,665 head. The average number of pigs handled per sale varied from 893.4 to 2,633.3 head.

County extension personnel followed by livestock association personnel were chiefly responsible for organizing feeder pig sales.

Average pen space ranged from 6,625 square feet to 9,550 square feet for the sale facilities. Small sales operating in public

facilities had considerably more pen space available than did all other sales classified as small.

Total square feet in all the facilities averaged 12,550. Small sales conducted in public facilities were exceeded in total area by only large sales operating in private facilities.

The mean capacity for sales in each category varied from 2,140 to 5,250 head per sale. Though the small sales operating in public facilities averaged having the least capacity per sale than sales in other categories, they had the greatest square footage available per head because of the possible poor functional design of these facilities for feeder pig sale usage.

The average usage of the sale facilities for feeder pig sales ranged from 100 percent to only 20 percent of the total time the facilities were used for all purposes.

Initial building costs varied from $17,500 to $61,000 with information on costs not available from the owners of the large private facilities. The privately owned facilities hosting small sales had the highest building costs of all sales for which information was available.

The total initial costs of the facilities and equipment used in the feeder pig sales varied from an average of $25,950 to $75,025. Building investment per head of capacity ranged from $7.71 for the medium sized sales operating in association owned facilities to $20.47 for the small sales operating in private facilities. The average investment in office and barn equipment per head of capacity ranged from $0.70 for the medium sized, association owned facilities to $1.99 per head for the small, privately owned facilities. The estimated

average present value of sale facilities per head of capacity ranged from $28.94 to $11.96 with the average for all sales being $19.10. Anyone wishing to build or buy sale facilities should reasonably expect to invest at least 14 to 20 dollars per head of estimated feeder pig capacity.

Expenses for taxes, licenses, and bonds varied from zero costs annually to an average of $1,664 per year. Sales operating in public or association owned facilities received a reduction in this expense over those sales operating in private facilities because of tax exemptions or reductions allowed non-profit organizations (associations).

Some sales carried no insurance on their facilities and many sales carried no liability insurance. Interest expenditures varied from zero to over $1,150 per year per facility. Average depreciation expenditures ranged from zero to $3,150 per year per facility.

Total fixed costs ranged from $286.35 to $6,556.50 annually per facility. Both the high and low average total fixed costs occurred for sales in the same (large) sale size category.

Labor was the largest operating expense for all sales. Total labor expenditures ranged from $256.61 to $530.00 per sale. Most workers at feeder pig sales had jobs other than the ones they performed at the sales. Hours of donated labor varied from 6.5 to 36.2 per sale.

Advertising was the second largest expenditure for the feeder pig sales. The telephone was the greatest used tool for advertising followed by the advertising by the state livestock association.

Average expenses for meeting health regulations per sale varied from $35.43 to $80.25. The average for all sales was $44.75.

Total average variable costs ranged from $4,501.68 to $40,136.22 with increased size of the sale generally indicating increased total variable or operating costs.

The average commission received per head of pigs handled for all sales was $0.64. The average total costs per head ranged from $0.35 for large sales operating in private facilities to $0.68 for medium sales operating in private facilities. All sales operating with a positive net revenue had total costs of $0.43 per head or less on the average.

All public sales and the medium sized sales operating in private facilities were found to be operating unprofitably. Small sales held in private facilities would have been unprofitable if they were forced to pay for the labor donated to their operation. Small sales held in public facilities were the only sales that would not average covering their variable costs if forced to pay for their donated labor.

Revenue and costs were incurred by more than one party of the majority of the feeder pig sales. The association shared these items with the owners of the facilities if the association was not the owning party.

The association usually paid all advertising costs and shares the costs of office supplies, barn supplies, and labor. Fixed costs shared were for licenses, interest, and depreciation on equipment. The association's share of total costs ranged from 27.4 percent for the small size sales to 14.0 percent for the large size sales. The association's share of the total revenue ranged from 40.0 percent for the small size

sales to 7.1 percent for the large size sales. As sale size increased the percentage of the total revenue and costs allocated to the association decreased.

Budgets were developed for hypothetical sales of two sizes--3,000 (medium) and 5,000 (large) head capacity. The initial building costs of the medium sale facility (3,000 head) was estimated to be $26,067 and the total investment in facilities, land, and equipment was estimated to be $36,168. The gross revenue per pig handled was projected at $0.65, total costs were estimated to be $0.29 per pig, and the net revenue was projected at $0.34 per pig. If the sale operated at 80 percent capacity for 33 sales per year, it should return $0.75 for each one dollar invested.

The initial building costs of the large facility (5,000 head capacity) was projected at $47,125 and the total investment in the facility, land, and equipment was projected to be $59,087. Gross revenue per pig handled was estimated to be $0.63, total costs were projected at $0.36 per pig and net revenue would be $0.27 per pig. If the sale operated at 80 percent capacity for 44 sales each year it should return $0.82 for each one dollar invested.

"Lack of volume" was cited predominantly as the greatest problem in attracting buyers. "Lack of volume" and the "inability to get dependable labor" were the two greatest management problems cited by sale operators. "Being assured of adequate volume and quality" was the item of advice offered by the greatest number of sale operators to anyone interested in organizing a feeder pig sale.

II. CONCLUSIONS

The results of this study support the hypothesis of inefficiency existing in the organized sales marketing feeder pigs in Tennessee. The increase in the number of sale locations and the number of sales held each year has created inefficient and excessively expensive conditions for all market participants--pig producers, sale operators, and pig buyers.

Sale size or volume was the most important factor determining the success or failure of feeder pig sale operations. Sales operating in association owned facilities, on the average, were the only sales that appeared to be operating with a positive net revenue regardless of the level of volume. However, it is recommended that feeder pig associations planning to start a sale with a volume under 1,200 pigs per sale should be prepared to donate at least 30 percent of the required labor, advertising, and other operating expenses. The management of such a small sale would have to also be donated by some qualified individuals. Also, should the association choose to build a sale facility to handle such a small volume, then they must be prepared to donate a considerable amount of labor to its construction. There is little justification for any feeder pig sale to be started where volume of at least 1,000 head per sale is not ascertained to be available.

The budgets developed for sales of 3,000 and 5,000 head capacity indicated that the operation of feeder pig sales could be a very profitable private venture if the conditions assumed in deriving the budgets

were existent. If all feeder pigs in Tennessee were sold through the sales of 3,000 head capacity, the marketing charge could be reduced by $0.30 per pig. The facility owner would be receiving a 10 percent return on his investment and the additional income to farmers would be greater than $190,000 annually. Using the large (5,000 head capacity) sales the marketing charge could be reduced $0.24 per pig and the added revenue to farmers in Tennessee would be more than $155,000 annually.

It is hypothesized that 12 strategically located sales could handle all the feeder pigs presently sold through organized sales in Tennessee assuming the costs of transporting pigs to market did not vary significantly from present. Further study concerning the costs incurred by buyers of pigs from Tennessee feeder pig sales and the costs incurred by pig producers selling through the organized feeder pig sales is needed before the analysis of the organized feeder pig marketing system can be adequately completed. Research dealing with the costs incurred by other feeder pig marketing channels such as private contracts, tele-auctions, dealers, and direct sales would also aid the study of the organized selling of feeder pigs.

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APPENDIX

TABLE XXII

TABLE FOR SALE ACTIVITY TIMES

Time	Number Sales Performing Indicated Activity at Times Shown				
	Start Receiving Pigs	Stop Taking Pigs	Employees Take Lunch Break	Sale Begins	Sale Ends
5:01 - 6 a.m.	12				
6:01 - 7 a.m.	6				
7:01 - 8 a.m.	2				
8:01 - 9 a.m.					
9:01 - 10 a.m.					
10:01 - 11 a.m.		7	3		
11-01 - 12 a.m.		12	15		
12:01 - 1 p.m.		1	2	2	
1:01 - 2 p.m.				18	4
2:01 - 3 p.m.					14
3:01 - 4 p.m.					2
Mode Time	6 a.m.	12 noon	12 noon	1:30 p.m.	2:30 p.m.

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR SMALL, PRIVATELY OWNED FACILITIES

Revenue	Association	Facility Owner	
Sale commissions	$3,287.25	$4,917.59	
Total revenue			$8,204.84
Variable Costs			
Labor	$ 949.20	$2,235.78	
Advertising	806.33	0.00	
Utilities		465.33[a]	
Maintenance and repairs		230.00[a]	
Stamps[a]	104.00	35.67	
Other office supplies[a]	6.00	102.33	
Barn supplies		133.15[a]	
Other		26.67[a]	
Total variable costs	$1,865.53	$3,228.93	$5,094.46
Fixed Costs[b]			
Taxes, licenses, bonds		$ 167.40	
Insurance	$ 10.00	330.20	
Interest		400.95	
Depreciation		852.19	
Other		0.00	
Total fixed costs	$ 10.00	$1,750.74	$1,760.74
Total costs	$1,875.53	$4,979.67	$6,855.20
Net revenue	$1,411.72	$ -62.08	$1,349.64

[a]Information not available from two sales for this category.

[b]Information not available from one sale for this category.

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR SMALL, PUBLICLY OWNED FACILITIES

Revenue	Association	Facility Owner	
Sale commissions	$5,023.01	$6,063.37	
Total revenue			$6,063.37
Variable Costs			
Labor	$2,988.27	$ 0.00	
Advertising	1,441.45	0.00	
Utilities		321.60	
Maintenance and repairs		175.00	
Stamps	311.20	0.00	
Other office supplies	122.00	0.00	
Barn supplies	61.10	0.00	
Other	455.24	0.00	
Total variable costs	$5,379.26	$ 496.60	$5,865.86
Fixed Costs			
Taxes, licenses, bonds		(exempt)	
Insurance		$ 165.89	
Interest		518.40	
Depreciation		298.08	
Other		0.00	
Total fixed costs	$ 0.00	$ 982.37	$ 982.37
Total costs	$5,379.26	$1,478.97	$6,858.23
Net revenue	$ -356.25	$ -438.61	$ -794.86

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR SMALL, ASSOCIATION OWNED FACILITIES

Revenue		
Sale commissions	$9,531.60	
Total revenue		$9,531.60
Variable Costs		
Labor	$3,152.40	
Advertising	293.28	
Utilities	180.00	
Maintenance and repairs	180.00	
Stamps	456.00	
Other office supplies	240.00	
Barn supplies	0.00	
Other	0.00	
Total variable costs	$4,501.68	
Fixed Costs		
Taxes, licenses, bonds	$ 10.00	
Insurance	550.00	
Interest	1,150.00	
Depreciation	0.00	
Other	0.00	
Total fixed costs	$1,710.00	
Total costs		$6,211.68
Net revenue		$3,319.92

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR MEDIUM, PRIVATELY OWNED FACILITY

	Association	Facility Owner	
Revenue			
Sale commissions	$4,095.01	$13,289.96	
Total revenue			$17,384.97
Variable Costs			
Labor	$2,561.11	$ 9,273.14	
Advertising	820.28	0.00	
Utilities		1,594.25	
Maintenance and repairs		325.00	
Stamps	158.13	117.12	
Other office supplies	101.40	81.00	
Barn supplies		157.87[a]	
Other	23.38	362.03	
Total variable costs	$3,664.30	$11,910.41	$15,574.71
Fixed Costs[a]			
Taxes, licenses, bonds		$ 212.28	
Insurance		941.23	
Interest		305.00	
Depreciation	$ 18.75	891.37	
Other		0.00	
Total fixed costs	$ 18.75	$ 2,349.88	$ 2,368.63
Total costs	$3,683.05	$14,260.29	$17,943.34
Net revenue	$ 411.96	$ -970.33	$ -558.37

[a]Information from one sale not available for this category.

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR MEDIUM, ASSOCIATION OWNED FACILITIES

Revenue

Sale commissions	$17,710.55
Total revenue	$17,710.55

Variable Costs

Labor	$ 7,950.00
Advertising	1,049.94
Utilities	562.46
Maintenance and repairs	198.00
Stamps	200.00
Other office supplies	175.00
Barn supplies	15.00
Other	75.00
Total variable costs	$10,225.40

Fixed Costs

Taxes, licenses, bonds	$ 4.50
Insurance	354.75
Interest	0.00
Depreciation	507.00
Other	0.00
Total fixed costs	$ 866.25
Total costs	$11,091.65
Net revenue	$ 6,618.90

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR LARGE, PRIVATELY OWNED FACILITIES

Revenue	Association	Facility Owner	
Sale commissions	$5,924.93	$77,358.34	
Total revenue			$83,283.27
Variable Costs			
Labor	$1,675.00	$24,659.00	
Advertising	4,625.00	306.63	
Utilities		773.90	
Maintenance and repairs		547.73	
Stamps[a]	125.00	130.00	
Other office supplies	125.00	1,977.50	
Barn supplies		2,270.01[b]	
Other		2,921.45	
Total variable costs	$6,550.00	$33,586.22	$40,136.22
Fixed Costs			
Taxes, licenses, bonds		$ 1,664.00	
Insurance		1,231.00	
Interest		361.50	
Depreciation		3,150.00	
Other		150.00	
Total fixed costs	$ 0.00	$ 6,556.50	$ 6,556.50
Total costs	$6,550.00	$40,142.72	$46.692.72
Net revenue	$ -625.07	$37,215.62	$36,590.55

[a]Information not available from one sale for this category.

[b]Information not available from two sales for this category.

AVERAGE ANNUAL REVENUE, VARIABLE AND FIXED COSTS, AND NET REVENUE FOR LARGE, ASSOCIATION OWNED FACILITIES

Revenue		
Sale commissions	$44,922.51	
Total revenue		$44,922.51
Variable Costs		
Labor	$19,092.00	
Advertising	1,512.00	
Utilities	2,379.00	
Maintenance and repairs	300.00	
Stamps	650.00	
Other office supplies	1,792.00	
Barn supplies	638.25	
Other	3,189.33	
Total variable costs	$29,552.58	
Fixed Costs		
Taxes, licenses, bonds	$ 11.50	
Insurance	274.85	
Interest	0.00	
Depreciation	0.00	
Other	0.00	
Total fixed costs	$ 286.35	
Total costs		$29,838.93
Net revenue		$15,083.58

VITA

Joseph Arnold Brasher was born in Henderson, Tennessee, on November 5, 1949. He attended Madison County Schools and was graduated from Beech Bluff High School in May 1967. The following September he entered the University of Tennessee at Martin, and in June 1971, he received a Bachelor of Science degree in Agricultural Science. He was commissioned a Second Lieutenant in the United States Army Reserve in June of 1971.

In September 1971, he accepted a research assistantship at The University of Tennessee and began study toward a Master's degree. He received the Master of Science degree with a major in Agricultural Economics in March 1973.

He is married to the former Phyllis Anne Baker of Fruitland, Tennessee.