

Swine Farrowing Cooperatives

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Ralph E. Hepp
Extension Specialist and Associate Professor
Department of Agricultural Economics

A NEW BUSINESS CONCEPT

The traditional swine farm has been an integrated unit producing feed grains, feeder pigs, replacement gilts and slaughter-weight hogs. The integrated system still dominates production, but some farmers are moving toward specialization by farrowing and selling feeder pigs or finishing feeder pigs.

Regional and local feeder pig markets bring together farmers who are selling or purchasing feeder pigs, except those feeder pig producers who direct-market the pigs to a neighboring farmer for finishing. In spite of these interfarm and institutional markets, many farmers who want to finish pigs claim to have difficulty finding an adequate supply of quality pigs from local sources at reasonable prices. A new swine business concept, the farrowing cooperative, has developed to help solve these problems. Based on confinement technology, hired labor and management, farmer owners and purchased feed, farrowing cooperatives provide feeder pigs for the Midwest swine finisher.

A limited number of farrowing cooperatives have been organized in the North Central states. Because the businesses are relatively new in swine production, they are not proven business organizations which have operated through both the highs and the lows in hog prices. The cooperative swine farrowing unit is one of the few instances in which U.S. farmers produce cooperatively. The farmer's off-farm investment complements his independent family farm operation and provides a needed farm input producers control—an input provided at production costs.

This publication provides pork producers with a better understanding of the organizational and operational characteristics of farrowing cooperatives. Because the businesses are new and unique, limited research results analyzing existing operations are available. This publication describes farrowing cooperatives and analyzes production costs through farm management budgets.

Information for the report came from three sources—swine production data, published reports about existing farrowing cooperatives, and personal interviews with: representatives from credit institutions financing farrowing cooperatives, a construction firm building swine facilities, and a swine breeder supplying breeding stock to farrowing cooperatives; farmers who organized a farrowing cooperative; and the manager of a farrowing cooperative.

Farmers Invest in Farrowing Cooperatives

Farrowing cooperatives are organized by swine producers who want to finish feeder pigs, but do not want to farrow the pigs on their farms or purchase feeder pigs from other sources. A University of Nebraska study shows 89% of the investors in Nebraska farrowing cooperatives are farmers. Local agribusiness representatives purchase the remaining stock.² As a result of investing in the farrowing units, 44% of the farmer-owners had quit farrowing on their farms. Another 12% reported no change in farm farrowing, and 5% reported an increase in farm farrowings. Twenty-nine percent had not farrowed before they joined the farrowing cooperatives.

A Corporation Is Organized

Farrowing corporations are organized by 8-40 investors. Usually the number of shareholders determines the type of business organization used. Two business organizations are common—subchapter S corporation and cooperative. Even though a corporation organizational structure is used, the business usually operates under the cooperative principles of one shareholder, one vote on policy matters; operation at cost of production; and no dividends paid on invested capital.

Farmers invest in the corporation according to the number of feeder pigs desired with shares of stock issued to each investor in proportion to his investment. Land is purchased and new facilities are constructed. The corporation purchases breeding stock, hires a manager, and produces feeder pigs.

The business functions with a board of directors and officers elected by the shareholders. The board sets objectives for the corporation, establishes management policy, hires and supervises management, secures loans and provides annual audits to shareholders. These functions are carried out through the usual officers for a corporation such as board president, vice-president,

¹In this report when we refer to a general situation in which farmers invest in a farrowing business instead of buying pigs from an outside source, we use the term cooperative.

The terms cooperative and corporation also have more specific meanings which will be explained later in this report.

²Nun, Dennis L., *Nebraska Feeder Pig Farrowing Firms*, Unpublished research report, Department of Agricultural Economics, University of Nebraska-Lincoln, 1976.

treasurer and secretary. The treasurer usually pays the bills, deposits the income from the sale of feeder pigs and keeps the financial records.

Large Units in Operation

A recent University of Missouri study surveyed large-volume hog producers who subscribe to a monthly hog magazine and market 5,000 head of hogs or more annually.³ Of the 550 large-volume producers from which data were obtained, 22 were feeder pig farrowing corporations and 14 were feeder pig farrowing cooperatives. These units reported selling an average of 6,000 feeder pigs, 400 slaughter hogs and 60 breeding stock. The Nebraska units produced an average of 5,500 feeder pigs per year.

Farrowing corporations range in size from 400 to 1,200 sows with typical units housing 400 to 450 sows. Because labor and management is hired, the business has a practical minimum size in order to best use hired labor. A 400 to 450 sow operation would be run by two people—a full-time manager-operator plus one employee. A unit of this size under good management is capable of producing 5,000 to 7,500 feeder pigs per year. Production performance obviously varies from one operation to another and, therefore, the number of litters and feeder pigs produced varies.

Labor and Management Hired

The success of a farrowing corporation hinges on obtaining top production performance from the unit. The key to top production is hiring a good manager. Many of the 400-450 sow operations have as a sole source of labor and management a husband and wife team who operate the corporation on a labor contract. A typical contract calls for reimbursing the team with \$2.10 per feeder pig produced for a seven pig weaning average per litter, \$2.40 per feeder pig for an eight pig average and \$2.70 per feeder pig produced on a nine pig average.

Although the husband and wife team is very common in this size operation, larger units generally have a hired manager who also provides labor and one or more employees. A 650 sow operation usually requires three people to operate—a manager and two other employees. It is common to pay the manager a salary plus an incentive based on the number of pigs produced per litter.

Capital Requirements

A 400-450 sow operation would invest about \$400,000 or \$55-\$65 per feeder pig produced for land, buildings, equipment, breeding stock, and operating capital. Approximately 50% of the fixed capital and 100% of the operating capital can be borrowed with

the investors providing the remainder. A farmer's equity investment of \$22-\$26 per share of stock or \$22,000 to \$26,000 would be required if 1,000 feeder pigs are purchased per year. Debt capital is obtained from traditional credit sources such as commercial banks, insurance companies, or cooperative credit institutions. The Production Credit Association and local banks have financed many of the existing units. Term loans are established for the unit and debts repaid over a 7-year period, although some units have longer repayment periods for the facilities.

Shareholders Purchase the Feeder Pigs

Because continuous farrowing is practiced, feeder pigs are available to the farmer-investors each week. Feeder pigs are either delivered to the farm or picked up at the corporation by the farmer according to a delivery schedule determined by the board. Most are using a random selection process to determine who receives the feeder pigs first on a monthly or other rotational basis. Some farmer-feeders choose to receive feeder pigs only 3 to 4 times a year. Once a rotational basis is established, farmers receive their share of the feeder pigs when their name appears on the rotational schedule.

Price determination for feeder pigs varies from one operation to another. A common pricing method is a fixed dollar amount for 40 lb feeder pigs and price differentials for weight and distance to the owners' farm if the pigs are delivered. A base price is determined from cash operating costs and debt repayment per year and varied after a complete production cycle if costs have changed. Production cost plus debt repayment between \$20 and \$40 per feeder pig has been experienced by different cooperatives depending upon production performance, feed prices, and capital investment according to the Nebraska study.

An alternative price system is based on a factor of present market hog prices ranging from 1.8 to 3.0 depending upon feed costs and market hog prices. For example, with a 40 cent market hog price, a factor of two may be used. The mathematics works as follows:

$$\begin{array}{r} \$.40 \text{ market hog price} \\ \times 2 \text{ factor} \\ \hline \$.80 \text{ feeder pig price per lb} \\ \times 40 \text{ lb feeder pig weight} \\ \hline \$ 32 \text{ feeder pig price} \end{array}$$

Base price is determined for each group of feeder pigs and the factor varied if feed costs or market hog prices change appreciably.

³Rhodes, V. James and Grimes, Glenn, *Large Volume Hog Production in the U.S., A 1975 Survey*, SR 114 University of Missouri-Columbia, Agricultural Experiment Station.

Various policies have been determined by corporations about acceptance of feeder pigs. Most operate under the policy that investors must accept the pigs if they meet health and quality standards established by the board. Investors who do not need feeder pigs at the time their name appears on the schedule may sell their pigs to co-investors or others. If refusal of pigs is allowed, pigs are taken by the next person on the list or are distributed to producers in equal shares. In most operations, the scheduling problem for delivery of pigs has not been a major factor.

Production Performance Has Been Good

Technical production problems encountered are typical of those experienced by independent farmer-producers; namely, scours, breeding problems, scheduling problems, etc. Usual accepted technical practices are followed with the breeding stock and feeder pigs. Pigs are weaned at three to four weeks of age and grown to 35-45 lb before they are taken by farmer-feeders. Production performance has been reported to be good with most cooperatives selling 15-17 pigs per sow per year.

Alternative Forms of Business Organization

The subchapter S corporation is the most common business organization. It is called subchapter S because the corporation does not pay income taxes, rather its ordinary income, capital gains or losses and operating losses pass through to the shareholders to report the amounts on their own income tax returns according to the share ownership in the corporation. Investment tax credit also passes to the shareholders. Income tax considerations are important advantages to the subchapter S corporation business structure. In other respects, the subchapter S corporation is organized and operated under state statutes like any corporation.

In order for a corporation to qualify for subchapter S status it must have: 10 or fewer stockholders (up to 15 stockholders after the corporation has been a tax-option corporation for five consecutive years or if additional stockholders acquire their stock by inheritance), only one class of stock issued and outstanding, only individuals or estates as stockholders (also trusts under certain conditions), the consent of all stockholders for the election, and no more than 20% of gross receipts from investment income. Examples of investment income are: rents, royalties, interest, dividends or the sale of property.

The second business organization used is a cooperative. It usually has more than 10, but less than 40 investors. The cooperative has three basic principles distinguishing it from a regular corporation and is followed by the farrowing cooperatives.

1. Operations at cost. Savings are distributed or allocated in direct proportion to the patronage of each member. This is accomplished by pricing the feeder pigs on a per head basis according to the cost of the operation.
2. Democratic control by the members. This is usually accomplished by voting, one vote to a shareholder regardless of the number of shares owned.
3. Limited returns on invested capital. Farrowing corporations usually pay no dividends to the shareholders' capital investment. Under corporate law by some states and taxing status of IRS, dividends are limited to 8% or less in a bona fide cooperative.

Except for these variations, cooperatives operate much like a corporation. Cooperatives are subject to corporate income taxes unless exempt status is obtained from IRS. In this case, the cooperative income taxes are paid by each member according to patronage.

The Nebraska study showed 45% of the farrowing units organized as subchapter S corporations, 41% as cooperatives and 14% as other business forms. A regular taxpaying corporation or partnership are other alternatives.

Shareholders transfer the stock if they want to relinquish ownership in the corporation by sale, trade, or laws of inheritance. Some corporation by-laws restrict stock ownership to operating farmers and limit the proportion of stock any one investor may own. Buy and sell agreements often state the stock sale must be offered existing owners first before sale to others, and that present shareholders approve a sale to a new member. Value of the stock is set by the corporation or determined by market values at the time someone wants out of the corporation.

If the business is organized as a cooperative, the shares revert back to the cooperative or are reissued to a new member. The departing member or member's representative according to some state laws is entitled to receive the book value of the stock, but no more than its original issuing price.

Cooperative Pig Production Limited to Few Producers

Whether a pork producer should raise his own feeder pigs, purchase them from other producers, or cooperatively produce pigs in a farrowing business depends upon many factors including the farmer's objectives for the swine enterprise and the management and production situation of the farm. Farrow-finish swine enterprises continue to be the preferred production system by producers with competitive production performance and larger-sized enterprises.

Other farmers, however, are operating a smaller hog enterprise with obsolete or inadequate farrowing facilities and are faced with the alternatives of investing in farrowing facilities or purchasing feeder pigs. Whether capital investments are lower or profits higher by investing in on-farm facilities or pooling capital with other farmers in a farrowing cooperative depends upon each situation. A partial budget comparing these alternatives should be made by each farmer to answer the question.

Specialization of management and labor on the farm is possible by only finishing feeder pigs. If a farmer operates a small farrow-finish enterprise, he can specialize by discontinuing the farrowing and achieve greater efficiency in cost and labor utilization by marketing a larger number of fed hogs. He can purchase pigs from other farmers or produce cooperatively in an off-farm enterprise. If farmers do produce cooperatively, local farmers must be willing to invest in the joint venture, raise the necessary capital and credit and seek a qualified manager.

Advantages to the farmer of investing in a farrowing corporation over purchasing feeder pigs from other farmers include the following:

1. High quality feeder pigs can be produced in the corporation and delivered to the farmer-feeder on a scheduled basis.
2. Farmers have a regular source of feeder pigs and do not have to spend time purchasing feeder pigs.
3. Farmers have management decision-making with their neighbors over the feeder pig production business. Depending upon local conditions, pigs obtained from the farrowing corporation may be healthier than those from local market sources.
4. The properly managed farrowing corporation can produce feeder pigs at less cost.

Disadvantages were also listed:

1. Time is needed to organize a corporation, serve on the board of directors, supervise management, attend shareholder meetings, etc.
2. A farrowing corporation locks the farmer into hog production. Farmers who purchased feeder pigs from local sources may not buy feeder pigs during low hog prices. As a member of the farrowing corporation, the farmer receives feeder pigs every month or periodically during the year on a rotational basis from his business.
3. Feeder pig costs are higher during periods of high feed costs and low hog prices if the market price for feeder pigs is depressed.
4. Investment is needed in the farrowing business.

Budget for a 450 Sow Capacity Farrowing Corporation

The sample farrowing unit is organized by eight farmer-investors as a subchapter S corporation. Feeder pigs are purchased by the investors and finished on their family farms from corn produced in the cropping program. The corporation has an eight person board of directors with a president, vice president, secretary and treasurer. Each stockholder has one vote. Labor and management are contracted by a husband and wife team on a labor contract with a payment for labor and management according to the number of feeder pigs produced per litter.

Production Assumptions

Feeder pigs are produced in a total confinement feeder pig unit and replacement gilts and boars are purchased. Table 1 shows the production assumptions. Pigs are weaned at 3-4 weeks or about 12 to 14 lb and grown in a nursery until they reach 40 lb.

Table 1. Production assumptions for a 450 sow capacity farrowing corporation

Item	Production assumption	Annual results
Facilities capacity utilized	94%	425 sows
Pigs weaned per sow	16	6,800 pigs weaned
Mortality from weaning to 40 lb	2%	6,665 pigs sold
Sow culling rate	40%	170 sows culled
Mortality in the sow herd	.5%	168 sows sold
Gilts purchased		200 gilts
Gilt conception rate	85%	30 unbred gilts sold
Boar culling rate	50%	5 boars purchased and sold

Feed Requirements

A complete swine ration is purchased for the breeding herd and feeder pigs. Feed requirements by livestock class are shown in Table 2 and total 655 tons of feed in the business during the year.

Table 2. Feed requirements by livestock class for a 450 sow capacity farrowing corporation

Livestock Class	Animal numbers	Lb of feed per head	Tons of feed
Sows and gilts	425	2,000	425
Boars	10	2,400	12
Pigs—creep feed	6,800	15	51
Pigs—starter ration	6,665	50	167

Price Assumptions

Hog prices are based upon a \$40/cwt slaughter hog market. Feeder pigs are priced at estimated production costs plus debt repayment. Feed includes creep feed, breeding herd ration and starter for the pigs and is delivered to the farm.

Table 3. Price assumptions for 450 sow capacity farrowing corporation

Item	Unit	Price per unit
Non-breeding gilts	3 cwt	\$ 38
Sow — culled	4.25 cwt	34
Boars — culled	4.25 cwt	27
Replacement gilts	Head	180
Replacement boars	Head	500
Feeder pig — 40 lb.	Head	32
Feed	Ton	140

Capital Requirements

Confinement farrowing, breeding, gestation, and nursery facilities are built with slatted floor, underfloor manure storage and lagoon manure disposal. Equipment in the buildings includes ventilation system, heat, bulk bins for feed storage and feed distribution equipment.

Table 4. Capital requirements for a 450 sow capacity farrowing corporation

Item	Units	Cost per unit	Total cost
Farrowing facilities	90 crates	\$1,250	\$112,000
Breeding and gestation facilities	400 head	250	100,000
Nursery facilities	800 head	40	32,000
Office			4,000
Land leveling and lagoon			4,000
Manure disposal equipment			4,000
Well			2,000
Miscellaneous			2,000
Total for depreciation			\$260,000
Breeding Stock - gilts	500 head	180	90,000
Breeding stock - boars	10 head	500	5,000
Land	10 acres	1,000	10,000
Operating capital			50,000
			<u>\$415,000</u>

A total of \$415,000 is needed to establish the unit. If 50% of the fixed capital and 100% of the operating capital is borrowed, \$235,000 of debt capital would be needed. Each farmer-investor would need to provide \$22,500 in equity capital and furnish good financial statements to support his \$29,375 share of debt capital in order to receive 833 pigs from the farrowing corporation.

Operating Cost Assumptions

1. Herd health care \$10 per sow
2. Utilities \$14 per sow
3. Supplies \$ 6 per sow
4. Transportation and marketing for breeding stock \$.40 per cwt for hauling to market and .50 per cwt marketing cost
5. Operating credit \$50,000 at 9% interest rate
6. Labor contract \$2.40 per feeder pig weaned

Overhead Cost Assumptions

1. Depreciation—facilities at 10% per year of new cost and \$6,000 each year for the first 3½ years on the initial breeding stock.
2. Property taxes, insurance and repairs on facilities at 3.5% per year of new cost.
3. Loan on fixed assets—\$185,000 at 9% over a 7-year term.
4. Miscellaneous—\$1,000 for accounting fees, office expenses, etc.

Projected Income Statement

An income statement for the year the business is organized and the first 2 years of operation is shown in Table 5. Year 0 includes the planning and construction period plus the operating results until the first group of pigs is ready to be sold. An estimated \$26,000 of feeder pig inventory and the sale of unbred gilts from the initial breeding stock are shown.

Year 1 is the first complete year of operation with receipts and costs estimated at previously given quantities and values, except for feeder pig sales which have been reduced 5% due to all gilt farrowing during the start-up year. Feeder pigs are priced to investors at \$32 per head leaving an \$8,425 net margin for the business. The cost projections assume inflation rates per year for years 2 through 10 (Table 6) of 4% for feed, 5% for operating costs and 2% for overhead costs. The feeder pig price is held at \$32 per head during the 10 years.

Interest income is obtained because cash savings are retained and invested in savings accounts paying 6% per year. Income tax distributions are made for years the corporation has a loss (Year 0 and 9) and cash is distributed during profitable years for the investors to pay the income taxes on the corporation's earnings at an assumed 27% income tax rate for the investors. Net earnings are retained by the corporation. In addition to the net loss distribution, the investors have investment credit of approximately \$26,000 or \$3,250 for each investor during year 0 to claim on their individual in-

Table 5. Income statement for the year organized and two years of operation under good management for a 450 sow capacity farrowing corporation.

Item	Year		
	0	1	2
Receipts			
Feeder pigs	\$26,000	\$202,624	\$213,280
Sows	--	24,276	24,276
Unbred gilts	8,550	3,420	3,420
Boars	--	574	574
Replacement gilts	--	(36,000)	(36,000)
Replacement boars	--	(2,500)	(2,500)
Total	\$34,550	\$192,394	\$203,050
Feed	\$26,460	\$ 91,700	\$ 95,368
Operating Costs			
Health Care	1,225	4,250	4,463
Utilities	1,715	5,950	6,247
Supplies	735	2,550	2,678
Hauling & marketing	205	765	803
Interest - operating	2,000	4,500	3,300
Labor	10,000	15,504	17,136
Total	\$15,880	\$ 33,519	\$ 34,627
Overhead Costs			
Depreciation	\$16,000	\$ 32,000	\$ 32,000
Facilities, misc.	4,500	9,100	9,555
Interest - loan	10,000	16,650	14,222
Miscellaneous	1,710	1,000	1,000
Total	\$32,210	\$ 58,750	\$ 56,777
Net Margin	(\$40,000)	\$ 8,425	\$ 16,278



Table 6. Projected income statement for the year organized and 10 years of operation under good management for a 450 sow capacity farrowing corporation

Item	Year										
	0	1	2	3	4	5	6	7	8	9	10
Thousands of dollars											
Receipts											
Sales	\$ 8	\$192	\$203	\$203	\$203	\$203	\$203	\$203	\$203	\$203	\$203
Pig Inventory	26	--	--	--	--	--	--	--	--	--	--
Costs											
Feed	26	92	95	99	103	107	112	116	121	125	131
Operating, except interest	14	29	31	33	35	36	38	40	42	44	46
Interest, operating	2	4	4	2	1	--	--	--	--	--	--
Overhead, except interest	22	42	43	43	38	38	38	40	41	42	30
Interest, term loan	10	17	14	12	9	7	5	2	--	--	--
Total Costs	74	184	187	189	186	188	194	198	204	211	207
Net Margin from Operation	(40)	8	16	14	17	15	9	5	(1)	(8)	(4)
Interest Income	--	--	--	--	--	--	1	1	2	3	5
Total Earnings	(40)	8	16	14	17	15	10	6	1	(5)	1
Income Tax Distribution	(40)	2	4	4	5	4	3	2	--	(5)	--
Net Earnings	--	\$ 6	\$12	\$10	\$12	\$11	\$ 7	\$ 4	\$ 1	--	\$ 1

Table 7. Cash flow statement for a 450 sow capacity farrowing corporation

Year	Net cash sales	Cash operating overhead costs	Term loan payment	Cash distributed to investors for income taxes	Interest income	Net cash	Operating loan balance	Savings account balance
Thousands of dollars								
0	\$ 8	\$(58)	--	--	--	\$(50)	\$50	--
1	192	(152)	\$(27)	\$(2)	--	11	39	--
2	203	(155)	(27)	(4)	--	17	22	--
3	203	(157)	(27)	(4)	--	15	7	--
4	203	(160)	(27)	(5)	--	11	--	\$ 4
5	203	(162)	(27)	(4)	--	10	--	14
6	203	(168)	(27)	(3)	\$1	6	--	20
7	203	(172)	(23)	(2)	1	7	--	27
8	203	(178)	--	--	2	27	--	54
9	203	(185)	--	--	3	21	--	75
10	203	(194)	--	--	5	14	--	89

Table 8. Projected net worth statement for the year organized and 10 years of operation under good management for a 450 sow capacity farrowing corporation, end-of-year values

Item	Year											
	0	1	2	3	4	5	6	7	8	9	10	
Thousands of dollars												
Assets												
Cash	--	--	--	--	\$ 4	\$ 14	\$ 20	\$ 27	\$ 54	\$ 75	\$ 89	
Feeder pig inventory	\$ 26	\$ 26	\$ 26	\$ 26	26	26	26	26	26	26	26	
Breeding stock inventory												
Less depreciation	92	86	80	74	74	74	74	74	74	74	74	
Buildings and equipment												
Less depreciation	247	221	195	169	143	117	91	65	39	13	--	
Land	10	10	10	10	10	10	10	10	10	10	10	
Total Assets	375	343	311	279	257	241	221	202	203	198	199	
Liabilities												
Operating loan	50	39	22	7	--	--	--	--	--	--	--	
Term loan	185	158	131	104	77	50	23					
Total Liabilities	235	197	153	111	77	50	23					
Equity												
Initial stock investment	180	180	180	180	180	180	180	180	180	180	180	
Income tax loss distribution	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(45)	(45)	
Retained earnings	--	6	18	28	40	51	58	62	63	63	64	
Total equity	140	146	158	168	180	191	198	202	203	198	199	
Liabilities and Total Equity	\$375	\$343	\$311	\$279	\$257	\$241	\$221	\$202	\$203	\$198	\$199	

come tax return as an offset against other personal income.

Table 7 shows a cash flow statement for the corporation during the 11 year period. Net cash is used to pay the operating loan and the excess accumulated in a corporation savings account.

Projected Net Worth Statement

Table 8 shows an 11 year projected net worth statement for the farrowing corporation. With pigs priced at \$32 per head and given the production and price assumptions, the corporation asset value decreases, debts are paid in 7 years and equity increases. Table 9 gives the book value for the corporation equity and the share ownership each investor by years.

Table 9. Book value of equity for a 450 sow capacity farrowing corporation

Year	Book value of equity	
	Corporation	Each investor
0	\$140,000	\$17,500
1	146,000	18,250
2	158,000	19,750
3	168,000	21,000
4	180,000	22,500
5	191,000	23,875
6	198,000	24,750
7	202,000	25,250
8	203,000	25,375
9	198,000	24,750
10	199,000	24,875

Charge Per Feeder Pig

The corporation can have a constant charge for feeder pigs sold (i.e., \$32 in previous budgets) or calculate each year cash cost of production plus debt payment. If the latter alternative is chosen, the previous projected income and net worth statements are not applicable. Table 10 shows the charge per feeder pig per year to cover cash costs of production and debt repayment if this alternative is chosen. The operating loan is repaid over a 5 year period. The charge per feeder pig ranges from \$28 to \$32 per year to cover all costs and commitments for the operation over the 10 year period.

Cost Analysis

Management Factors

Good management performance assumed in the previous budgets results in a given cost function for the feeder pigs produced. If different assumptions are assumed for key management factors, changes occur in production costs. The most cost sensitive management factor is the number of pigs weaned per sow per year.

The base budget assumed 16 pigs are weaned per head per year. Table 11 shows the change in feeder pig production costs as pigs weaned per sow per year varies from 12 to 18.

Table 10. Charge per feeder pig per year to pay cash production costs and debt repayment for a 450 sow capacity farrowing corporation

Year	Cash operating and overhead costs	Breeding stock purchased less sales	Loan repayment	Total cash outlay	Number of pigs sold	Cost per pig sold
Thousands of dollars						
1	152	10	37	199	6,332	\$31.43
2	155	10	37	202	6,665	30.31
3	158	10	37	205	6,665	30.75
4	161	10	37	208	6,665	31.21
5	163	10	37	210	6,665	31.50
6	168	10	27	205	6,665	30.75
7	172	10	23	205	6,665	30.75
8	178	10	--	188	6,665	28.20
9	185	10	--	195	6,665	29.25
10	194	10	--	204	6,665	30.60

Table 11. Change in cost per pig from the base budget for the number of pigs weaned per sow per year.

Pigs weaned per sow per year	Change in production cost per pig
12	\$7.70
13	5.30
14	3.27
15	1.50
16	0
17	-1.33
18	-2.49

If a poor weaning average is obtained, the manager needs to review technical production practices followed, quality of the breeding stock, disease control, etc.

Four additional management factor cost implications are shown in Fig. 1. Production performance assumptions underlying the management level for each selected management factor are given in Table 12. Various management practices will influence the outcome for each management factor considered.

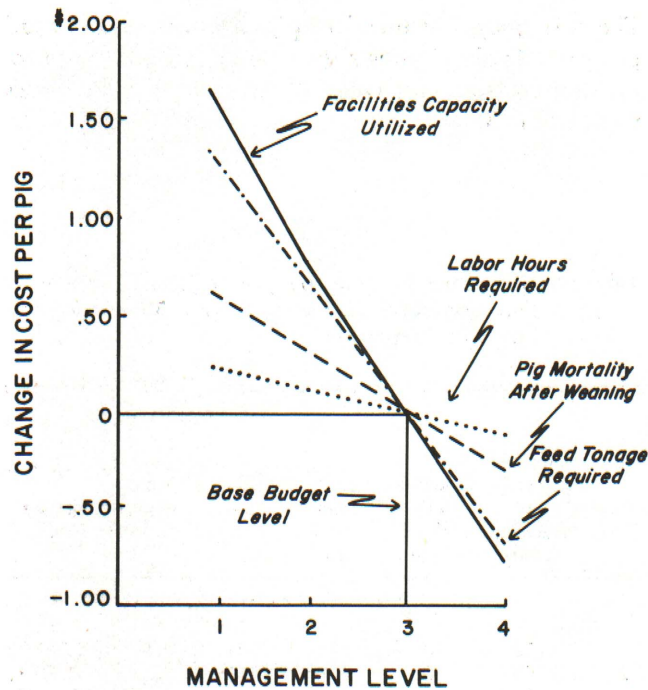


Figure 1

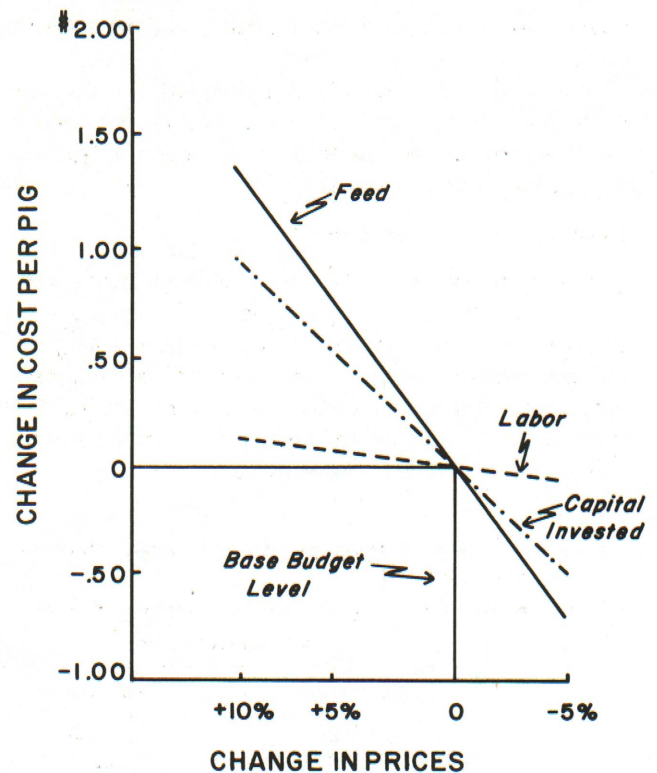


Figure 2

Table 12. Production assumptions for selected management factors

Management factor	Management level			
	1	2	3	4
	Percent			
Facilities capacity utilized	83	89	94	100
Pig mortality after weaning	4	3	2	1
Change in feed tonnage required	10	5	0	-5
Change in labor hours required	20	10	0	-10

Prices

Feed, labor and capital invested cost implications are shown in Fig. 2 for price changes varying from -5% to 10% increase. Pig costs change for each input in relation to the selected input cost as a percent of total cost.

Raised Replacement Gilts

The Nebraska survey showed that approximately 8% of Nebraska farrowing corporations raised replacement gilts instead of purchasing gilts at breeding age. Table 13 estimates production costs to raise replacement gilts for a 450 sow capacity farrowing corporation.

Even though production costs are lower than the budgeted \$180 cost for purchased gilts or a savings of about \$1.54 per feeder pig sold, many factors such as gilt quality, management and labor available to care for raised gilts, etc. must be considered before raising replacement gilts. If gilts are purchased, an additional pig weaned per sow and gilt per year, or a 3-4% finishing feed conversion improvement, would be needed to justify the additional cost.

Table 13. Production costs to raise replacement gilts to breeding age for a 450 sow capacity farrowing corporation

Item	Quantity or number	Price per unit	Total	Per head 200 head
Feeder pigs	203 at 40 lb	\$32/hd	\$ 6,496	\$32.48
Feed	1,194 lb × 200 hd	\$140/ton	16,716	83.58
Operating costs				
Health care		\$.40/hd	80	
Utilities		.60/hd	120	
Supplies		.60/hd	120	
Interest-operating	\$120 for 6 months	9%	5	
Labor	1 hr per hd	\$6/hr	120	
Total			445	\$ 2.23
Overhead costs				
Depreciation	\$90/hd for 6 months	10%	900	
Facilities, misc.		3.5%	315	
Interest loan	½ facilities	9%	405	
Miscellaneous		\$.50/hd	100	
Total			1,720	8.60
Equity opportunity costs	½ facilities	15%	338	1.69
Total costs			\$25,715	\$128.58

SUMMARY AND CONCLUSIONS

A limited number of farrowing corporations have been organized by farmers to supply the investor with feeder pigs. Management budgets demonstrate that pigs can be produced for \$32 over a 10 year period if good production performance is assumed. Debt capital of 50-60% of the total capital investment can be repaid over 7 years and the investor's equity contribution at book value can be maintained after 10 years at approximately the initial investment.

Management is the key to the success of farrowing corporations. If the poorest production performance and highest prices are assumed, costs can increase \$15 per head above the \$32 budgeted. Pigs weaned per sow per year and feed prices are the most sensitive variables in the budgets. Finding and keeping an effective manager appears to be the most important task for the investor.

Many firms in the swine industry promote farrowing corporations and help farmers establish the business. Although help is available, leadership by farmer-investors is important to obtain the operational results needed to keep the business cost competitive. Corporation swine farrowing units are new tools for farmers in obtaining feeder pigs and noteworthy because in few cases do U.S. farmers produce cooperatively.



