FEASIBILITY ANALYSIS OF A COMMERCIAL SWINE OPERATION

by

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1.0 FINDINGS AND RECOMMENDATIONS

1.1 Financial Viability of Recommended Alternative

The financial viability of the project depends upon the construction of the facility at a reasonable cost, breeding programs to enhance feed efficiency, sound animal husbandry practices for marketing large litters to establish favorable operating margins and initial entry into the market when the hog cycle is in an upswing. At the locations considered, there is little opportunity for reduction of total annual feed grain costs by purchasing at lower harvest prices and storage until fed, as the storage facility construction costs and increased capital annual working capital requirements exceed the gain in feeding margins.

1.2 Relative Advantage of Alternate Locations

The location of a commercial swine operation may provide the producer with a competitive advantage and greatly enhance his operating margins. The alternative locations considered include Kansas, Alabama, Texas, Nebraska, Iowa and Indiana.

Kansas has a net advantage in the feeding margin of milo over all other states considered except Nebraska. Nebraska milo is only 20 percent of that state's total feed grain production, whereas milo is 65 percent of total Kansas feed grain production. Kansas milo is favorably priced in relation to Nebraska corn. Soybean oil meal is cheaper in Kansas than in any other of the states considered. Historically, Kansas producers have marketed larger litters than the corn belt states.

The market price received by producers is higher in Kansas when compared with the other states, with the exception of Indiana.

Kansas swine producers have a net operating margin over all other states when the combined factors are considered.

1.3 Relative Importance of the Hog Cycle

The price of hogs fluctuates with the volume of hogs marketed. This fluctuation is known as the hog cycle and is caused by large numbers of producers increasing or decreasing production and the time lag required for them to make the production adjustments.

Individual producers have no control over the cycle. However, the project management may use the cycle to a financial advantage by entering the market when the hog cycle is in an upswing in 1973.

1.4 Enhancing Feasibility Through Reduction of Estimated Capital Costs

The feasibility of the project is enhanced by reduction in the estimated capital cost of the physical facility.

The impact of the increased construction costs of a contractor-constructed, environmental-controlled finishing facility is not offset fully by lower labor costs when compared to the producer-constructed, open-lot facility.

Capital costs may be lowered approximately \$45,000 by continuous farrowing rather than a 6-times-per-year farrowing program. The average savings of 10 cents per hundredweight of milo does not merit construction of a \$92,000 grain storage facility.

1.5 Summary of Findings and Recommendations

The most promising alternative considered for a commercial hog production is a 600-sow continuous farrow-to-market operation located in Kansas. This operation would have a producer-constructed open-lot finishing facility and contractor-constructed farrowing and nursery houses. The economic potential of the project is greatly enhanced if the facility is constructed during the summer

and fall of 1972 and in full production by May, 1973.

Prior to actual investment in this project, financial investors and management must formulate a financial plan for project implementation. This plan should include:

- A. Proposed equity investment by source of funds. 1
- B. Proposed sources, schedule and terms of loans for meeting balance of capital requirements.
 - C. Projected cash flow by sector under proposed financing plan.
 - D. Projected schedules of depreciation, interest and taxes.
 - E. Proforma balance sheets and operating statements.
 - F. Proforms source and applications of funds.
- G. Summary of financial plan and recommendations for implementation.

Richard Phillips, <u>Feasibility Analysis for Agricultural Projects</u>, Ministry of Agriculture and Forestry, Republic of Korea, United States Agency for International Development, Agri Division, Dunlap and Associates, Inc., Seoul, Korea, 1970.

2.0 PURPOSE AND NATURE OF STUDY

This is a detailed study of the technical and economic feasibility of a commercial swine farrow-to-market operation. The study was designed to:

- A. Establish the personnel, equipment, facilities and feed requirements.
 - B. Estimate production costs and product prices.
 - C. Assemble investment, revenue and operating cost data.
 - D. Conduct analysis of key facility alternatives.
- E. Fit secular trend, annual and monthly hog cycle patterns and project hog prices and revenue and operating margins.
- F. Determine annual fluctuations in the cost of milo inputs and the effect on operating margins.
- G. Develop feed procurement costs and estimate hog price differences at alternate site locations.
- H. Establish the effects of hog prices, feed efficiency, grain prices and litter size on net revenue.
- I. Determine the relative economic feasibility of vaccination for T.G.E. vs. herd loss.
- J. Establish the differentials in income produced by herd lease, internal replacement and outside purchase options.
- K. Estimate the effects of alternate start up years, planning horizons and shifting in and out of production at high and low hog prices.
 - L. Evaluate the economic feasibility of marketing feeder pigs.
 - M. Establish at least one feasible alternative.

- N. Assemble final estimates on capital costs and investment requirements, together with the development and replacement schedule to meet projected production volume requirements.
- O. Conduct computer analyses of alternatives and select the most feasible alternative.
- P. Summarize financial requirements and develop proforma financial statements for the recommended alternative.

It is intended that the completed report will be used by prospective investors as a guideline in deciding whether or not to proceed with this type of project and as a useful reference for operational planning and performance.

2.1 Methodology

A combination of statistical, mathematical and economic analysis is used in conjunction with current swine husbandry practices to complete the various steps of the feasibility study. A brief description of the methodology follows:

- A. Projected hog prices were estimated by isolating the secular trend and determining annual and monthly fluctuations from the secular trend and developing a price projection mode (based on historical patterns).
- B. Projected monthly milo prices were developed from historical patterns in annual average prices and monthly deviations from the average price.
- C. Location analysis was made by determining feed costs and hog price differentials by state and the resulting effect on operating

margins for the commerical hog operation.

- D. Projected rates of return and economic feasibility of alternatives were obtained by fitting mathematical time-flow equations to the projected schedules of investment, operating cost and net revenue.
- E. Proforma financial statements under the recommended alternative were developed by applying standard accounting and budgeting techniques to the figures developed in the rate of return analysis.

2.2 Sources of Data

Several sources have been utilized for the various kinds of data needed in the study.

- A. State data on prices of feed grains, soybean oil meal and market hogs were taken from periodical publications of the U.S. Department of Agriculture.
- B. The estimated capital costs, life to replacement and repair and maintenance costs for facility and equipment were developed from information obtained from Mr. Don Knight and Mr. Earl Beck, representatives for commercial agricultural structure and feed companies, respectively.
- C. The estimated swine production performance, feed efficiency, labor requirements and operating costs were developed from information obtained from Dr. Robert H. Hines, Associate Professor of Animal Science, Kansas State University, and Mr. Wendell Moyer, Extension Swine Specialist, Kansas State University, and from applicable publications from Land Grant Universities.

3.0 LOCATION ANALYSIS

3.1 Production Trends

The production of market hogs is slowly increasing with cyclic fluctuations which are discussed later in Chapter 5. This upward trend is evident from historical figures shown in the upper half of Table 5-4.

Iowa will continue to be the center of U. S. swine production as indicated by the forecasted 60.52 billion pounds in 1980. The corn belt area is expected to show a larger percentage increase in swine production than the states in the southeastern and southwestern United States.

3.2 Competitive Position

The major factor in the historically heavy concentration of swine production in the corn belt states is the significant advantage in corn prices and the surplus of grain relative to the states located south of the corn belt (Table 3-1).

However the development of a milo belt has presented some advantages for the milo producing states. The production of milo and corn is exhibited in Table 3-1. The small production of milo in Indiana, Iowa, and Alabama eliminates it as a significant feed source in those states. Corn is not a major feed grain in Texas. In the other states considered, both milo and corn are produced in significant quantities.

Milo prices are cheaper than corn in every state considered. In addition, the cost of producing 220 pounds of pork with milo is less in every state considered. Feed grain cost per pig was based on 3.5 feed efficiency 2 or price of grain x 642 pounds corn and 662 pounds milo. The

²Derived from: (a) Swine Industry Day, 1968, Kansas State University, pp. 41,45,49,50; (b) Swine Industry Day, 1970, Kansas State University, p. 9; and (c) Swine Industry Day, 1971, Kansas State University, pp. 12,18.

larger quantity of milo was used as it is generally accepted among animal scientists that milo has 97% of the feeding value of corn. Milo is the most advantageous feed source in Kansas, both from the standpoint of price (\$.31/cwt., less than corn over the past five years) and availability.

Price comparisons of the most available feed grain source are presented in Table 3-2. Nebraska and Kansas milo compare favorably to feed grain sources of all other states (Table 3-3). Indiana and Iowa corn costs per pig are favorable to Nebraska corn but disadvantaged to milo.

Hog prices are generally higher in Indiana, followed by Kansas, then Iowa, Nebraska, Texas and finally Alabama (Table 3-5). The total gross revenue per 215 pound market hog is shown in Table 3-6. Indiana producers received an average of 64¢ per 215 pound market hog more than Kansas producers during the 1960-1970 period. The difference between the 220 pound figure used to compute feed costs and the 215 pound figure used for market revenue is the shrink incurred during transportation to market.

The net feeding margin advantages are shown in Table 3-7. Nebraska has an advantage in milo, its secondary feed grain, over all others; however, Kansas generally has the advantage in its primary feed grain milo over all others including Nebraska corn. In addition, Kansas has an advantage over the corn belt states in lower costs of soybean oil meal. This advantage ranges from 44¢ per pig in 1966 to 23¢ per pig in 1971 (Table 3-8). The figures in this table are based on 110 pounds soybean oil meal per 220 pound pig produced.

Kansas swine producers during the 1969-1971 period produced more pigs

 $^{^{3}}$ Derived from 1968 Swine Industry Day, Kansas State University, p. 41.

per litter than the other states as shown in Table 3-9. The increase of litter size lowers production costs by approximately 40¢ per hundred weight. The full impact of litter size will be discussed in Chapter 6.

In conclusion, Kansas swine producers have a favorable competitive position when the combined effects of feed grain prices, soybean meal prices, market hog prices and conditions for larger litter size are considered.

Table 3-1 Feed Grain Production (In Million Bushels)*

	Corn	Milo	Total Feed Grain	
Indiana				
1969	950	1	951	
1970	744	1	745	
1971	1,022	2	1,024	
Iowa		3		
1969	932	3	935	
1970	859	2	861	
1971	1,167	9	1,176	
Nebraska				
1969	429	118	547	
1970	367	76	443	
1971	465	117	582	
Kansas				
1969	91	182	273	
1970	79	145	224	
1971	110	219	319	
Alabama				
1969	17	1	18	
1970	12	1	13	
1971	25	2	27	
Texas				
1969	25	309	334	
1970	32	329	361	
1971	33	330	363	
United State	es			
1969	4,582	747	5,329	
1970	4,109	697	4,806	
1971	5,399	892	6,291	

Source: Crop Production, U.S.D.A.

^{*1971 (}indicated)

Table 3-2

Annual Average Feed Grain Price Per Hundred Weight

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Ind. Corn	1.82	1.86	1.89	2.02	1.89	2.28	1.82	1.82		2.50	
	1.93	1.95	1.80	1.98	1.89	2.21	1.82	1.83	1.89	2.33	
	1.64	1.79	1.61	1.79	1.61	1,75	1,61	1.55	1.69	1.89	2.04
	1.68	1.7	e f	. 87	1.71	1.82	1.70	1.57	1.74	1.96	2.14
Ala. Corn	2.07	2.21	2.21	2.25	2.21	2.63	2.07	2.07		2.82	
Texas Milo Neb. Corn	1.79 1.96	1.87	1.79	1.88 2.14	1.82 2.04	1.84 2.21	1.80	1.67	1.89	2.02	2.41
					Table 3-3	en					
		662 lbs.	Fee Milo, 6	Feed Grain, 642 lbs.	Cost Per Corn Per	Market 220 lb.	Hog Hog (In	. Dollars)	~		
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
•	1	6				10.45	1	1			
Iowa Corn	12.32	12,52	11.94	12.71	12,13	14.04	11.68	11.74	,	16.95	
	10.85	11.84	10,66		10.65	11.58	10.72		11.18	12.51	
		11.32	10.72		11,32	12.05	11.25			12.97	14.16
Ala. Corn		14.19	14.19		14.19	16.88	13.28			18,10	
S		12.38	11.85		12.05	12.18	11.91			13.37	
Neb. Corn	•	12.71	12.52	•	13.09	14.19	12.00	•	12,13	14.63	15.47

Table 3-4

Feed Grain Cost Difference Per Market Hog (In Dollars)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Ind. Corn	.56	.62	1.41	.59	.81	2.59	.43	1.29	Ç	3.08	
	1.20	.52	7.77 06	. 80	67		. 53	1.35 13	.93	1.98	99
Kan. Milo Ala. Corn	2.18	2.87	3.47	2.07	Base 2.87	ഗ	2.03	2.89		5.13	13-11
Texas Milo Neb. Corn	.73	1.06	1.13	.06	.73	.13	.66	.66	.62	.40	1.31
					Table 3-5	ý					
			Av	Average Hog	Pric	Per State	ite .				
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Indiana	16.90	16.60	15.10	15.10	21.00	23.40	19.20	18.80		22.80	
Iowa	16.50	16.20	14.80	14.60	20.60	22.60	18.70	18.70	22.20	22.60	17 00
Kansas	16.60	16.40	15.00	14.80	21.20	22.50	18.90	18,30	22.10	22.30	17.30
Alabama Texas	16.40	16.20	14.80	14.60	19.40	22.40	18.30	17.00	20.80	22.20	
		25.04	07.07		• 1						

Table 3-6

Price Advantage Per 215 lb. Market Hog

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Indiana Iowa Nebraska Kansas	.64	.43	.21	.64	43 -1.29 -1.72 Base	1.94 .21 State	.64	1.07	.21	1.07	64
Alabama Texas	43	43	43	43	-3.87	21	1.29	-1.29	-2.79	21	
					Table 3-7	7					
	Net 1	Net Revenue Per Market Hog	er State log Price	Difference Difference	E	eed Grain (Feed Grain	Cost and Cost Di	Cost and Hog Rev Cost Difference	enue)		
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Indiana Iowa	.08	19 -1.63	-1.20	.05	-1.24	65 -1.93	.21	22	41	-2.01	
(M) Nebraska Kansas	90.	-1.16	37	.37	-1.05 Base	.47 State	-, 33	. 34	.54	94.	.02
Alabama Texas	-2.61 -1.16	-3.30 -1.27	-3.90 92	-2.50	-6.74	-5.04	-3.32	-4.18 87		-5.34	
(C) Nebraska	-1.94	-2.03	-2.23	-1.79	-3.49	-2.17	-1.61	-1.96	41	-1.66	-1.95

Table 3-8

Annual Average Soybean Oil Meal Price Per Cwt. (In Dollars)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Kansas Nebraska	4.10 4.48	4.19 4.54	4.50	4.50 4.82	4.51	5.06	4.99	4.93 5.18	4.92	5.31	5.36
		Kans	as Soybe	an Oil N	Kansas Soybean Oil Meal Advantage Per Market Hog 110 lbs. Per 220 lb. Pig	intage Pe 116. Pig	r Market	Hog			ii ii
×	•	*	0	.35	.42	77.	.31	.27	. 26	. 29	.23
		(нс	Kanse	is Net Ac Feed Gr	Kansas Net Advantage vs. Nebraska (Hog Price, Feed Grain Cost, Soybean Oil Meal)	vs. Nebr	aska n Oil Me	a1)			
Kan. Milo vs. Neb. Milo	+.36	+1.55	+.77	02	02 +1.47	03	+.64	07	28	17	+.21
vs. Neb. Corn	+2,36	+2.43	+2.63	+2.14	+3.91	+2.61	+1.92	+2.23	+.67	+1.95	+2.18

Source: Tables 3-2 through 3-8 were derived from Agricultural Prices, U.S.D.A., 1961-1971.

Table 3-9

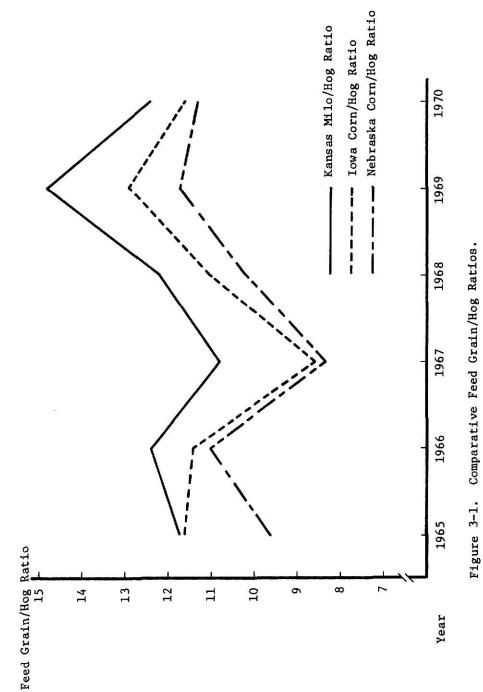
Average Number of Pigs Per Litter Weaned

Period	December-May	Farrowing	June-Novembe:	r Farrowing
Year	1970	1971	1969	1970
Indiana	7.44	7.30	7.68	7.41
Iowa	7.34	7.01	7.17	7.05
Nebraska	7.37	7.29	7.44	7.01
Kansas	7.71	7.55	7.68	7.60
Alabama	7.40	7.40	7.30	7.50
Texas	7.30	7.30	7.40	7.50

Source: Hogs and Pigs, U.S.D.A., June 1971.

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Source: Agricultural Prices, U.S.D.A., 1965-1970.

4.0 SEASONAL FEED PRICES

4.1 Milo Seasonal Price Variation

Kansas producers enjoy a relative competitive advantage in feed grain prices. These feed grain prices fluctuate considerably as evidenced by lower prices during the harvest season, October and November, and higher prices later in the crop year, especially during the summer months June, July and August.

Predictable annual cycles are absent from milo price patterns.

However, there is an upward trend in milo prices in Kansas (Table 3-2).

Seasonal price patterns for milo were computed by subtracting the actual monthly price from the annual average price for each year. The annual average was computed for a September through August year instead of a calendar year to reflect the volume of each crop year separately. The factors shown in Table 4-1 are based on a 12 year average (1960-1971) for each month. The actual price was used rather than a percentage index to reflect the actual magnitude of the monthly price change within a given crop year.

The impact of these variations is more apparent when considering the monthly cash flow output for milo involved for feeding the pigs produced by 600 sows. The variation involved is almost a thousand dollars, from \$10,049 in October to \$11,032 in July, based on an annual average price of \$2.00/cwt.

The moving annual average milo price over the 12 year period indicates a projected average price for 1971 of \$1.80/cwt. However, for this study the value of milo was conservatively placed at \$2.00/cwt. The full impact of milo prices may be appreciated by observing the change in IRR produced by a

Table 4-1

Average Monthly Variation in Milo Prices in Cents/cwt.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1960 1961 1962 1963	2 -10 6 -6	-5 -17 -10 -11	-7 -19 -16 -13	-4 -16 -4 -10	-2 -9 -1 -5	0 -4 -1 0	1 -1 1 2	4 -1 0 4	4 7 1 5	4 17 2 8	3 23 4 11	3 26 2 10
1964 1965 1966 1967	-3 -12 5 -6	-8 -8 -10 -13	-7 -5 -10 -13	-5 -2 -7 -7	-3 1 -5 -3	-1 2 -1 -2	-1 3 -2 2	0 4 -1 4	4 5 -2 6	7 6 0 8	8 5 10 9	11 2 19 -2
1968 1969 1970 1971	7 -15 2 -12	-10 -8 3 -15	-10 -8 3 -15	-7 -5 0 -11	-4 0 -3 -8	5 2 1 -3	8 3 3 -1	8 4 -1 +1	8 6 -3 +11	7 7 -5 +23	3 6 -7 +25	-9 13 -1
Cents Vari- ation	-3,50-	10.25-	10.00	-6.50	-3.50	50	1.50	2.16	4.30	+7.00	8.30	6.70

change of 20¢ per hundred weight in milo prices (Table 4-2 and Analysis 1, 12, 13).

Table 4-2

Effect of Milo Prices on Return to Capital

Price of Milo/cwt.	Annual Return to Capital
\$1.80	19.09%
2.00	15.69
2.20	12.54

4.2 Protein Supplements

Soybean oil meal was considered to be the primary source of protein for swine producers in Kansas, as the other competitively priced plant protein is cottonseed oil meal. The presence of gossypol in cottonseed oil meal, according to Morrison's <u>Feeds and Feeding</u>, severely limits its applicability to commercial swine production, especially under self-feeding conditions.

Soybean il meal is available in Kansas at a favorable price as discussed in Chap r 3. Seasonal fluctuations in soybean oil meal prices are not as predictable as feed grain prices, and exhibit more variation within any given month over a period of years. For this reason, no seasonal adjustment was made in the price of soybean oil meal. However, it should be noted that generally the prices from January through June are lower than the prices between July and December. For this study the average price of protein supplement was taken at \$6.00 per hundred weight.

⁴Frank B. Morrison, <u>Feeds and Feeding</u>, Morrison Publishing Co., Clinton, Iowa, 1959, p. 477.

5.0 MARKET HOG PRICE PROJECTION

5.1 Effect of Market Hog Prices

The market price of hogs is one of the most critical factors in determining the feasibility of this project. This is shown by the change in the annual return to capital by different hog prices. Altering the average price by \$1.00 changes the internal rate of return by approximately 5 percent. This is shown in Table 5-1.

Table 5-1
Price Effect on IRR

Price Deviation from Standard Annual Cyclic Price	Annual Return to Capital
- \$2.00	5.10%
- \$1.00	10.49%
- \$0.50	13.52%
Standard Annual Cyclic Prices	15.69%
+ \$0.50	18.07%
+ \$1.00	20.19%
+ \$2.00	24.62%

Source: Analysis of 600 sow farrow to market operation, C. R. Rayl, 1-7.

5.2 Historical Price and Volume Fluctuations

The large fluctuations in market hog prices shown in Table 5-2 are the result of sufficient numbers of producers moving in and out of hog production at the wrong time, magnifying the supply and demand inbalance. The historic marketings for 1960 through 1970 as shown in the top half of Table 5-4 display the volume fluctuations resulting from both the long term

secular trend and the hog cycle.

The effects of the hog cycle are built into the volume projection model used to fit the trends and develop the state by state projections shown in the lower portion of Table 5-4. The model is linear (exponent of 1.0) except for the cycle factors. The B values at the bottom of the table represent the average annual increase (or decrease) in millions of pounds of liveweight marketed before cycle adjustments.

The impact of the cyclic production patterns on market hog prices can be noted by comparing average annual prices and U. S. production in Table 5-3. Some imperfection may be noted in the comparison due in part to the secular trends in production and prices.

5.3 Isolating Price Factors

In order to study price movements, three different types of variations were isolated in market hog prices. They are (1) the long term secular trend, (2) annual cyclic fluctuations and (3) monthly price variations.

Isolation of the cyclic pattern from the secular trend was accomplished by computing an eight year moving average of Kansas City weekly quotations (Figure 5-1) for No. 1 and No. 2, 200-220 pound barrows and gilts. This weight and grade was used as representative of the market for the production anticipated for the project under study. The secular trend moves upward at a monthly rate of slightly greater than 3¢ per hundred weight, as shown in Figure 5-1.

In order to establish the repetitive annual cyclic fluctuations, the actual Kansas City weekly price was indexed to the monthly moving average. These calculations exhibit the close correlation of the annual cycles each four years as shown in Figures 5-2, 5-3, 5-4, 5-5. The weekly index for the

years 1963-1967-1971, 1964-1968, 1965-1969, and 1966-1970 closely fits the same pattern and confirms the four-year cycle in market hog prices.

The annual averages were computed on a November through October year rather than a calendar year in order to reflect the dominance of spring farrowings in cyclic production patterns. Normally falling prices recover or rising prices tend to reach peaks during these months.

The annual cyclic price adjustment factors were calculated by subtracting the average annual secular trend from the actual annual average price (Table 5-5). This procedure isolates the annual price change from the secular trend. For example in 1966 the average annual secular trend value was \$17.79 and the actual average price for the same period was \$25.29, so that \$7.50 of the price is attributed to the annual cycle. This positive value correlates to the small number of marketings in Kansas for 1965 (Table 5-4).

The monthly price adjustment factors were isolated from the secular trend and the annual cycle by subtracting the actual annual price (Table 5-2) from the actual monthly average price (Table 5-2). The calculations and the resulting factors are shown in Table 5-5. For example, the actual price for December 1966 was \$28.23 compared to the annual average price for the market year of \$25.29, for a +\$2.94 difference. Due to the similarity of the annual price fluctuations in the four-year patterns, an average of the same month within corresponding years was calculated to determine the average monthly price adjustment factors shown in Table 5-5. Following the above example, the December price adjustment factor for 1966 and 1970 is computed by averaging the monthly differentials for the two years to obtain +\$2.94. One special case should be noted for the combination of 1963-1971 into a single factor

value. This was accomplished by subtracting the secular trend difference or \$3.00 from 1971 prices to adjust for the long-term trend between the two years.

5.4 Projected Prices

All projected prices were based on the last computed monthly secular trend value of \$20.80 for August 1971. This was to meet the condition of constant, current price levels without adjustment for inflation in all input and output prices used to obtain the investment and net benefit schedules for the internal rate of return analysis.

The monthly prices were projected by combining the monthly and annual cyclic price adjustment factors, and applying these to the base August 1971 secular trend value. Thus the prices used in the internal rate of return analysis are in constant 1971 dollars. The resulting monthly projected prices are shown in Table 5-6.

The mathematics involved in the projection can be illustrated as follows for December 1974:

Secular trend value of \$20.80 plus annual adjustment factor for 1966-1974 of +\$7.50 plus monthly adjustment factor for December 1966-1970-1974 of +\$2.86 results in a projected price of \$31.16 for December 1974 (Table 5-6).

The market hog prices from Table 5-6 are used in computing revenue schedule in IRR 34 and subsequent analyses.

A graphic presentation of the projected cyclic market hog prices is given in Figure 5-6.

Actual Kansas City Prices for #1-#2 200-220 Pound Barrows and Gilts

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept.	Oct.
1963 1964 1965 1966 1967 1969 1970	16.86 14.64 14.77 24.37 20.39 17.72 18.11 26.22 16.36	16.66 14.50 15.69 28.23 20.32 17.94 19.24 27.80 16.40	16.26 15.26 16.51 28.48 20.30 18.80 20.00 28.11 16.78	15.77 15.27 17.35 28.44 19.99 19.70 20.75 28.83	14.55 14.97 17.28 25.37 18.94 19.42 20.56 26.57	14.10 14.48 17.58 22.80 18.05 19.36 20.32 24.67	15.01 15.09 20.16 23.81 22.23 19.51 24.91 17.86	17.46 16.13 23.67 25.45 22.82 20.70 25.69 25.33	18.87 17.64 24.54 25.36 22.86 22.12 26.13 26.13	17.91 17.23 24.94 26.12 21.44 20.05 .27.01 22.89	15.89 16.97 22.56 23.34 19.33 19.63 25.88	15.56 15.62 23.28 21.70 18.25 18.28 25.54

Source: Livestock Meat Wool Market News, U.S.D.A., 1963-1971.

Table 5-3

Comparison of Market Prices and Market Volume (Price in \$ per Cwt., Marketings in Billion Pounds, Liveweight)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Price Volume	15.49	16.70 25.4	16.48	15.08	14.86 27.4	21.10 26.9	22.86 24.6	18.89	18.40	22.82 28.3	21.88

Source: Agricultural Prices, U.S.D.A., 1960-1970; Livestock and Meat Statistics, U.S.D.A., 1960-1970.

TABLE 5-4. MARKETINGS OF HOGS IN SELECTED STATES, 1960-197J AND PROJECTIONS TO 1980 (MILLION POUNDS, LIVE MEIGHT)

100A NEBRASKA KAMSAS ALABAMA LOUISIANA OKLAHOMA TEXAS 4477 873 2554 48 1.28 2554 4455 1953 423 224 28 114 249 249 4787 1093 528 224 224 26 123 263 263 4491 1093 528 224 226 123 224 229							STATE			
16644		1 1	10 EA	1 E 1	KANSAS	ALABAMA		OKLAHOMA		
16917	796	18644	4477	873	393	254	4 8	8: ••	251	46792
1930	196	16917	4448	935	423	245	3.8	123	253	798 9.7
20273 4765 1950 519 227 28 14: 259 2C318 4767 1993 528 224 26 183 263 2C447 4767 1993 467 221 134 201 17921 4628 11008 467 259 31 104 201 17965 5674 1146 557 246 36 124 21 104 204 204 17965 5674 1146 557 246 36 146 254 246 36 146 254 246 31 154 254 246 36 146 254 246 31 319 319 319 319 319 319 319 319 319 319 319 319 319 310 310 310 310 310 310 310 310 310 310 310 310 310 310 31	962	19309	6254	983	482	236	35	1 34	543	25457
2C318 4787 1793 528 224 26 123 263 2C4487 4451 479 467 2214 21 154 271 17965 5C428 1108 467 250 31 151 197 17965 5C428 1136 467 250 31 154 254 17965 5C428 1146 557 246 40 124 254 19886 5131 1233 578 268 38 145 287 2C423 5132 1249 619 253 31 125 287 2C421 367 1249 619 253 31 134 28 31 2C421 3134 616 267 272 31 129 272 19343 5109 134 76 277 28 124 240 21295 5695 154 764 266	163	20273	4765	1050	519	227	28	14:	6.57	21202
2 (7.487 4451 479 467 214 21 134 201 17965 5628 1308 467 253 31 134 254 17965 5644 1146 557 246 40 124 254 17965 5644 1146 557 246 40 124 254 16986 5131 1253 578 246 38 145 284 16986 5132 1246 649 248 34 134 284 16642 253 31 125 277 31 129 287 27046 5420 1364 683 267 31 129 287 18947 516 1364 683 267 29 122 280 18948 550 1364 766 277 29 122 240 20218 550 1549 1497 766 277	164	26.318	4737	1093	528	224	92	123	263	27362
17921 4628 1308 467 259 31 131 197 17955 5794 1146 557 246 49 1146 254 19866 5131 1233 578 246 49 1146 254 19866 5131 1233 578 248 36 145 254 19867 5132 1266 649 248 31 125 271 27813 5577 1367 6602 272 33 133 292 27826 5420 1367 6602 257 231 129 287 19893 5349 1372 649 267 31 135 312 27826 5420 1364 660 255 29 129 28827 5135 1544 767 277 28 125 295 27828 5589 1497 766 277 28 125 391 27829 5589 1497 766 277 28 125 391 27821 5589 1699 868 297 29 135 315 27829 2695 1673 865 291 28 131 319 27829 2695 2695 2695 2995 2005 28829 2995 2005 2005 2005 28829 2995 2005 2005 2005 28829 2995 2005 2005 2005 28829 2995 2005 2005 28829 2005 2005 2005 28829 2005 2005 2005 28829 2005 2005 2005 28829 2005 2005 2005 28829 2005 2005 2005 28829 2005 2005 2005 28829 2005 2005 28829 2005 2005 28829 2005 2005 28829 28829	965	20.487	4451	610	467	214	21	134	201	45.454
17965 5694 1146 557 246 40 124 254 19886 5131 1233 578 268 38 145 287 26423 5132 1266 649 254 34 134 319 26423 5154 1249 619 253 31 125 271 27846 5420 1367 683 267 34 129 267 27846 5420 1367 683 267 34 129 267 27846 5420 1367 683 267 34 129 267 2847 5135 1310 660 252 29 129 267 2848 31 135 310 2848 2849 1564 767 277 29 129 350 2849 2679 1564 767 277 28 126 351 2849 2675 1689 1689 277 28 126 351 2849 277 278 278 278 278 2849 277 277 278 278 278 2849 277 277 278 278 2849 277 277 278 278 2849 277 277 277 278 2849 277 277 277 2849 277 277 278 2849 277 278 2849 278 278 2849 278 278 2849 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 278 2840 278 2	966	17921	4628	1308	195	203	31	7 C C	161	24553
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2C-4.23 5132 1266 649 238 36 134 319 19523 5124 1249 619 253 31 125 271 2CH13 55C7 1367 602 272 33 133 292 2CH13 55C7 1364 662 272 31 129 267 2CH13 55C7 1364 662 272 31 129 267 2CH13 54C0 1364 660 272 29 129 267 1976 5139 1372 694 260 28 124 280 2029 5509 1564 766 277 29 126 29 20718 5721 1695 1695 1695 1673 865 291 28 135 325 20751 6052 1673 865 291 28 131 319 8 625.31 766	368	19884	5131	1233	578	258	38	:45	287	27556
19523 5154 1249 619 253 31 125 271 272 272 272 273 292 287 267 267 267 267 31 129 287 28	169	20.473	5132	1266	649	2 18	36	134	314	28257
2(813) 55C7 1367 682 272 33 133 292 20246 5420 1364 683 267 31 129 287 20246 5420 1316 660 252 29 121 27 19393 5309 1372 694 260 288 31 1124 280 21295 56294 1542 784 288 31 135 30 20294 5679 1564 766 277 28 129 20718 5721 1549 766 277 28 126 20718 5721 1649 766 277 28 126 21334 6163 1685 868 297 29 135 301 20751 6052 1673 865 291 28 131 319 A 19230.65 4347.85 853.94 385.83 226.25 37.25 6.46 5.19 B 62.53 78 20.99 -0.46 5.19 39.11	07.0	10523	5135	1749	619	753	3.1	125	271	27182
20246 5420 1364 683 267 31 129 287 18947 5135 1316 660 252 29 121 272 19393 5369 1316 660 252 29 122 272 21295 5697 1564 764 288 31 135 312 20294 5699 1594 766 277 29 129 300 19763 5689 1497 766 277 28 126 300 20018 5721 1549 796 277 28 126 301 21334 6163 1685 868 297 29 135 325 20751 6052 1673 865 291 28 131 319 A 19230.65 4347.85 853.94 385.83 226.25 2.99 -0.46 0.19 33.71	17.0	4 L H J C	5.567	1367	682	272	33	133	292	24.44
19393 5309 1372 660 252 29 121 272 19393 5309 1372 694 260 28 124 280 21295 5695 1542 764 288 31 135 310 20294 5679 1564 767 277 29 129 350 19763 5589 1497 766 271 28 125 295 20318 5721 1549 796 277 29 125 295 21334 6163 1685 868 237 29 135 325 20751 6052 1673 865 291 28 131 319 A 19230.65 4347.85 853.94 385.83 226.26 37.25 3.19 B 62.53 78.30 38.22 22.42 2.99 -0.46 0.19 3.91 312	27.5	20246	5420	1364	683	267	31	129	28.7	12457
19393 5309 1372 694 260 28 124 280 21295 5695 1542 784 288 31 135 312 20294 5679 1564 767 277 29 129 350 2071 281 125 295 2071 281 125 295 2071 281 125 295 2071 281 126 301 21334 6160 1685 868 297 29 135 325 20751 6052 1673 865 291 28 131 319 319 226.25 37.25 125.85 233.71 38.25 22.42 2.99 -0.46 0.19 3.91	679	18967	5135	1314	660	252	6.2	:2:	272	26746
20295 5645 1552 784 288 31 135 311 20294 5679 1504 766 277 29 129 300 19763 5589 1497 766 277 28 125 295 20718 5721 1549 746 277 28 126 301 21334 6160 1685 868 297 29 135 325 20751 6052 1673 865 291 28 131 319 A 19230.65 4347.85 853.94 385.83 226.20 37.25 125.80 233.71 8 62.53 78.30 38.22 22.42 2.99 -0.46 0.19 3.91	416	19193	5309	1372	544	260	28	154	280	21452
20294 5679 1504 767 277 29 129 300 1976.3 5689 1497 766 271 28 125 295 295 295 297 28 125 301 21314 6160 1685 868 297 29 135 325 325 2075 6052 1673 865 291 28 131 319 319 2075.5 4347.85 853.94 385.83 226.26 37.25 125.86 233.71 8 62.53 78.30 38.22 22.42 2.99 -0.46 0.19 3.91	975	21295	5643	1542	784	288	31	135	345	31281
19763 5589 1497 766 271 28 125 295 205 20718 5721 1549 796 277 28 126 301 201 201 201 201 201 201 201 201 201 2	976	46202	5679	1504	167	277	53	129	370	626.92
20718 5721 1549 796 277 28 126 301 21334 6160 1685 868 297 29 135 325 20751 6052 1673 865 291 28 131 319 A 19230.65 4347.85 853.94 385.83 226.26 37.25 86 233.71 B 62.53 78.30 38.22 22.42 2.99 -0.46 0.19 3.91	1116	19763	5583	1497	166	271	2.8	125	295	20334
21334 6163 1685 868 237 29 135 325 20751 6052 1673 865 291 28 131 319 A 19230.65 4347.85 853.94 385.83 226.2C 37.25 125.8C 233.71 B 62.53 76.30 38.22 22.42 2.99 -0.46 0.19 3.91	978	20018	5771	1549	961	217	28	126	301	28816
A 19230.65 4347.85 853.94 385.83 226.26 37.25 125.86 233.71 8 62.53 76.30 38.22 22.42 2.99 -0.46 0.19 3.91	979	21334	6163	1685	868	237	56	135	325	3.633
A 19230.65 4347.85 853.94 385.83 226.26 37.25 125.86 23 B 62.53 78.3u 38.22 22.42 2.99 -0.46 0.19	980	20751	6052	1673	865	162	28	131	319	301.10
62.53 78.30 38.22 22.42 2.99 -0.46 0.19	- 1	!	28.7252	853.94	385.83	226.20	37.25	125.80	233.71	
11.00		•	78.41	38.23	22.42	2.49	10.46	61.	10.5	
0.0212 0.8605 0.8425 0.7751 0.0963 0.0340 0.0022	a S.C.	0.0212	6.8605	0.8425	0.7751	0.0963	0.0340	0.0022	0.1158	

SCURCE:

LIVESTOCK AND MEAT STAITSTICS. U.S.D.A.. 1960 TO 1970 PROJECTIONS FITTED BY LINEAR RCGRESSION AFTER MCG CYCLE ADJUSTMENTS

Table 5-5
Monthly and Annual Price Projection Factors

		1963		1964	1965	1966	1967	1968	1969	1970	1971	71
Annual Actual Avg. Price - Annual Trend	Price	16.2	24 15 41 17	15.65	19.86 17.34	25.29	20.41	19.44	22.71 19.24	25.03		18.04
Annual Cycle Factor	ı.	-1.1	17 -1	-1.60	+2.52	+7.50	+2.20	+.63	+3.47	+4.76		-2.65
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1964 Act. Mo Act. Ann. Avg.	-1.01	-1.01 -1.15	-, 39	38	68	-1.17	56	.48	1.99	1.58	1.32	03
1968 Act. Mo Act. Ann. Avg.	-1.72	-1.50	64	. 26	02	1.08	.07	1.26	2.68	.61	.19	-1.16
Sum/2 Mo. Adj. Factor	-1.37	-1.32	52	06	35	63	24	+.87	+2.34	+1.10	92.	09
1965 Act. Mo Act. Ann. Avg.	-5.09	-4.17	-3,35	-2.51	-2.58	-2.28	+.30	3,81	4.68	5.08	2.70	3.42
1969 Act. Mo Act. Ann. Avg.	-4.60	-4.60 -3.47	-2.71	-1.96	-2.15	-2.39	.15	2.98	3.91	4.30	3.17	2.83
Sum/2 Mo. Adj. Factor	-4.85	-4.85 -3.82	-3.03	-2.24	-2.37	-2.34	+. 23	+.23 +3.40	+4.30	+4.69	+2.94	+3.13

Table 5-5 (cont.)

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Мау	June	July	Aug.	Sept. Oct.
1966 Act. Mo Act. Ann. Avg. 1970 Act. Mo Act. Ann. Avg.	92	2.94	3.19	3,15	.08	-2.49	-1.48	.16	.07	+.83	-1.95 -3.59
Sum/2 Mo. Adj. Factor	+.14	+.14 +2.86	+3.14 +3.48	+3.48	+.81	-1.43	.80	+.23	+.59	99	-3.25 -5.12
1963 Act. Mo. + 1971 Act. Mo. (-3.00)/2 - Adj. 1971 Ann. Avg.	59	79	.68	+.60	-1.15 -1.84	-1.84	77	1.04	2.47	1.53	.1914
1967 Act. Mo Act. Ann. Avg.	02	09	11	43		-1.47 -2.36	1.82	2.41	2.45	1.03	-1.08 -2.16
Sum/2 Mo. Adj. Factor	31	38	40	+.09	-1.31	-2.10	-1.31 -2.10 +.53	1.73	2.46	1.28	45 -1.15

Source: Kansas City Weekly Prices (#1-#2, 200-220 Barrows and Gilts); Livestock Meat Wool Market News, U.S.D.A.

Table 5-6

Projected Market Hog Prices*

		Ĭ
A 100 TO 100	Avg.	19.20 23.32 28.30 23.00 21.42 24.27 25.56 18.15 Avg.22.90
	Oct.	18.60 26.45 23.18 21.85 20.83 27.40 20.44 17.00
To the second se	Sept.	19.96 26.26 25.05 22.55 22.19 27.21 17.70
	Aug.	20.30 28.01 27.64 24.28 22.53 28.96 24.90 19.43
	July	21.54 27.62 28.89 25.46 23.77 28.57 26.15
	June	20.07 26.72 28.53 24.73 22.30 27.67 25.79
	May	18.96 23.55 27.50 23.53 21.19 24.50 24.76 18.68
	Apr.	18.57 20.98 26.87 20.90 20.80 21.93 24.13
	Mar.	18.85 20.95 29.11 21.69 21.08 21.90 26.37 16.84
	Feb.	19.14 21.08 31.78 23.09 21.37 22.03 29.04 18.24
	Jan.	18.68 20.29 31.44 22.60 20.91 21.24 28.70
	Dec.	17.88 19.50 31.16 22.62 20.11 20.45 28.42 17.77
	Nov.	17.83 18.47 28.44 22.69 20.06 19.42 25.70 17.84
		1972-80 1973-81 1974-82 1975-83 1976-84 1977-85 1978-86

*Note: Secular base was \$20.80.

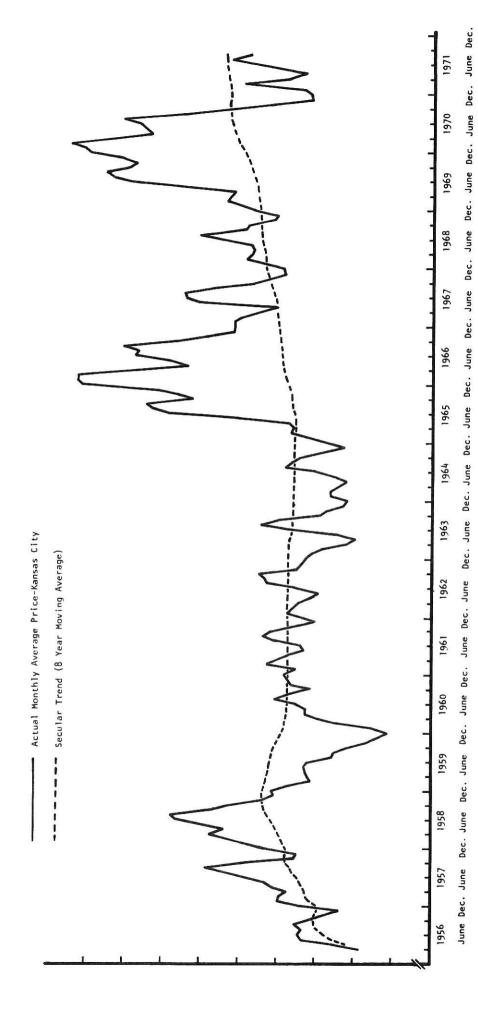


Figure 5-1. Historic Kansas City Market Hog Prices and the Secular Price Trend

Source: Livestock Meat Wool Market News, U.S.D.A., 1956-1971

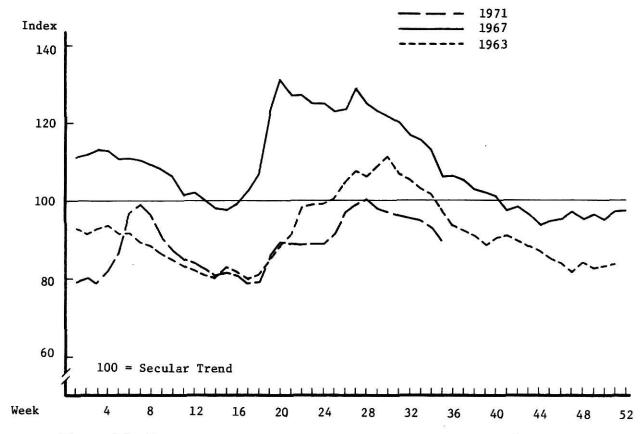


Figure 5-2. Historic Annual Cyclic Fluctuations in Hog Prices for the Kansas City Market. 1963-1967-1971.

Source: Livestock Meat Wool Market News, U.S.D.A., 1963, 1967, 1971.

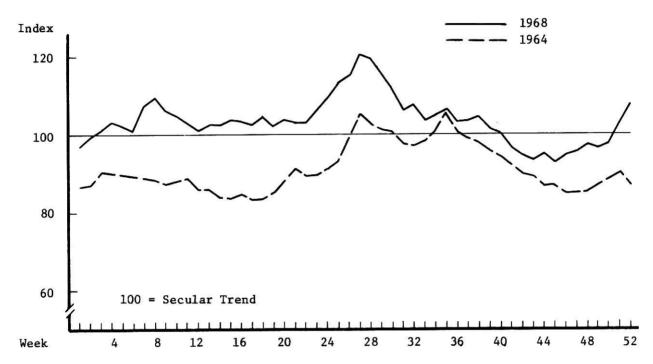


Figure 5-3. Historic Annual Cyclic Fluctuations in Hog Prices for the Kansas City Market. 1964-1968.

Source: Livestock Meat Wool Market News, U.S.D.A., 1964, 1968.

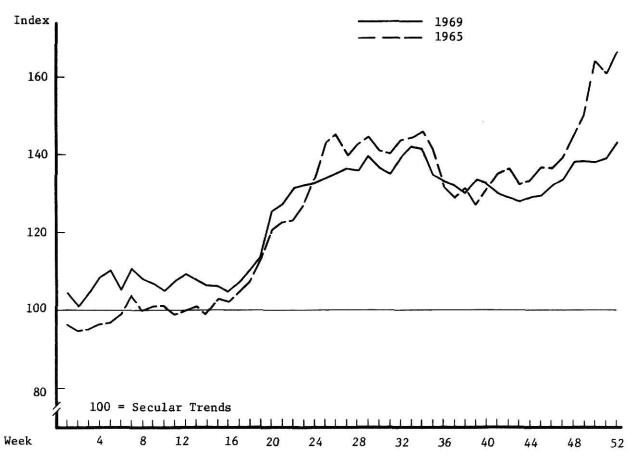


Figure 5-4. Historic Annual Cyclic Fluctuations in Hog Prices for the Kansas City Market. 1965-1969.

Source: Livestock Meat Wool Market News, U.S.D.A., 1965, 1969.

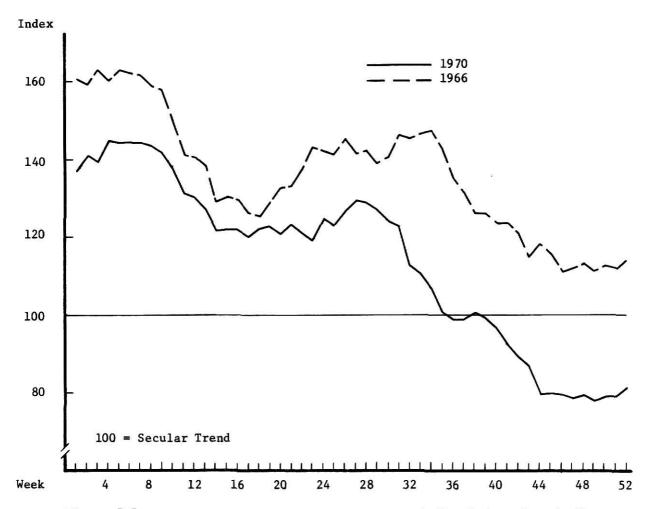


Figure 5-5. Historic Annual Cyclic Fluctuations in Hog Prices for the Kansas City Market. 1966-1970.

Source: Livestock Meat Wool Market News, U.S.D.A., 1966, 1970.

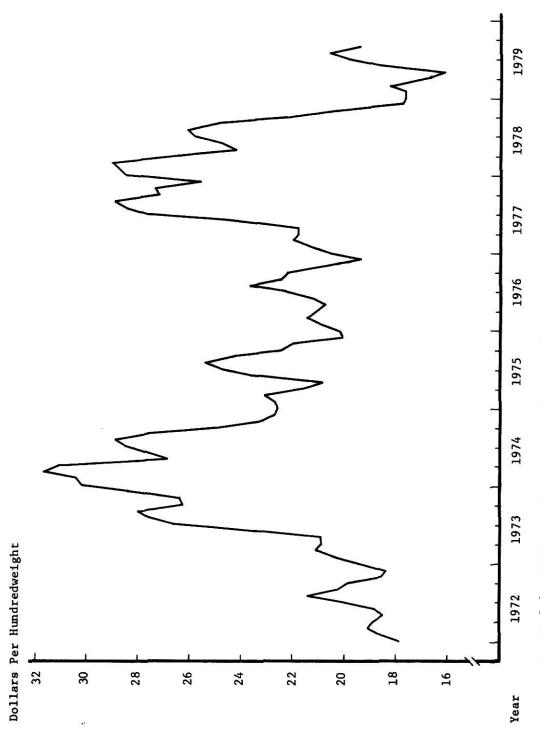


Figure 5-6. Projected Market Hog Prices for Kansas City

6.0 KEY VARIABLES OF PRELIMINARY ANALYSIS

6.1 Preliminary Analysis of Net Investment and Net Revenue Schedules

The projected cash flow and return on investment of the alternative programs depend upon a comparison of the projected schedule of capital investment and the projected schedule of net operating revenue for each alternative. The supporting figures for the annual schedules are presented in this chapter and the detailed monthly schedules will be presented in a subsequent chapter.

Key variables in the net operating revenue schedules are the projections of market hog and sow salvage revenues, feed grain, supplement and other production costs for the market hogs and the breeding herd and the overhead and administrative costs. Depreciation and interest are reflected automatically in the cash flow feasibility analysis, and need not be entered separately.

Selection of the promising and realistic alternatives for detailed analysis is an important step for any productive feasibility study. This is accomplished during this portion of the study by isolating the most critical factors and determining their effects on the annual return to capital.

6.2 Selection of Critical Alternative Factors for Detailed Study

The alternatives selected for detailed study are believed to be realistic and technically sound from the standpoint of market hog prices, facility design and cost, breeding herd requirements and replacement schedules, feed grain and associated production costs and established practices in the swine production industry.

The overall plan of operation for this section of the analysis is a

600-sow specialized farrow-to-market operation. This project would utilize a contract-constructed, modern 200-sow farrowing facility, a 2,000 pig contracted-constructed nursery, and one of three finishing facility options. The basic finishing facility alternatives are:

- Alternative 1 is a finishing facility for 4,000 head, producerconstructed, partial slats, foggers and fans, at a total cost of \$35 per head.
- Alternative 8 is an open lot finishing facility for 4,000 head, temporary type buildings, foggers, feeders and waters on concrete, at a total cost of \$15 per head.
- Alternative 9 is a 4,000-head finishing facility, environment controlled, fully slatted, turn key and contract-constructed, the total cost of which is \$45 per head.

The production flow pattern is six times per year farrowing with the sow and litter occupying the farrowing house four weeks. The pigs then enter the nursery unit for four weeks and the sow is rebred after 21 days. The pigs are transferred to the finishing facility at approximately 45 to 50 pounds, where they are fed to a market weight of 220 pounds. Feed would be purchased as required and the farm would have a 60-day feed storage capacity.

The planning horizon is 10 years for the basic model. Equipment expected to last only five years is re-entered in the investment schedule at estimated replacement cost. The hog cycle has a regular 8 year fluctuation pattern and ten years enables the project to take advantage of three high price periods as previously discussed in Chapter 5. Other options were tested in this study.

The project should be located within 50 miles of two or more packing

facilities or a major market. The entry of this project into the market would not significantly affect the overall market structure.

6.3 Facility Investment

The major facility investment includes the farrowing house, nursery, finishing house, gestation facility, feed mill, land, and equipment. The construction of this investment for facilities is shown in Table 6-1. The projected facility investment and replacement schedule is shown in the first column of Table 6-9.

6.4 Breeding Herd Investment

The investment in the breeding herd is shown in Table 6-2. The improvement of the herd is an important factor in the success of the operation. Boars and gilts should be selected from proven purebred herds. The projected investment in breeding herd is shown in the second column of Table 6-9.

6.5 Projected Volume and Sales Revenue

The projected total annual volume varies only with respect to litter size and method of replacing breeding stock. Renting the breeding herd eliminates the sow salvage revenue. The total volume is projected as follows:

Pigs Per Litter	Purchase of Breeding Stock	Replace from within the Herd
7.5	9,000	8,780
8.0	9,600	9,380
8.5	10,200	9,980

The litter size marketed was varied from 7.5 to 8.5 because 7.5 represents the average Kansas litter size (Table 3-9). However, it is believed that this project has above average facilities and management and thus would obtain

a higher litter size marketed than average. Commercial operators within the state are obtaining 8.0 to 8.5 pigs per litter. The herd would be replaced at the rate of 220 sows and 10 boars per year.

The projected sales revenue is directly correlated with market hog prices. The market hog price used in this portion of the study was developed from a price prediction model by Dr. Richard Phillips (Table 6-4). The price projection model was built from annual cycle factors and the regression equation. The sales revenue for market hogs was based on a market weight of 215 pounds. The price of sows was \$3/cwt. less and the boar price \$10/cwt. less than market hog prices. The market weights were calculated at 550 and 700 pounds, respectively.

The projected total sales revenue from market hogs and herd salvage is shown in columns 4 and 5 of Table 6-9. This table reflects the revenue from 9,600 pigs marketed annually, or an average of 8.0 per litter.

6.6 Projected Production Costs

The projected costs for expenses other than labor, management and other overhead are shown in two separate columns of Table 6-9; these are labeled herd production costs and market hog production costs. Major expense items in this classification include feed grain, protein supplement, health and utilities. Construction of the estimated total production costs is shown in Tables 6-6 and 6-7.

6.7 Projected Overhead Costs

The projected annual overhead costs are shown in the last column of Table 6-9.

⁵Richard Phillips and Larry D. Bedford, "Market Potentials for Golden Sun Hog and Cattle Feeds," Oct., 1968, Section 3-6 to 3-12, Agri Research Division of Dunlap and Associates, Manhattan, Kansas.

The major expenses in this classification include management salaries, labor costs, insurance, taxes and professional and legal services. Construction of overhead cost is shown in Table 6-8.

6.8 Projected Working Capital

The major outlays for working capital include inventories and cash to cover production expenses. The six times per year farrowing generates a 60-day capital requirement to meet the above requirements. The construction of this requirement is shown in Table 6-3.

6.9 Adjustment in Annual Revenue and Cost for Specific Alternatives

Adjustments have been made in the projected annual operating revenues and costs presented in the previous tables to reflect conditions applicable under certain specific alternatives considered.

The market price of hogs was altered to reflect the impact of price on revenue over the life of the project. The change in the revenue stream is reflected in Table 6-10 and is a summation of the revenue generated from the sale of market hogs and herd salvage revenue.

The method of breeding stock replacement alters the revenue stream.

Marketing the entire pig crop and purchasing gilts produces the highest revenue;

less revenue may be expected when replacing the breeding herd from the gilts

produced by the project or by renting the herd and losing the salvage revenue.

The projected total revenues generated by each method are shown in Table 6-11.

Average litter size variations have a large impact on the market hog revenue. This projected impact on market hog revenue is shown in Table 6-12.

Labor costs are projected to increase by \$2,000 annually for the open lot finishing facility. This amount was derived from a housing study by H. W.

Jones, Purdue University. This increase was included when computing overhead costs for alternative 8.

Adjustments have been made in the annual projected market hog production costs to reflect feed efficiency. Feed efficiencies of 3.0, 3.5 and 4.0 were considered and the respective annual production costs were \$183,000, \$223,000 and \$252,000 for alternatives 12, 1 and 13, respectively.

Grain price changes were considered and adjustments were made in market hog production costs and breeding herd costs. Raising or lowering the price of grain by \$.20 per hundredweight in alternatives 1, 12, 13 changed the production costs by \$2,000 annually for the breeding herd and \$12,000 for the market hogs.

Several other alternatives require minor adjustments which are discussed in a subsequent chapter. These adjustments are apparent from the individual internal rate of return analysis for the specific alternatives.

Table 6-1 Facilities Description and Investment

Farrowing House	
200 sow, turn-key, contract constructed, thrive center type. \$650/sow	\$130,000
Nursery	
2,000 pig, turn-key, contract constructed, thrive center type. \$30/pig	60,000
Finishing Facility	
Analysis 9	
4,000 head, environment controlled, fully slatted, turn-key, contract constructed. \$45/head	180,000
Analysis 1	
4,000 head, farmer built, partial slats, foggers, fans. \$35/head	140,000
Analysis 8 4,000 head, open lot, 100 sq. ft./pig, temporary type buildings, foggers, feeders and waters on concrete.	60,000
Gestation Facility	
600 animal, 80 sq. ft. lot, 24 sq. ft. housing. \$70/sow	42,000
Feed Mill	
15 ton capacity	25,000
Equipment	
Tractor \$3,000 Feed wagon 2,000 Pig trailer 500 Incidentals 1,500	
Pickup 3,000	10,000
Trailer House	6,000

Table	6-1 ((cont.)	
Tante	0 1	(COLLE .)	

Water System (two wells)	6,000
Land	
Option 1 and 9 80 acres at \$250/acre	20,000
Option 8 100 acres at \$250/acre	25,000
` Table 6-2	
Breeding Herd Investment and Replacement Schedu	le
Herd Input	
600 sows at \$100 per sow	\$60,000
20 boars at \$300 per boar	\$66,000
Replacement Schedule (annual cost)	
Sows each 3 years 33% per year	
Boars each 2 years 50% per year Ten percent overhead for non-breeders, etc.	29,000
Table 6-3	
Working Capital Requirements	

Working capital required is for 60 days under the 6 times per farrowing system of 1/6 of column 6 (herd variable cost), co	
(market hog variable cost), and column 8 (fixed costs).	\$50,000

Table 6-4
Market Hog Revenue

Market prices of slaughter hogs based on a projection model accounting for the cyclic fluctuations in hog prices.

Year	Price per Cwt.
1971	17.37
1972	19.80
1973	24.32
1974	21.54
1975	16.68
1976	19.46
1977	20.50
1978	19.98
Average	19.94

Market weights were 220 lbs. per pig less a five pound shrink or 215 lbs.

Market hog numbers were based on 8.0 pigs marketed per litter unless otherwise noted.

Table 6-5
Herd Salvage Revenue

Sow price based on market hog price less \$3.00 per cwt. Boar price based on market hog price less than \$10 per cwt.

Salvage weight - 550 pounds - except last year of program when entire herd salvaged at 450 pounds.

Salvaged numbers based on replacement schedule of breeding herd.

Table 6-6

Herd Production Costs

Feed Consumption

Sow annual feed consumption was calculated at 1680 lbs. grain, 420 1bs. - 36% supplement, and boar annual feed consumption at 1600 plus 400 lbs. - 36% supplement. Ingredients cost is \$200 per cwt. milo and \$120 per ton for supplement.

Herd health costs were calculated at \$1.50 per animal unit.

Table 6-7

Market Hog Production Costs

Feed Costs

Feed consumption per cwt, pork marketed was based on a feed efficiency of 3.5 from birth to market.

Pre-starter consumption - 5 lbs. pre-starter at \$9.50 cwt. Starter consumption - 25-50 lbs. 40 lbs. milo and 12 lbs. supplement. Market consumption - 50 -220 lbs. 602 lbs. milo and 98 lbs. supplement.

Health Costs

Birth to 50 lbs.

1.	Vaccinations	for	iron,	etc.	21¢
2.	Worming				5¢
3.	Medication				50¢
lbs.	to market				
1.	Medication				20¢
2.	Worming				_ <u>5</u> ¢

96¢ per pig

Utilities Costs

50

Electrical power, heat, fuel, water and telephone \$1.25 per pig

Table 6-8
Overhead Costs

Labor and Management	
Labor - two men at \$6,500 each Manager at \$12,000 Taxes at the rate of \$1 per \$100 capital invested Veterinary, legal fees, accounting fees and insurance	\$13,000 12,000 5,000 2,000 \$32,000

Table 6-9

Cash Flow Tables for the Basic 600-Sow Farrow-to-Market Operation (in thousands of dollars)

Year	Facilities	Breeding Herd	Working Capital	Market Hog Sales Revenue	Herd Salvage Revenue	Herd. Prod. Costs	Market Prod. Costs	Over- head Costs
1972	445	66						
1973	5	29	50	502	23	41	223	32
1974	5	29	.=.=:	445	20	41	223	32
1975	5	29		344	15	41	223	32
1976	5	29		402	18	41	223	32
1977	97	29		423	19	41	223	32
1978	5	29		412	19	41	223	32
1979	5	29		359	16	41	223	32
1980	5	29		408	18	41	223	32
1981	5	29		502	23	41	223	32
1982	5	29		445	48	41	223	32
1983	-86*		-50**					

^{*} Salvage value of the project.

Source: Calculated from Tables 6-1 through 6-8.

^{**} Investment credit for working capital.

Table 6-10

Projected Total Annual Revenue for Market Hog Price Alternatives 1, 2; 3, 4, 5, 6, 7 (in thousands of dollars)

		Dev	dation per	Deviation per hundredweight from standard projected price Table 6-4	r irom stand ble 6-4	iard project	e d
Year Alternative	-\$2.00	-\$1.00 3	-\$0.50 4	Standard 1	+\$0.50 5	+\$1.00 6	+\$2.00
1973	481	503	515	525	535	547	568
1974	421	443	424	465	475	486	508
1975	315	338	359	359	370	381	400
1976	376	398	420	420	430	440	461
1977	399	420	442	747	452	463	483
1978	388	410	421	431	441	452	473
1979	331	353	364	375	384	395	416
1980	383	405	416	426	437	447	468
1981	481	503	515	525	535	246	266
1982	447	470	482	493	503	515	578

Table 6-11

Projected Total Revenue for Breeding Herd Replacement Alternatives 1, 19, 33
(in thousands of dollars)

Year		Purchase Herd	Replace Internally	Rent Herd
	Alternative	1	33	19
1973		525	513	502
1974		465	455	445
1975		359	351	344
1976		420	411	402
1977		442	432	423
1978		431	42.2	412
1979		375	367	359
1980		426	417	408
1981		525	513	502
1982		493	483	445

Table 6-12

Projected Market Hog Revenue for Alternative Litter Sizes 1, 14, 15

(in thousands of dollars)

Year		Litter Size Marketed	7.5	8.0	8.5
	Alternative		14	1	15
1973			471	502	533
1974			417	445	472
1975			322	344	366
1976			377	402	427
1977			397	423	450
1978			387	412	438
1979			336	359	387
1980			383	408	434
1981			471	502	533
1982			417	445	472

7.0 PROJECTED CASH FLOW AND RETURN ON INVESTMENT

7.1 Internal Rate of Return

The projected cash flow for each of the alternatives is simultaneously affected by capital costs for facilities, equipment and breeding herd, the operating capital requirements, the construction schedule and projected annual net revenue. The projected cash flow is used to measure the return on investment for each of the alternatives.

The principle measure of economic potential used in this study is the internal rate of return or IRR. The IRR is a measure of the potential return to capital investment in a project based on the time flow of money into and out of the project and is the return which equates the present value of the investment schedule to the present value of the schedule of net benefits.

The IRR is calculated on the basis of total investment and the total net earnings for the project before interest payments. Thus it is a measure of return to capital invested regardless of source. For any alternative which has an IRR above the market rate of interest, a profitable payout schedule can be formulated for the project. The higher the IRR in relation to the market rate of interest, the more profitable the project.

The IRR formula solves for i in the formula:

$$I_0 + I_1 \left(\frac{1}{1+i}\right) + I_2 \left(\frac{1}{(1+i)^2}\right) + \dots + I_n \left(\frac{1}{(1+i)^n}\right) =$$

$$B_0 + B_1 = \frac{1}{(1+i)} + B_2 = \frac{1}{(1+i)^2} + ... + B_n = \frac{1}{(1+i)^n}$$
, where

I = Investment and B = Benefit.

There are a number of rules which were followed in developing capital investment and net benefit schedules for the internal rate of return analysis:

- The length of planning period encompassed the useful life of project facilities.
- Total capital investment for facilities, breeding herd and working capital were entered as investments.
- 3. Equipment of shorter life than the planning period was re-entered at its original cost when replaced. Credit was taken for salvage value of facilities during the last year of the project.
- 4. No interest, depreciation nor income tax was included. The IRR calculates economic potential as a return to total capital investment. Re-entry of replaced equipment in the schedule preempts the need for calculating depreciation. IRR gives the total return to capital independently of how the return is divided between the owners and society as a whole.
- 5. Only direct annual benefits were included and were entered annually (monthly in the monthly model).
- 6. All prices were maintained at a constant level except where changes are noted.
- 7. Investments and net benefits figures were entered in \$1,000 units in the annual model and in dollars in the monthly model.
- 8. Investment credits were entered when capital was removed reflecting salvage facilities and freeing of working capital.
- 9. The investment schedule and net benefit schedule were aligned to the same year (or month in the monthly model).

A special computer program using the above formula is used to compute

the IRR for the specific alternatives.

The program provides the full-discounted benefit-cost (or net revenue-total investment) ratios at alternative interest rates, and the present value of the surplus (or deficit) of net revenue over investment at these interest rates. The reconstruction of discounted values (present value factor) is provided in the program print-out.

7.2 General Design of the Sensitive Analysis of Various Alternatives

This portion of the study is designed to test the sensitivity of the IRR for various alternatives. Each alternative is designed to compare an individual factor of economic importance to commercial swine production.

The basic model from which other alternatives were formulated is a 600-sow farrow-to-market operation with a \$35 per pig finishing facility (Table 6-1), litter size of 8.0, standard hog price prediction (Table 6-4), feed grain price of \$2.00 per hundredweight and feed efficiency of 3.5.

The projected net investment and net benefits schedules for the basic model, Alternative 1, is shown in Table 6-9.

7.3 Estimated Capital Cost for Facilities and Equipment

The capital cost estimates for the facility and equipment alternatives are summarized below:

- The total estimated capital cost for the facility with a producer constructed finishing facility costing \$35 per pig capacity is \$445,000, Alternative 1.
- The total estimated capital cost for the facility with a producer constructed temporary type finishing facility costing \$15 per pig capacity is \$370,000, Alternative 8.

3. The total capital cost for facilities with contract construction of the finishing facility costing \$45 per pig capacity is \$485,000, Alternative 9.

The projected total annual capital cost for facilities and breeding herd is shown in the first column of Analysis 1 to 33. The breeding herd costs explain why there are entries for every year in the investment schedule. These figures reflect the estimated capital costs and the useful life of the facilities taken as five years for equipment and 15 years for buildings. The replacement cost at the end of useful life of equipment is re-entered into the cash flow at the year of replacement.

This is the reason for the relatively large capital cost in 1977. The depreciated value of buildings and equipment as well as the land value at the end of the project is credited to the cash flow by entering an investment credit at the termination of the project.

The estimated schedule for working capital requirements is shown in the second column of Analysis 1 to 33. The schedule includes the original working capital input and any annual changes to take care of variations in operating requirements. The construction of this capital requirement is shown in Table 6-3. Credit is taken for the entire working capital fund at the end of the planning period.

The schedule of total capital investment in Analysis 1 to 33 represents the sum of the investment schedule for facilities and the schedule of working capital requirements. To obtain the cumulative total requirement over the planning period, the credit figures shown for the last year in the planning period should be added back to the investment shown on the total line in the tables.

7.4 Projected Annual Net Revenue

The projected schedules of operating revenue, operating expenses, and net revenue before depreciation, interest, and income tax are shown in the center section of Analysis 1 to 33.

The total revenue schedule for each alternative represents total sales of market hogs and breeding stock salvage sales. The figures are taken from Tables 6-10 to 6-12. The schedules of total operating expense for each alternative are taken from Tables 6-6 to 6-9 and from Section 6-9. The net revenue schedules in Analysis 1 to 33 are the total revenue figures minus the corresponding total operating cost figures.

The net revenue figures are before depreciation, interest and income tax. Depreciation is excluded to eliminate double accounting because the full original investment and replacement costs are entered to the cash flow in the investment schedule. Interest is excluded in order to reflect accurately the earning power of total investment in the alternative as shown at the top of the table as annual return to capital. Income tax is excluded to reflect the gross power of investment directly, regardless of how the earnings may be divided. Alternatives with the highest gross earning power before taxes may be expected to have the highest earning power on equity capital after payment of income taxes and interest.

The year-to-year fluctuations in annual net revenue in Analysis 1 to 33 are the result of the impact of the hog cycle discussed in Chapter 5. It will be noted that the years 1973 and 1981 will be unusually good years and 1975 will be an unusually bad year for swine producers. These fluctuations (see Figure 5-6) are a part of the economic risk involved in swine production and must be taken into account in the capital investment planning of any swine operation.

7.5 Projected Annual Cash Flow

The year-by-year net cash flow is not shown as such in Analysis 1 to 33. The cash flow is the year-by-year net revenue schedule minus the year-by-year total investment schedule for the alternative. The cash flow will have large negative numbers during the year the facility is constructed and positive figures during the remaining years except where large replacements of equipment are necessary every five years. A major positive cash balance occurs in the last year of the project when credit is taken for the remaining salvage value of the investment and the working capital balance.

The year-by-year present values of the investment and net revenue schedules for each of the alternatives are shown in the last two columns of Analysis 1 to 33. These figures are obtained by applying the corresponding present value factor at the rate of return for the project to the total annual investment and net revenue schedules. The sums of the two present value columns are identical by definition, because the IRR is that earning rate on investment which makes them equal.

The benefit/cost ratio is shown in the lower center of Analysis 1 to 33. The discount rates at which the ratios are computed are shown to the left as annual percentages. The benefit/cost ratio will be 1.00 at an interest rate identical to the computed annual return to capital shown in the upper center portion of Analysis 1 to 33 for each individual alternative.

7.6 Comparative Return on Investment for Alternatives

The investment feasibility analysis shown in Analysis 1 to 33 indicates the comparative return on investment for a specific alternative including:

- 1. Margin changes due to deviation in annual average market hog prices.
- 2. Producer constructed finishing facility versus contract constructed

finishing facility.

- 3. Feed efficiency alternatives.
- 4. Feed grain price alternatives.
- 5. Litter size marketed.
- 6. Increased overhead due to higher labor costs.
- 7. Herd loss versus vaccination for TGE.
- 8. Breeding herd acquisition and replacement methods.
- Purchase and storage of feed grain during harvest to take advantage of lower seasonal prices discussed in Chapter 4.
- 10. Varying the entry year into production to test the aggregate effect of the hog cycle.
- Increasing feed efficiency and cut out value by improved breeding stock selection.
- 12. Varying the planning horizon.
- 13. In and out during years of low prices for market hogs.
- 14. Selling feeder pigs.

The cycle in marketing hog prices affects the sales revenue and the operating margins of a swine enterprise. The profit margin per pound of pork produced fluctuates in the same direction as the selling price, but the swings are relatively greater. Testing the impact of changes in market hog prices was accomplished by altering the average annual prices in Table 6-4. The results of this analysis are summarized below and indicate that market price is extremely critical to the project.

Price Influence on Annual Return to Capital

Analysis	Deviation from Annual Average Price in Table 6-4	Internal Rate of Return	Present Value Balance for an Interest Rate of 8% (in 000's dollars)
2	- \$2.00	5.10%	
3	- \$1.00	10.49%	64
4	- \$0.50	13.52%	142
1	Standard	15.69%	199
5	+ \$0.50	18.07%	262
6	+ \$1.00	20.19%	327
7	+ \$2.00	24.62%	409

The rate of return on total capital investment is substantially higher for the facility utilizing the producer-constructed, open-lot finishing facility. The relative rates of return are indicated by the following comparisons:

Finishing Facility	Analysis	Return	Present Value Balance at 8% Interest
\$35 per pig farmer- constructed facility	1	15.69%	\$199,000
<pre>\$15 per pig farmer- constructed temporary- type facility</pre>	8	21.01%	\$266,000
\$45 per pig contract- constructed environment- controlled facility	9	13.47%	\$151,000

The annual rate of return to capital increases as the price of feed grain decreases. The comparative rates of return for various feed grain prices are:

Price of Feed Grain per hundredweight	Analysis	Return	Present Value Balance at 8% Interest
\$1.80	12	19.09%	\$287,000
\$2.00	1	15.69%	\$199,000
\$2.20	13	12.54%	\$117,000

The comparative rates of return to capital resulting from increasing or decreasing litter size marketed reflects the fixed costs involved in herd maintenance. The results are shown below:

Pigs Marketed per Litter	Analysis	Return	Present Value Balance at 8% Interest
7.5	14	12.80%	\$123,000
8.0	1	15.69%	\$199,000
8.5	15	18.67%	\$279,000

Increasing the labor force to four men would make the project feasibility marginal. The added operating costs without a corresponding increase in revenue is not feasible. The comparative returns are:

Labors	Analysis	Return	Present Value Balance at 8% Interest
2	1	15.69%	\$199,000
4	16	10.87%	\$74,000

The comparative returns of vaccinating the sows to prevent TGE and the alternative of losing a pig crop twice during the project as shown in the total revenue column of Analysis 17 decreases the return for both but the comparative ratio favors vaccination. Losses from TGE would seriously hinder the project.

Alternative	Analysis	Return	Present Value Balance at 8% Interest
No vaccination and no loss	1	15.69%	\$199,000
Vaccination for TGE and no loss	18	14.00%	\$123,000
No vaccination and loss of two pig crops	17	10.26%	\$60,000

The returns to capital are substantially higher for renting the breeding herd at \$1.25 per pig marketed or replacing the breeding gilts from gilts produced by the project versus continuous purchasing of breeding stock from purebred breeders. The returns are:

Replacement Method	Analysis	Return	Present Value Balance at 8% Interest
Purchase from Breeders	1	15.69%	\$199,000
Rent Herd	19	18.31%	\$234,000
Internal Replacement	33	19.02%	\$288,000

Grain storage receives considerable attention in the swine industry as the price of grain is typically lower at harvest time (Chapter 4). The cost of grain storage was computed at \$1.25 per hundredweight, 1¢/cwt. additional operating cost, and 1/2% shrink. The total facility cost is \$92,000 and is noted as an increase in column one, Analysis 20.

Working capital requirements increase as the cash outlay is in the beginning of the period when the grain enters storage. This is reflected in column 2, Analysis 20 as a total of \$48,000 over the life of the alternative. Operating expenses in column 5 decrease only \$5,000 per year.

Storing grain for the entire year is not feasible. The added capital cost and high working capital requirements more than offset the savings in operating expense. The comparative rates are:

Grain Procurement	Analysis	Return	Present Value Balance at 8% Interest	
Purchase as required	1	15.69%	\$199,000	
Purchase at harvest	20	11.75%	\$125,000	

The comparative returns resulting from the entry year in the hog cycle vary from desirable to totally undesirable, once again pointing out the effect of the hog cycle discussed in Chapter 5. The returns to capital indicate if entry cannot be made in 1973, then it is advantageous to wait until 1976.

First Year of Production	Analysis	Return	Present Value Balance at 8% Interest
1973	1	15.69%	\$199,000
1974	21	11.10%	\$84,000
1975	22	9.63%	\$47,000
1976	23	12.18%	\$114,000

Herd improvement can be made by purchasing superior breeding stock from purebred breeders who have a vigorous performance record as well as improvement and testing programs. The improved breeding stock command premium prices. The improved stock increases estimated costs per gilt to \$150 and \$300 to \$500 for boars in order to increase feed efficiency by .5 pound feed per pound of pork produced or to improve market quality and gain 50¢ premium per hundredweight for the market hogs produced. These improvements significantly increase the

capital investment in column 1 of Analysis 24 and 25. The increased feed efficiency lowers the operating expenses of Analysis 24 by \$40,000 annually and increases the total revenue column in Analysis 25.

The comparative results below indicate that increased breeding herd costs can be justified for feed efficiency but not for cut out value.

Breeding Herd Improvement	Analysis	Return	Present Value Balance at 8% Interest
Normal	1	15.69%	\$199,000
Feed Efficiency	24	21.10%	\$362,000
Cut Out Value	25	14.61%	\$181,000

The comparative analysis of the planning horizon shows no significant difference in return. However, note the present value balance:

Years of Production	Analysis	Return	Present Value Balance at 8% Interest
10	1	15.69%	\$199,000
5	26	15.23%	\$109,000
15	27	16.00%	\$239,000

The hog cycle is directly correlated to the in-and-out producer who always gets in at the wrong time. One alternative assumes that management is superior in price forecasting techniques and is out of production whenever the market hog price is below \$18 per hundred. The results are not feasible due to loss of revenue to cover fixed costs as shown in the net revenue column of Analysis 28. The return to capital for this option is 14.32%.

Analysis 29 contains data from an actual commercial operation in North Central Texas and has a return of -4.50%. This comparative competitive

disadvantage is to be expected for the reasons discussed in Chapter 3.

The alternatives involving feeder pig production involve elimination of the finishing facility and marketing the pigs at 45 pounds. The results are not favorable if the feeder pigs are sold at 1.5 x the price of market hogs. The returns increase if the feeder pig price is 1.8 x the market hog price; however, neither option compares favorably to marketing slaughter hogs.

Market	Analysis	Return	Present Value Balance at 8% Interest
Market hogs	1	15.69%	\$199,000
Feeder pigs at 1.5 x market hog price	31	-0.09%	-\$116,000
Feeder pigs at 1.8 x market hog price	32	11.84%	\$58,000

7.7 Summary Evaluation of Alternatives

The most critical factors affecting the potential economic return of this commercial swine operation are:

- 1. Market hog price and the hog cycle.
- 2. Feed efficiency.
- 3. Capital investment in facilities.
- Feed grain costs.
- 5. Breeding stock replacement procedure.

Management of an individual commercial swine operation may exercise management decisions and procedures to take advantage of the higher prices in the hog cycle as in 1973, breeding stock selection to improve feed efficiency, capital outlay in facilities and either renting the herd or replacing the gilts

from the herd.

However, management has little control over feed grain price or the average price received for market hogs.

The most promising alternative studied in this preliminary analysis is the construction of a producer-built temporary-type finishing facility, increasing litter size to 8.5 pigs per litter marketed and selecting rented breeding stock for increased feed efficiency. The results of this composite of the above positive factors is shown in the annual return to capital in Analysis 30. The positive factors are: Market Entry - 1973, Litter Size - 8.5, Feed Efficiency - 3.25, and a rented herd.

Analysis	Return	Present Value Balance at 8% Interest
30	31.08%	\$437,000
1,	15.69%	\$199,000

Returns of this magnitude are highly attractive and are more carefully studied in the next chapter.

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I ANALYSIS OF 6CC SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.CG FEED EFF. 3.5

ANNUAL RETURN ON CAPITAL 15.69 PERCENT

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Second Color	Second Color	I DENT.	FACILITIES	WORKING	-	- m	ES	NET REVENUE	VALUE	INVESTMENT	œ
511. 0.0 511. 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Sile	1971	0	0	1 1		0.0	0	1.0000	3	
34. 50. 84. 525. 296. 129. (.7472 63. 63. 63. 64. 64. 65. 64. 64. 64. 64. 64. 64. 64. 64. 64. 64	34. 50. 84. 525. 226. 229. 0.7472 63. 34. 0. 34. 455. 296. 169. 0.6659 22. 34. 0. 34. 420. 296. 124. 0.6659 19. 34. 0. 126. 442. 296. 135. 0.6659 19. 34. 0. 126. 442. 296. 135. 0.4826 126. 34. 0. 34. 426. 296. 130. 0.3117 11. 34. 0. 34. 426. 296. 130. 0.2029 9. 34. 0. 296. 190. 0.2029 0.2013 7. 34. 426. 296. 197. 0.2023 7. 36. 0. 0. 0.2023 7. 461. 296. 1501. 0.1747 0.213 461. 296. 1501. 0.1747 0.1747 461. 296. 1501. 0.1747 0.1747 461. 296. 1501. 0.1747 0.1747 461. 296. 1501. 0.1747 0.1747 461. 296.<	1972	511.	ô	511.	•0	0	c'	0.8644	442.	•
126.00 34. 465. 296. 169. 0.6459 22. 126. 0. 34. 420. 296. 124. 0.4581 19. 126. 0. 34. 420. 296. 124. 0.4581 19. 126. 0. 34. 420. 296. 124. 0.4472 159. 126. 0. 34. 422. 296. 134. 0.3117 11. 126. 0. 34. 425. 296. 137. 0.3117 11. 127. 296. 197. 0.2694 9. 127. 296. 197. 0.2694 9. 128. 296. 197. 0.2794 9. 129. 197. 0.1747 120. 129. 199. 127. 199. 129. 199. 127. 199. 129. 120.0 1.27 133. 129. 120.0 1.27 133. 120.0 1.27 133. 120.0 1.29 1.29 133. 120.0 1.29 1.29 133. 120.0 1.29 1.29 133. 120.0 1.29 1.29 133. 120.0 1.29 1.29 133. 120.0 1.29 1.29 133. 120.0 1.29 1.29 1.29 120.0 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20 120.0 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20	126. 169.	1973	34.	50.	84.	525.	296.	229.	0.7472	63.	171.
126. 126.	126.00 34. 359. 296. 63. 0.5583 19. 126. 0. 126. 442. 296. 124. 0.4826 16. 126. 0. 126. 442. 296. 124. 0.4826 12. 126. 0. 34. 431. 296. 135. 0.3107 11. 126. 0. 34. 442. 296. 130. 0.3107 11. 126. 0. 34. 442. 296. 130. 0.2694 9. 127. 0. 34. 426. 296. 130. 0.2694 9. 128. 0. 34. 426. 296. 130. 0.2694 9. 129. 0. 34. 426. 296. 130. 0.1740 0.2012 129. 0. 857. 4461. 2960. 1501. 638. 129. 120. 127 86.00 1.27 86.00 127. 10.00 1.27 86.00 1.27 129. 133. 133. 120. 120. 120. 133. 120. 120. 120. 133. 120. 120. 120. 133. 120. 120. 120. 133. 120. 120. 120. 133. 120. 120. 120. 133. 120. 120. 120. 133. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120. 120.	1974	34.	0	34.	465.	296°	169.	0.6459	22.	109.
126. 124.	126. 0.4 126. 124. 0.4 126. 124. 0.4 126. 126	1975	348	Ç	34.	359.	296	63.	0.5583	19.	35.
126	126. 0. 126. 442. 296. 146. 0.4172 53. 34. 0. 34. 431. 296. 135. 0.3107 112. 34. 0. 34. 426. 296. 130. 0.3107 112. 34. 0. 34. 426. 296. 130. 0.2294 9. 34. 0. 34. 426. 296. 130. 0.2294 9. 34. 0. 34. 426. 296. 130. 0.2294 9. 34. 0. 34. 426. 296. 1501. 0.2294 9. 45. 0. 34. 426. 296. 1501. 0.1747 -24. 657 0. 657. 4461. 2960. 1501. 638. 650 1.37 1039. 760. 279. 650 1.27 8930. 760. 133. 1500 1.27 930. 731. 133. 1500 1.02 0.89 531. 595. -66. 30.00 0.71 339. 517. -148. 53. 0.400 0.71 369. 517. -148. 53. 0.400 0.71 369. 517. -148. 53. 0.400 0.71 0.71 0.700. 53. 0.400 0.71 0.71 0.700. 53. 0.400 0.71 0.71 0.700. 54. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.700. 55. 0.400 0.71 0.71 0.700. 55. 0.400 0.71 0.700. 55. 0.400 0.71 0.700. 55. 0.400 0.71 0.700. 55. 0.400 0.71 0.700 0.71 0.700. 55. 0.400 0.71 0.700 0.71 0.700 0.71 0.700 0.71 0.700 55. 0.400 0.71 0.700 0.	1976	34.	0	34.	420.	2.96.	124.	0.4826	16.	•09
34. 0. 34. 431. 296. 135. 0.30.6 112. 34. 0. 34. 426. 296. 130. 0.2694 9. 34. 0. 34. 426. 296. 130. 0.2694 9. 34. 0. 34. 493. 296. 197. 0.2329 8. 657. 0. 857. 4461. 2960. 1501. 638. INTEREST RENEFIT/COST RENEFIT/COST RENEME OULLAY BALANCE 150.0 150.0 1.27 830. 150.0 1.27 830. 150.0 1.27 830. 150.0 1.27 830. 150.0 1.00 1.00 1.00 1.00 1.00 1.00 1	34. 0. 34. 411. 296. 135. 0.390.6 12. 34. 0. 34. 426. 296. 130. 34. 426. 296. 130. 34. 426. 296. 130. 34. 426. 296. 130. 34. 426. 296. 130. 34. 426. 296. 130. 34. 426. 296. 130. 486. -50. -136. 857. -461. 2960. 1501. 857. 4461. 2960. 1501. 857. 4461. 2960. 1501. 857. 4461. 2960. 1501. 857. 4461. 2960. 1501. 857. 4461. 2960. 1501. 850. 1.27 930. 760. 279. 10.00 1.27 930. 731. 10.00 1.27 830. 10.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1977	126.	6	126.	442.	2962	146.	0.4172	53.	61.
## 426	34. 0. 34. 375. 296. 130. 0.3117 11. 34. 0. 34. 226. 229. 130. 0.20594 9. 34. 0. 34. 525. 296. 130. 0.20594 9. 34. 0. 34. 493. 296. 197. 0.2013 7. 857. 0. 857. 4461. 2960. 1501. 857. 0. 857. 4461. 2960. 1501. 86.00 1.37 8.00 1.37 10.00 1.19 10.00 1.02 50.00 0.71 369. 50.00 0.71 360. 50.00 0.71 360. 50.00 0.71 360. 50.00 0.71 360. 50.00 0.71 360. 50.00 0.71 360.	1978	340	0	34.	431.	-962	135.	0.36v6	12.	04
## 426. 296. 130. 0.2694 9. ## 525. 296. 130. 0.2013 7. ## 657. 0. 34. 456. 296. 1501. 0.01747 -24. ## 657. 0. 857. 4461. 2960. 1501. 638. ## 657. 0. 857. 4461. 2960. 1501. 638. ## 657. 0. 857. 4461. 2960. 1501. 638. ## 657. 0. 857. 4461. 2960. 1501. 638. ## 657. 0. 1039. 760. 279. ## 133. 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 658. 645. 133. ## 668. 645. 133.	## 426. 296. 130. 0.2694 9. ## 525. 296. 130. 0.2013 7. ## 693. 296. 130. 0.2013 7. ## 693. 296. 130. 0.2013 7. ## 693. 296. 130. 0.2013 7. ## 693. 296. 1501. 0.2013 7. ## 693. 1501. 0.2013 7. ## 693. 1501. 0.200 ## 693. 130. 0.2013 7. ## 693. 131. 199. 133. 0.200 ## 693. 131. 199. 133. 0.200 ## 693. 131. 199. 133. 0.200 ## 693. 131. 199. 133. 0.200 ## 693. 131. 199. 133. 0.200 ## 693. 131. 199. 133. 0.200 ## 693. 131. 199. 148. 133. 0.200 ## 693. 131. 148. 148. 148. 148. 148. 148.	1979	4 A E		34.	375.	*962	79.	0.3117	11.	25.
34. 0. 34. 525. 296. 229. 0.2013 7.	34. 0. 34. 525. 296. 229. 0.2013 8. 34. 493. 296. 197. 0.2013 7. 7. 34. 493. 296. 197. 0.2013 7. 34. 493. 296. 197. 0.2013 7. 34. 4461. 2960. 1501. 398. 388. 388. 388. 389. 389. 389. 389	1980	340	ပံ	34.	426.	296.	130.	0.2694	6	35.
# 493. 296. 197. 0.2013 72460136. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0. 0.1740 -2460. 0.17	# 493. 296. 197. 0.2013 7. # 857136. 0. 0. 0.1740 -24. # 1030. 0.17	1981	34.	0	34.	525	296	229.	0.2329	œ	53.
HATEREST BENEFIT/COST PRESENT VALUE IN \$ 1000	BENEFIT/COST BALANCE BALA	1982	24.	5	34.	493	296°	197.	0.2013	7.	*0*
B57. 4461. 2960. 1501. 638. 638. 638. 638. 6461. 2960. 1501. 638. 638. 6461. 2960. 1501. 638. 6461. 638. 6461. 638. 6461. 638. 6461. 638. 6461. 638. 6461. 6	NTEREST 0. 857. 4461. 2960. 1501. 638. 638. 650	1983	-86-	-20-	-136.	0	້:	0.	0.1749	-24.	ó
INTEREST EEB_CENI 6.00 8.00 8.00 1.37 6.00 8.00 1.37 1.02 1.03 1.04 1.04 1.05 1.06 1.07 1.08 1.09 1.00	SET 0				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
BENEFIT/COST BAILO 1.37 1.37 1.27 1.27 1.27 1.27 1.27 1.27 1.27 1.27 1.27 1.27 1.30	BENEFIT/COST 1-37	TOTAL	657.	• •	857.	4461.	2960.	1501.		638.	638.
1.27 1039. 760. 1.27 1.27 930. 731. 1.10 1.02 645. 645. 645. 645. 645. 6.89 6.89 5.17.	1.27 1039. 760. 131. 1.27 1.27 930. 731. 1.10 837. 1.02 645. 645. 645. 645. 645. 645. 645. 647. 1.02		INTERE	EST	60 (ENEFIT/COST		PRESENT	T VALUE IN \$	1000 BALANGE	
1.27 930. 731. 1.19 837. 704. 1.02 658. 645. 0.89 631. 595.	1.27 930. 731. 1.19 1.01. 1.02 658. 645. 645. 645. 6.45. 6.45. 6.45. 6.45. 6.71. 369. 517.)*9	00		1.37		1039		279.	
1.02 1.02 0.89 0.71 369. 517.	1.02 0.89 0.71 0.71		80 5	000		1.27		930		199.	
0.89 0.71 369. 517	0.89 0.71. 369. 517.					1.02		45.8	545	, c. I	
0.71	0.71.		20.0	S C C		0.89		531		-64.	
			30.0	00		0.71		369		-148.	

**EXCLUCING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSIS

2 ANALYSIS OF 6C3 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. -\$2 GRAIN PR. \$2.00 FEED EFF. 3.5

ANNUAL RETURN ON CAPITAL 5.10 PERCENT

		Z	~	OPER	OPERATING (\$ 1000			PRESENT VALUE	VALUE
TOENT		CAP	TCTAL		OPERATING EXPENSES **	REVENUE	i -	INVESTMENT REVEN	NET REVENUE
C 1971	0.0	0	•0	0	0	0.	1.0000	0	0
1 1972	511.	a	511.	•0	•	•	0.9515	486.	• •
2 1973	34.	50.	84.	481.	296.	185.	0.9053	76.	167.
	34.	•	34.	421.	296.	125.	0.8614	29.	108.
4 1975	34.	•	34.	315.	296.	19.	0.8196	28.	16.
5 1976	34.	ં	34.	376.	296.	80.	0.7798	27.	62.
	126.	•	126.	399.	296.	103.	0.7420	93.	76.
7 1978	34.	•	34.	388.	296.	92.	0.7060	24.	65.
8 1979		•	34.	331.	296.	35.	0.6717	23.	24.
9 1980	34.	•	34.	383.	296•	87.	0.6391	22.	56.
10 1981	34.	•	34.	481.	296.	185.	0.6081	21.	112.
-4	34.	•	34.	447.	296.	151.	0.5786	20.	87.
12 1983	-98-	-20	-136.	ò	•	•	0.5505	-75.	<u>.</u>
TOTAL	657.	0	857.	4022.	2960	1062.		773.	773.
	INTEREST PER_CENI	EST		BENEFIT/COST RAILO		PRESENT	PRESENT VALUE IN \$ 1000 EXENUE DUILAY BA	1000 BALANCE	
	9	88		0.97		735.		-25.	
		86		9		500			
		200		0.72		466.		179	
	20.	00		0.63		377.	595	-217	
	30.00	• 00		0.51		265.		-252-	
	ã∎								

**EXCLUCING DEPRECIATION, INTEREST, AND INCCME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

INVESTMENT FEASIBILITY ANALYSIS

3 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 35 LITTER 9.0 HGG PR. -\$1 GRAIN PR. \$2.00 FEED EFF. 3.5

ANNUAL RETURN ON CAPITAL 10.49 PERCENT

•	į		INVESTMENT (\$ 1000	-	OPER	OPERATING (\$ 1000	-		PRESENT VALUE	VALUE
NO.	YEAR IDENT.	FACILITIES	WORKING	TCTAL	TOTAL	OPERATING EXPENSES ##	REVENUE	<u> </u>	INVESTMENT	NET
0	1971	0	0	0	•0	0		1.0000	0	•
-	1972	511.	0	511.	•	0		0.9051	462.	•
7	1973	. 4 E	50.	84.	503.	296.	207.	0.8192	69	170.
3	1974	34.	0	34.	443.	296.	147.	0.7414	25.	109.
4	1975	34.	0	34.	338.	296.	42.	0.6711	23.	28.
5	1976	34.	•	34.	398	296.	102.	0.6074	21.	62.
9	1977	126.	•0	126.	420.	296.	124.	0.5497	•69	•39
~	1978	34.	0	34.	410.	296.	114.	6.4975	17.	57.
8	1979	34.	•0	34.	353.	296.	57.	0.4503	15.	26.
σ	1980	34.	•	34.	405.	296.	109.	0.4076	14.	44
10	1981	34.	0	34.	503	296.	207.	0.3689	13.	76.
=	1982	34.	•	34.	470.	296.	174.	0.3339	11.	56.
12	1983	-86.	-56-	-136.	•	•0	•	0.3022	-41.	ċ
	TOTAL	857.	0	857.	4243.	2960.	1283.		698.	.869
		INTEREST PER_CENT	ST	• 1	BENEFIT/COST		PRESENT	VALUE IN \$ 1000 DUILAY BA	1000 BALANCE	
		9	0.0		1.17		888	760.	128.	
		10.01	20		1.02		716.			
		15.00	8		0.87		563.		-82.	
		20.00	0.0		92.0		455.		-140.	
		30.00	00		0.61		317.		-199.	
-										

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

P. PHILLIPS AG. ECON. 641, K.S.U.

4 ANALYSIS OF 600 SGW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.C HCG PR. - 1.50 GRAIN PR. \$2.00 FEED FFF. 3.5

ANNUAL RETURN ON CAPITAL 13.52 PERCENT

FACILITIES WORKING TOTAL COPERATING NET VALUE	XF AR	œ	INVESTA	INVESTMENT (\$ 1000	-	OPLR	OPERATING (\$ 1000	-	TWIDE	PRESENT VALUE	VALUE
1971 1972 1974 1975	0	CENT.	FACILITIES	WORKING	TCTAL		OPERATING EXPENSES **	NET REVENUE	VALUE	INVESTMENT	NET REVENUE
1972 1311. C. 511. O. O. O. 0.08859 456. 1974 34. 56. 34. 515. 296. 158. 0.6815 23. 1975 34. 6. 34. 454. 296. 158. 0.6815 23. 1976 34. 0. 34. 432. 296. 113. 0.6021 20. 1976 34. 0. 34. 432. 296. 113. 0.6021 20. 1978 34. 0. 34. 412. 296. 125. 0.6471 18. 1979 34. 0. 34. 416. 296. 126. 0.3625 12. 1981 34. 0. 34. 448. 296. 126. 0.3625 12. 1982 34. 0. 34. 482. 296. 126. 0.3625 12. 1983 -86. -50. -136. 0. 61. 0. 1983 -86. -50. 136. 0.2477 86. 1984 857. 0. 857. 4367. 2960. 1407. 661. 661. 1985 8.00 1.19 8.00 1.19 8.00 1.10 0. 6.06 6.18 6.18. 6.45. -27. 15.00 0.84 6.95 5.17. -169. 1987 34. 50. 6.18 6.18. 6.18. 6.45. -27. 1987 34. 50. 6.18. 6.18. 6.18. 6.18. 6.18. 1988 34. 6. 6.45. -27. 1989 34. 6.18. 6.45. -27. 1981 34. 6.18. 6.45. -27. 1982 34. 6.18. 6.45. -27. 1983 34. 6.18. 6.18. 6.45. -27. 1984 34. 6.18. 6.18. 6.18. 6.18. 1985 34. 6.18. 6.18. 6.18. 6.18. 6.18. 1985 34. 6.18. 6.18. 6.18. 6.18. 6.18. 6.18. 1985 34. 6.18	O	1971	0	0	.0	0	3	0.	1.0000	0	
1973 34, 50, 84, 515, 296, 158, 0.6875 65, 17759 1974 1974 34, 50, 34, 454, 506, 638, 0.6875 20, 6375 1976 34, 0.0 34, 400, 296, 136, 0.6021 20, 6371 20, 126, 0.6021	-	1972	511.	3	511.	•	0.0	•	0.8809	450.	• •
1974 34. 5. 34. 454. 296. 158. 0.6835 23. 1975 34. 5. 34. 454. 296. 158. 0.6837 20. 1976 34. 5. 34. 409. 296. 113. 0.5303 18. 1977 126. 5. 34. 409. 296. 113. 0.5303 18. 1978 34. 5. 34. 421. 296. 68. 0.3025 12. 1986 34. 5. 34. 416. 296. 68. 0.3325 12. 1981 34. 5. 34. 482. 296. 126. 0.3113 11. 1982 34. 5. 34. 482. 296. 126. 0.2477 8. 1983 -86. -50. -136. -136. -136. -136. -136. 1074 857. 0. 857. 4367. 2960. 1407. -160. 1075 1. 2960. 1407. -136. 1076 1. 2960. 1407. -136. 1076 1. 2960. 1407. -1407. 1077 1407 -1407. 1077 1407 -1407. 1077 -169. 1077 -169. 1087 -136. -136. 1076 -136. -136. 1076 -136. 1077 -169. 1077 -169. 1078 -136. 1079 -136. 1081 -136.	2	1973	34.	90	84.	515.	296.	219.	0.7759	65.	170.
1975 34. 6.	en.	1974	34.	ů	34.	454	296.	158	0.6835	23.	166.
1976 34. 0.5 3.0 3 18. 18. 19. 0.5 3.0 3 18. 1977 126. 0.5 3.0 3 18. 1978 126. 0.4671 59. 1978 1978 126. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 0.4671 59. 125. 125. 0.4671 59. 125. 125. 0.4671 59. 125. 125. 125. 0.4671 59. 125	ব	1975	34.	Ç	34.	359.	296.	63.	0.6021	20.	38.
1977 126. 0.4 126. 432. 296. 136. 0.4671 59. 1978 34. 0. 34. 421. 296. 125. 0.4115 14. 1978 34. 0. 34. 416. 296. 126. 0.3625 12. 1980 34. 0. 34. 416. 296. 126. 0.3193 11. 1981 34. 0. 34. 482. 296. 126. 0.3193 11. 1983 34. 0. 34. 482. 296. 126. 0.2477 8. 1983 -86. -136. 0. 0.2 0.2 12. 1983 -86. -136. 0. 0.2 0.2 1983 -86. -136. 0.2 0.2 1983 -86. -136. 0.2 0.2 1984 -857. -136. 0.2 0.2 1985 -86. 0.2477 8. 1985 -86. 0.2477 8. 1986 -857. -1407. 0.2 1987 -86. -1407. 0.2 1988 -86. 0.2 0.2 1989 -86. 0.2 0.2 1980 -86. 0.2 0.2 1980 -86. 0.2 0.2 1981 -86. 0.2 0.2 1982 -86. 0.2 0.2 1983 -86. 0.2 0.2 1984 -875. 760. 704. 1985 -80. 0.6 1985 -86. 0.2 1986 -86. 0.2 1987 -86. 0.2 1988 -86. 0.2 1989 -86. 0.2 1989 -86. 0.2 1989 -86. 0.2 1989 -86. 0.2 1989 -86. 0.2 1980 -86.	ŧD.	1976	34.	9	34.	*60*	296.	113.	0.5303	.82	• 99
1978 34. 6. 34. 421. 296. 125. 0.4115 14. 1979 34. 0. 34. 416. 296. 68. 0.3025 112. 1981 34. 0. 34. 416. 296. 126. 0.3123 11. 1982 34. 0. 34. 416. 296. 126. 0.3123 11. 1983 34. 0. 34. 416. 296. 126. 0.2012 10. 1983 -66. -50. -136. 0.2477 88. 1983 -66. -60. 68. 681. 10.00 1.28 875. 2960. 1407. 10.00 1.12 875. 760. 215. 10.00 1.12 645. 704. 645. 10.00 0.96 645. 517. -169. 1973 11. 140. 1974 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 1975 197	•	1977	126.	° C	126.	432.	296.	136.	0.4671	65	64.
1979 34. 0. 34. 364. 296. 684. 0,3625 12. 1982 34. 0. 34. 416. 296. 126. 0,3193 11. 1981 34. 0. 34. 482. 296. 126. 0,2812 10. 1982 34. 0. 34. 482. 296. 126. 0,2812 10. 1983 -66. -50. -136. 0. 0.2812 10. 1983 -66. -136. -136. 0. 1983 -136. -136. -136. -130. 1084 -136. -136. -130. 1085 -136. -136. -130. 1086 -136. -136. -130. 1086 -136. -136. -130. 1086 -136. -136. 1086 -136. -136. 1086 -136. -136. 1086 -136. -136. 1086 -136. -136. 1086 -136. -136. 1086 -136. -136. 1086 -136. 1086 -136. 1087 -136. 1088 -136.	7	1978	34.	6	34.	421.	296.	125.	0.4115	14.	51.
1980 34. 0. 34. 416. 296. 120. 0.3193 11. 1981 34. 0. 34. 416. 296. 219. 0.3193 11. 1982 34. 0. 34. 482. 296. 186. 0.2477 8. 1983 -86. -50. -136. 0. 1983 -86. -50. -136. 0. 1984 -96. -136. 0. 1985 -96. 140. 0.277 8. 1000 1.28 1407. 142. 1000 1.28 113 113 142. 1000 1.12 113 1142. 1000 1.12 0.96 6.18. 645. -27. 1000 0.96 0.67 348. 517. -169. 1000 0.67 348. 517. -169. 1000 0.67 348. 517. -169. 1000 0.36 0.67 348. 517. -169. 1000 1.69. 140. 1000 1.69. 140. 1000 1.69. 140. 1000 1.69. 140. 1000 1.69. 140. 1000 1.69. 1000 1.69. 140. 1000 1.69.	Œ	1979	34.	0	34.	364.	296.	68.	0.3625	12.	25.
1981 34. 5. 5. 296. 219. 6.2812 10. 1982 34. 6. 6. 6. 1983 -86. -50. -136. 6. 1983 -86. -50. -136. 6. 107AL 857. 4367. 296. 1407. 6. 107AL 857. 4367. 296. 1407. 6. 10. 10. 10.	ď	1980	34.	0	34.	416.	296.	126.	0.3193	Ξ.	38.
1982 34. 0. 34. 482. 296. 186. 0.2477 8. 1983 -86. -50. -136. 0. 1983 -86. -50. -136. 0. 1014 857. 4367. 2960. 1407. 661. 1026 16.00 1.28 873. 731. 142. 10.00 1.12 880. 1.12 880. 10.00 1.12 873. 731. 142. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.55. -27. 10.00 1.12 6.50 6.50 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 6.50 6.50 10.00 1.12 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6.50 6	10	1981	34.		34.	515.	296.	219.	0.2812	10.	62.
1983	=	1982	34.	•	34.	482	296-	186.	0-7477	ex	44
NTEREST PRESENT VALUE IN \$ 100°	12	1983	-86.	-50-	-136.	0	c	o	0.2182	-30*	.5
INTEREST FER_CENI 6.00 8.00 1.28 8.00 1.19 8.00 1.19 8.00 1.19 8.00 1.19 8.00 1.19 8.00 1.10 1.10 8.00 1.10 8.00 1.10 1.10 8.00 1.10 8.00 1.10 8.00 1.10 8.00 1.10 8.00 1.10 8.00 1.10 1.10 8.00 1.10 8.00 1.10 8.00 1.10 8.00 1.10										1 1 1 1 1 1 1 1 1	
BENEFIT/COST BENEFIT/COST Location BENEFIT VALUE IN \$ 1000 BENEFIT/COST Location Benefit Service in \$ 1000 BENEFIT/COST BE		OTAL	857.	•	857.	4367.	2960.	1407.		661.	.199
BENEFIT/COST BENEFIT/COST 1.28 1.28 1.19 1.19 1.12 1.12 1.12 1.12 1.14 1.15 1.15 1.15 1.15 1.16 1.17 1.18 1.18 1.19 1.19 1.18 1.19 1.19 1.19											
1.28 975. 760. 15.19 15.12 75. 750. 750. 750. 750. 750. 750. 750.			INTERE	ST	60	ENEFIT/COST		PRESENT	VALUE	1000	
1.28 975. 760. 1.19 873. 731. 1.12 704. 0.96 618. 645. 0.84 645. 0.67 348. 517.			LEN-14	103	•	RETTR		-KEVENUE.	1	DALANLE	
1.19 1.12 0.96 0.84 0.84 0.67 348.			9.9	90		1.28		975.		215.	
1.12 766. 704. 0.96 618. 645. 0.84 499. 595. 0.67 348. 517.			9.6	סנ		1.19		873.		142.	
0.96 618, 645, 0.84 499, 595, 0.67 348, 517,			10.01)C		1.12		786.		82.	
0.84 499, 595. 0.67 348, 517.			15.0	00		96*0		618.		-27.	
.cd 0.67 348. 517.			20-0	00		0.84		*66*		-96-	
			30°(9:		29.0		348		-169.	

**EXCLUCING DEPRECIATION, INTEREST, AND INCCME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

5 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. +5.50 GRAIN PR. \$2.00 FEED EFF. 3.5

ANNUAL RETURN ON CAPITAL 18.07 PERCENT

1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2							COCCENT		
- 1		WORKING CAPITAL	TCTAL		OPERATING EXPENSES **	REVENUE	F > IT	INVESTMENT	NET REVENUE
	:	.0	0.	•0	0.0	0	1.0000		0
1 1972	511.		511.	ò	• 3		69480	433.	• •
	34.	50.	84.	535.	296.	239.	0.7173	• 19	17
	34.	•	34.	475.	296.	179.	0.6075	21.	31
4 1975	34.	•	34.	370.	296.	14.	0.5146	17.	Ř
	34.	5	34.	430.	296.	134.	0.4358	15.	58.
	126.	O	126.	452.	296.	156.	0,3691	47.	58.
7 1978	34.	٠ •	34.	441.	296.	145.	0.3126	11.	45.
	34.	ئ	34.	384.	296.	80.	0.2648	6	23.
9 1980	34.	•	34.	437.	296	141.	0.2242	•	3
	34.	0	34.	535.	296.	634,	0.1899	•	4
_	34.	0	34.	503.	296.	207.	0.1609	\$	33.
2 1983	-86.	-26-	-136.	• •	o	0.	0.1362	-19.	J
TOTAL	857.	• 2	857.	4562.	2960.	1602.		613.	613.
	INTEREST PEB_CENI	ST NI	ъ,	BENEFIT/COST		PRESENT	VALUE IN \$ 1000	BALANGE	
	00-9	0		1.46		1109.		349.	
	8.00	0		1,36		993		262.	
	10.00	0		1.27		894	704.	189	
	15.00	0		1.09		702.		57.	
	20-02	•,		0.95		566.		-62-	
	30.00	O		0.76		393.		-123.	

**EXCLUCING DEPRECIATION, INTEREST, AND INCOME TAX

6 ANALYSIS OF 600 SON FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. +\$1.00 GRAIN PR. \$2.00 FEED EFF. 3.5

ANNUAL RETURN ON CAPITAL 20.19 PERCENT

MORKING TOTAL TO	•	VE A D	INVEST	INVESTMENT (\$ 1000	~	OPER	OPERATING (\$ 1300	•	TMSSAGO	0.000	VALUE
1971 C. C. C. C. C. C. C. C		TOENT.	FACILITTES	WORKING	TCTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE	VALUE FACTOR	INVESTMENT	NET REVENUE
1972 511. 50. 561. 0. 0. 0. 0. 0. 0. 0.	v	1971	3	0	0.	0	.0	0	1.0050	0	
1973 34. 0. 34. 547. 296. 251. 0.6923 1974 34. 0. 34. 486. 296. 1990. 0.5560 1975 34. 0. 34. 445. 296. 1990. 0.5560 1977 126. 0. 34. 445. 296. 144. 0.3968 1978 34. 0. 34. 452. 296. 167. 0.3918 1978 34. 0. 34. 452. 296. 156. 0.2271 1980 34. 0. 34. 546. 296. 151. 0.1911 1981 34. 0. 34. 546. 296. 151. 0.1911 1982 34. 0. 34. 546. 296. 151. 0.1911 1983 -E6. -50. -136. 6.70. 1712. TOTAL 857. 8670 1.44 6.00 1.44 1.55 10.00 1.45 1.45 10.00 1.15 1.15 10.00 1.15 0.80 1.15	-	1972	511.	50.	561.	.0	° 0	o	0.8320	467.	ů.
1974 34. 00. 34. 486. 296. 190. 0.5760 1975 34. 00. 34. 446. 296. 190. 0.5760 1976 34. 00. 126. 296. 144. 0.3918 1977 126. 00. 126. 463. 296. 167. 0.3318 1978 34. 00. 34. 447. 296. 156. 0.2761 1980 34. 00. 34. 447. 296. 151. 0.1911 1981 34. 00. 34. 516. 296. 151. 1982 34. 00. 34. 516. 296. 151. 1983 -26. -136. -26. 0.1101 1983 -26. -136. -26. 1712. 107AL 857. 4672. 2960. 1712. 1186. 763. 10.00 1.45 1062. 753. 10.00 1.45 1062. 753. 10.00 1.15 1.15 750. 10.00 1.15 1.15 750. 10.00 1.15 1.15 750. 10.00 1.15 1.15 750. 10.00 1.15 1.15 750. 10.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	N	1973	34.	• •	34.	547.	296.	251.	6.6923	24.	174.
1975 34. 0. 34. 446. 296. 147. 0. 3988 1976 1976 1976 1976 1976 1977 126. 0. 136. 465. 296. 147. 0. 3988 1977 126. 0. 34. 452. 296. 156. 0. 1978 1979 34. 0. 34. 477. 296. 156. 0. 1971 1981 34. 0. 34. 477. 296. 151. 0. 1971 1981 34. 0. 34. 477. 296. 151. 0. 1971 1981 1982 34. 0. 34. 477. 296. 151. 0. 1971 1981 1982	6	1974	34.	0	34.	486.	296	190.	0.5760	20.	109.
1976 34. C. 34. 44C. 296. 144. 0.3988 1977 126. O. 126. 463. 296. 157. 0.3318 1978 34. O. 34. 495. 296. 157. 0.3318 1980 34. O. 34. 447. 296. 151. 0.2297 1981 34. O. 34. 447. 296. 151. 0.1011 1982 34. O. 34. 516. 296. 219. 0.1021 1983 -E6. -50. -136. C. O. 101 TOTAL E57. O. 857. 4672. 2960. 1712. 1002 1.55 10.00 1.55 1186. 753. 1003 1.05 1.15 0.00 1.15 1004 1.05 1.05 0.000 1.05 1.05 0.000 1.05 1.05 0.000 1.05 1.05 0.000 1.05 1.05 0.000 1.05 1.05 0.000 1.05 0.000	4	1975	34.	•0	34.	381.	296.	85.	0.4793	16.	41.
1977 126 0 126 463 296 167 0.3318 1978 34 0 34 452 296 156 0.2761 1978 34 0 34 447 296 151 0.2761 1980 34 0 34 447 296 296 0.2761 1981 34 0 3 4 447 296 296 250 0.1990 1982 34 0 3 4 447 296 296 250 0.1991 1983 - 2650136	S	1976	34.	ડ	34.	446.	296.	144.	0.3988	14.	57.
1978 34. 0. 34. 452. 296. 156. 0.276. 1979 34. 0. 34. 452. 296. 156. 0.276. 1981 34. 0. 34. 477. 296. 151. 0.1591 1982 34. 0. 34. 515. 296. 151. 0.1591 1982 34. 0. 34. 515. 296. 151. 0.1323 1982 34. 0. 857. 4672. 2960. 1712. TOTAL 857. 0. 857. 4672. 2960. 1712. REMERENT VALUE IN \$ 11 REMERENT OF 1.44 1.35 1062. 753. 1062. 753. 1062. 750. 11.35 10.00 1.35 10.00 1.35 1.00	v	1977	126.	•	126.	463.	296.	167.	0.3318	42.	55.
1979 34. 0. 34. 395. 296. 99. 0.2297 1980 34. 0. 34. 447. 296. 151. 0.1911 1981 34. 0. 34. 246. 296. 151. 0.1501 1983 -6650136. C. 0. 657. 4672. 2960. 1712. TOTAL 857. 0. 857. 4672. 2960. 1712. INTEREST RELEGIO	~	1978	34.	0	34.	452.	296.	156.	0.2761	6	43.
1980 34. 0. 34. 447. 296. 151. 0.1911 1981 34. 0. 34. 546. 296. 250. 0.1590 1982 34. 0. 34. 515. 296. 250. 0.1590 1983 -26. -50. -136. C. 0. 1983 -26. -26. -136. C. 0. 1984 -26. -26. 0.101 1985 -26. 0.101 1985 -26. 0.101 1985 -26. 0.101 1985 -26. 0.101 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1986 -296. 1712. 1987 -296. 1986 1986 1986 1988 -296. 1986 1986 1988 -296. 1986 1986 1988 -296. 1986 1989 -296. 1980 1980 -296.	8	1979	34.	ċ	34.	395.	296.	•66	0.2297	80	23.
1981 34. 0. 34. 515. 296. 250. 0.1590 1982 34. 0. 34. 515. 296. 219. 0.1323 1983 -26. -136. C. 0. 10.101 1984 1985 C. 0.1323 1014 EER CENI ENNEFIT/COST ERVENUE OUILAY 1020 1.00 1.00 1020 1.00 1030	6	1980	34.	•	34.	447.	296.	151.	0.1911	•	29.
1982 34. 0. 34. 515. 296. 219. 0.1323 1983 -6650136. C. 0. 0. 0.1101 TOTAL 857. 0. 857. 4672. 2960. 1712. INTEREST PER CENI 6.00 1.44 1.55 10.62. 755. 652. 1062. 750. 651. 120 605. 662. 652. 662. 652.	2	1961	34.	•	34.	546.	296.	250.	0.1590	2.	*0*
TOTAL 857136. C. 0. 1712. TOTAL 857. 4672. 2960. 1712. INTEREST PERCENT VALUE IN \$ 10 to 0.1101 6.00 1.55 1.35 1.35 1.35 1.35 1.35 1.35 1.35	17	1982	34.	ò	34.	515.	296.	219.	0.1323	*	29.
INTEREST BENEFIT/COST PRESENT VALUE IN \$ 10	12	1983	-66-	-20-	-136.	ċ	•	.	0.1101	-15.	S
NTEREST NEWEFIT/COST PRESENT VALUE IN \$ 10							-				
BENEFIT/COST BAILD BEYENUE IN \$ 10 1.55 1.44 1.35 1.35 1.15 1.00 0.80 PRESENT VALUE IN \$ 10 BEYENUE IN \$ 1		TOTAL	857.	•0	857.	4672.	2960	1712.		•009	•309
BENEFIT/COST BENEFIT/COST 1.55 1.44 1.44 1.35 1.35 1.15 1.00 0.80 PRESENT VALUE IN \$ 10											
1.55 1.44 1.35 1.35 1.15 1.00			INTERE	ST	- 1	SENEFIT/COST		PRESENT REVENUE	VALUE IN S	1000 BALANCE	
1.55 1.44 1062. 1.35 955. 1.15 750. 0.80 420.											
1.44 1062. 1.35 955. 1.15 750. 1.00 605.			9-9	9		1.55		1186.		453.	
1.15 1.00 0.80 4.20.			80 5	0.0		1.25		1062.		327	
1.00 605.			15.0			1.15		750.		- 60	
0.80			20.02	00		1.00		605			
			30.00	23		0.80		420.		-106.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

COLUMBIA, MO

LOGISTICS RESEARCH

FEASIBILITY ANALYSIS LESINE

7 ANALYSIS OF 6CO SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 35 LITTER 8.0 HOG PR. +\$2 GRAIN PR \$2.00 FEED EFF 3.5

ANNUAL RETURN ON CAPITAL 24.62 PERCENT

0 4 0 7	1 66 33		1	Photograph			10000		
NO. ICENT.	FACILITIES	MORKING	TCTAL	TOTAL	OPERATING EXPENSES **	REVENUE	VALUE FACTOR	INVESTMENT	NET REVENUE
1971	0	0	0	0	0.	0	1.3000	-C	Ó
1972	511.	• •	511.	•	•	0	0.8024	41C.	J
1973	34.	50.	84.	568.	296.	272.	0.6439	54.	175.
1974	34.		34.	508.	296	212.	0.5166	18.	110
1975	34.	0	34.	400	296.	104.	0.4146	14.	43.
1976	34.	3	34.	461.	296.	165.	0.3326	11.	55.
1977	126.	0	126.	483.	296	187.	£.2669	34.	ស់
1978	34.	•0	34.	473.	296.	177.	0.2142	7.	36.
8 1979	34.	.5	34.	416.	296.	120.	0.1719	•	21,
1980	34.	•	34.	468	296.	172.	0.1379	5.	24.
10 1981	34.	•	34.	566.	296.	270.	0-1107	;	36
0861 6	34.	• U	34.	426.	303.	123.	0.0888	3,	7
12 1983	-86-	-53.	-136.	•	3	•0	5.0712	-10.	C
TOTAL	857.	Ğ	857.	4169.	2967.	1802.		556.	956.
	INTEREST PER_CENI	ENI	6 1	BENEFIT/COST RAIIO		PRESENT	VALUE IN \$ 1000	1000 BALANGE	
	00.9	00		1.67		1268.	760.	508.	
	00-8	00		1.56		1140.		429	
	• • •	200		0 * • 1		1030		976	
	00-61	000		1.26		815.		170	
	7.00	0 0		11.1		-199		67.	
	30.06	20		06.0		463		-24.	

** EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

8 ANALYSIS GF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 15 LITTER 8.6 HOG PR. STD GRAIN PR. \$2.00 FEED EFF 3.5 LAB**.20

ANNUAL RETURN ON CAPITAL 21.01 PERCENT

24 11						The second secon		֡		
NO. IDENT			WORK ING CAPITAL	TCTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE	VALUE	INVESTMENT	NET REVENUE
0 1971	971 0.		0.0	0	•0	0.0	0	1.0000	0.0	5
1 19	972 370.	ė.	0	370.	0	ئ	o	0.8264	306.	ò
2 19	17 573	:	51.	122.	525.	298.	227.	0.6829	83.	155.
3 19		. 5	0	34.	465.	298.	167.	0.5644	19.	• 46
-			່ວ	34.	359.	298	61.	0.4664	16.	28.
5 19		•	0	34.	420.	298.	122.	0.3854	13.	47.
6 19	-	2.	3	146.	445	298.	144.	0.3185	47.	46.
61 1	978 34.	•	0.	34.	431.	298	133.	0.2632	•6	35.
_	979 34.		0	34.	375.	298.	.11.	0.2175	7.	17.
61 6	980	340	0	34.	426.	298.	128.	0.1798	•9	23.
10 19	981 34	34.	•0	34.	525.	298.	227.	0.1486		34.
_	250	9	0	34.	493	298.	195.	0.1228	ţ	24.
12 19	.983 -71.	:	-51.	-122.	•0	· .	0	0.1015	-12.	C
TOTAL	AL 788.		0	788.	4461.	2980	1481.		503.	503.
	;) (()	200	ć						
	3	PER_CENT		o į	BENEFIT CUST		AEVENUE.	EVENUEBAILAYBAI	BALANCE	
		00.9			1.50		1025.	. 682.	343.	
		8.00			1.41		918.	. 651.	266.	
		10.00			1,33		826.		203.	
		15.00			1.15		649		87.	
		20.00			1.02		524.	. 512.	12.	
		30.00			0.84		364.		-11.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

9 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 45 OR LAND \$750 ACRE LITTER 8.0 HOG PR. STO GRAIN PR. \$2.00 FEED EFF 3.5

ANNUAL RETURN ON CAPITAL 13.47 PERCENT

VALUE	NET REVENUE	3	•	178.	116.	38.	.99	68.	26.	2.)•	45.	65.	64	• •	756.								
PRESENT VALUE	INVESTMENT		486.	65.	23.	21.	18.	68.	14.	12.	11.	10.	8	-31.	706.	1000 BALANCE		• 677	151.	86.	-36-	-104.	-182.
PRESENT	VALUE	1-0000	0.8813	0.7766	0.6844	0.6032	0.5315	0.4684	0.4128	C.3638	0.3206	0.2825	0.2490	0.2194		PRESENT VALUE IN \$ 1000 EVENUE OUTLAY BAI		010	.621	751.	688	634.	551.
-	NET REVENUE	0	0	229.	169.	63.	124.	146.	135.	79.	130.	229.	197.	0	1501.	PRESENT		1039	930.	837.	658	531.	369.
OPERATING (\$ 1000	OPERATING EXPENSES **	0		296.	296.	296.	296.	296.	296.	296.	296.	296.	296.	• 0	2960.								
OPERA	TOTAL REVENUE		0	525.	465.	359.	420	442.	431.	375.	426.	525.	493.	•	4461.	BENEFIT/COST RATIC		1.50	1.19	1.12	96.0	0.84	19.0
-	TCTAL		551.	84.	34.	34.	34.	146.	34.	34.	34.	34.	34.	-140.	913.	6 0	i:						
INVESTMENT (\$ 1000	WORKING CAPITAL		0	50.	0.	.0		0	3	0	• •	0	ċ	-56-	0	5.5	! ,					_	•
INVESTME	FACILITIES		551.	34.	34.	34.	34.	146.	34.	34.	34.	34.	34.	-96-	913.	INTEREST		00.9	9.00	10.00	15.00	20.00	30.00
VEAR	ICENT.	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	TCTAL								
×	ON NO	0	-	2	e	4	€	9	_	80	σ	10	11	12									

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSIS

10 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.00 FEED EFF 3.0

ANNUAL RETURN ON CAPITAL 25.31 PERCENT

	HORNING TOTAL OPERATING NET VALUE INVESTMENT REVERED OF STATE OF S	INVESTMEN	INVESTMENT (\$ 1000		OPER	OPERATING (\$ 1000	•	PRESENT	PRESENT VALUE	VALUE
0. 0. 0. 0. 0. 0. 0. 0.07980 C. 43. 77. 525. 256. 269. 0.6368 49. 17. C. 34. 465. 256. 269. 0.6368 49. 17. C. 34. 462. 256. 103. 0.6052 11. C. 34. 420. 256. 103. 0.2061 7. O. 34. 420. 256. 116. 0.2562 11. O. 34. 420. 256. 1170. 0.1644 6. O. 0. 0.1047 4. O. 0. 0.1047 1. O. 0. 0. 0.1047 1. O. 0. 0. 0. 0. O. 0.	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0		WORKING CAPITAL	-	REVENUE	*	∝	VALUE	INVESTMENT	NET REVENUE
43. 511. 0. 0. 0.7980 408. 43. 77. 525. 256. 269. 0.5368 49. 17. 6. 34. 465. 256. 103. 0.5082 17. 11. 1. 465. 256. 103. 0.4055 14. 11.	43. 77. 525. 266. 269. 0.7980 408. 63. 47. 465. 256. 269. 0.6368 49. 17. 64. 465. 256. 209. 0.5082 17. 65. 126. 442. 256. 103. 0.3082 11. 66. 34. 420. 256. 164. 0.3286 11. 67. 34. 420. 256. 164. 0.3286 11. 68. 442. 256. 164. 0.3286 11. 69. 34. 422. 256. 170. 0.1644 6. 60. 34. 426. 256. 170. 0.1047 4. 60. 34. 428. 256. 270. 0.1047 4. 60. 34. 461. 256. 1901. 5.0886 3. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60.		3		0		l	1.0000	0	0
43. 77. 525. 256. 269. 0.6368 49. C. 34. 465. 256. 103. 0.40582 17. C. 34. 420. 256. 103. 0.4059 11. C. 34. 420. 256. 103. 0.4059 11. C. 34. 420. 256. 104. 0.3236 11. C. 34. 421. 256. 119. 0.1644 6. C. 34. 493. 256. 119. 0.1644 6. C. 857. 4461. 2560. 1901. BENEFIT/COST REYENUE IN \$ 1000 REYENUE —QUILAY BALANCE— 1.51 1.51 1.51 1.51 1.51 1.51 1.51 1.5	43. 77. 525. 256. 269. 0.6368 49. 5. 34. 465. 256. 103. 0.40582 17. 5. 34. 465. 256. 103. 0.4052 14. 6. 34. 420. 256. 104. 0.42582 11. 6. 34. 421. 256. 1164. 0.2582 11. 6. 34. 422. 256. 1164. 0.2582 11. 6. 34. 422. 256. 1190. 0.1644 6. 6. 34. 426. 256. 1190. 0.1644 6. 6. 34. 493. 256. 237. 0.4067 4. 6. 34. 493. 256. 1901. 5.60836 6. 857. 4461. 2560. 1901. 5.6083 8ENEFIT/COST REVENUE OUTLAY BALANCE 1. 1.74 1.51 1.62 1179. 757. 560. 191. 1.51 1.51 1.65 1.65 1.65 1.65 1.65 1.		•	511.	•	0	0	0.7980	. 80 %	ن
C. 34. 465. 256. 209. 0.5082 17. C. 34. 420. 256. 164. 0.3236 11. C. 34. 420. 256. 164. 0.3236 11. C. 34. 421. 256. 1193. 0.2582 11. C. 34. 422. 256. 1194. 0.2582 11. C. 34. 422. 256. 1199. 0.1644 6. C. 34. 425. 256. 1199. 0.1644 6. C. 34. 426. 256. 1190. 0.1644 6. C. 34. 426. 256. 170. 0.1647 80. C. 34. 137. 757. 560. 1179. 126. 451. 191. 151 151 151 161. 161.	C. 34. 465. 256. 209. 0.5082 17. C. 34. 450. 256. 103. 0.5082 17. C. 34. 420. 256. 164. 0.328 11. C. 34. 420. 256. 166. 0.2582 33. C. 34. 421. 256. 175. 0.2061 7. C. 34. 422. 256. 176. 0.1644 6. C. 34. 426. 256. 177. 0.1644 6. C. 34. 426. 256. 170. 0.1644 6. C. 34. 428. 256. 170. 0.1644 6. C. 34. 439. 256. 269. 0.1047 4. C. 857. 4461. 2560. 1901. 540. BENEFIT/COST REYENT VALUE IN \$ 1000 6. C. 857. 1.74 1.51 832. 641. 191. C. 87. 1.30 832. 641. 191. C. 34. 464. 51349.		43.	.11.	525	256.	269.	0.6368	49.	171.
C. 34. 359. 256. 103. 0.4055 14. C. 34. 420. 256. 164. 0.3236 11. C. 34. 431. 256. 1175. 0.2061 7. C. 34. 432. 256. 1179. 0.1644 6. C. 34. 456. 256. 269. 0.1047 4. C. 34. 493. 256. 256. 201047 4. C. 857. 4461. 2560. 1901. 5.0083 BENEFIT/COST REYENUE IN \$ 1000 REYENUE RAILE 1.74 1317. 757. 560. 1.30 832. 641. 1911. 800. 1.30 832. 641. 1911.	C. 34. 359. 256. 103. 0.4055 14. C. 34. 420. 256. 164. 0.2582 11. C. 126. 442. 256. 1164. 0.2582 13. C. 34. 426. 256. 1175. 0.2061 7. C. 34. 426. 256. 119. 0.1047 4. C. 857. 4461. 2560. 1901. C. 857. 4461. 2560. 1901. BENEFIT/COST BENEFIT/COST C. 832. 164. 0.2682 13. C. 857. 266. 269. 0.1047 4. C. 857. 4461. 2560. 1901. BENEFIT/COST C. 857. 1317. 757. 560. 11.51 800. C. 932. 641. 1901. C. 857. 800. C. 851349.		. ت	34.	465.	256.	209.	0.5082	17.	106.
C. 134. 420. 256. 164. 0.3236 111. C. 126. 442. 256. 175. 0.2582 33. C. 34. 431. 256. 119. 0.1644 6. C. 34. 431. 256. 119. 0.1644 6. C. 857. 4461. 2560. 1901. BENEFIT/COST REVENUE IN \$ 1000 REVENUE 1.51 1.	C. 126. 442. 256. 164. 0.3236 11. C. 34. 431. 256. 1196. 0.2582 33. C. 34. 472. 256. 1192. 0.1644 6. C. 34. 472. 256. 1190. 0.1644 6. C. 34. 472. 256. 1190. 0.1644 6. C. 855. 256. 256. 237. 0.0657 -9. C. 857. 4461. 2560. 1901. 8 1000 BENEFIT/COST BENEFIT/COST 1.74 1.74 1.34 1.34 1.34 464. 51349.		0	34.	359.	256.	103.	0.4055	14.	42.
0. 126. 442. 256. 186. 0.2582 33. 0. 34. 431. 256. 175. 0.2061 7. 0. 34. 426. 256. 170. 0.1644 6. 0. 34. 426. 256. 170. 0.1644 6. 0. 34. 426. 256. 269. 0.1047 4. 0. 34. 493. 256. 249. 0.1047 4. 0. 4461. 2560. 1901. 5540. 5540. 560. 1.74	0. 126. 442. 256. 186. 0.2582 33. 0. 34. 431. 256. 1175. 0.2061 7. 0. 34. 426. 256. 1179. 0.1644 6. 0. 34. 426. 256. 170. 0.1844 6. 0. 34. 426. 256. 170. 0.1844 6. 0. 34. 426. 256. 170. 0.1847 4. 0. 34. 493. 256. 256. 297. 0.0836 33. 0. 857. 4461. 2560. 1901. 546. 541. 191. 191. 153. 0.91		ئ	34.	420.	256.	164.	0.3236	11.	53.
0. 34. 431. 256. 175. 0.2061 7. 256. 179. 0.1644 6. 34. 375. 256. 119. 0.1644 6. 34. 426. 256. 119. 0.1644 6. 34. 426. 256. 269. 0.1047 4. 34. 493. 256. 269. 0.1047 4. 34. 493. 256. 257. 0.0836 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	0. 34. 431. 256. 175. 0.2061 7. 0. 34. 476. 256. 119. 0.1644 6. 0. 34. 4726. 256. 170. 0.11644 6. 0. 34. 4726. 256. 269. 0.1047 4. 0. 34. 493. 256. 256. 0.1047 4. 0. 34. 493. 256. 256. 0.1047 4. 0. 34. 493. 256. 256. 0.1047 4. 0. 34. 493. 256. 1901. 0. 0.06579. 0. 0.0667 -		•	126.	442.	256.	186.	0.2582	33.	48.
0. 34. 375. 256. 119. 0.1644 6. 426. 256. 170. 0.1644 6. 426. 256. 170. 0.1047 4. 426. 256. 170. 0.1047 4. 426. 256. 237. 0.00336 3. 426. 256. 0.0067 0.1047 4. 626. 0.1047 4. 626. 0.1047 0.0067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1067 0.1061 0.10	6. 34. 375. 256. 119. 0.1644 6. 9. 34. 426. 256. 170. 0.1312 4. 9. 34. 493. 256. 269. 0.1047 4. 9. 34. 493. 256. 259. 0.1047 4. 9. 0.0667 -9. C. 857. 4461. 2560. 1901. 546. 546. 560. 1.74 1317. 757. 560. 191. 151. 151. 1061. 701. 800. 641. 191. 191. 1091. 670. 551349.		0	34.	431.	256.	175.	0.2061	7.	36.
0. 34. 426. 256. 170. 6.1312 4. 0. 34. 493. 256. 269. 0.1047 4. 0. 34. 493. 256. 256. 2.0936 3. 0. 0.0667 -9. 0. 0.0667 -9. 0. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0667 -9. 0.0164 - 51349.	0. 34. 426. 256. 170. 6.1312 4. 0. 34. 426. 256. 269. 0.1047 4. 0. 34. 493. 256. 256. 269. 0.1047 4. 0. 34. 493. 256. 256. 20936 3. 0. 0. 0. 0. 0. 0.0667 -9. 0. 0. 0. 0.0667 -9. 0. 0. 0.0667 -9. 0. 0. 0.0667 -9. 0. 0. 0.0667 -9. 0.		•	34.	375.	256.	119.	0.1644	•9	20.
0. 34. 525. 256. 269. 0.1047 4. 0. 34. 493. 256. 237. 0.0836 343129. 0. 0. 0.0 0. 0. 0.0 0. C. 857. 4461. 2560. 1901. 546. 5 BENEFITYCOST REYENUE IN \$ 1000 1.74 1317. 757. 560. 191. 1.51 1.54 1.55 1061. 701. 360. 191. 191. 191. 191. 191. 191. 191. 19	0. 34. 525. 256. 269. 0.1047 4. 0.1047 4. 0.1047 4. 0.1047 4. 0.1047 4. 0.1047 4. 0.1047 4. 0.1047 0.1047 0.1047 0.1047 0.1047 0.1047 0.1067 0		• •	34.	456.	256.	170.	0.1312	;	22.
0. 34. 493. 256. 237. 5.0836 3. -43. -129. 0. 0. 0.0667 -9. C. 857. 4461. 2560. 1901. 546. 5 C. 857. 4461. 2560. 1901. 546. 5 BENEFIT/COST REVENUE 10 In 8 1000 546. 5 BALIG 1.74 1317. 757. 560. 1.51 1.51 1061. 701. 360. 1.53 1.53 641. 191. 1.13 670. 591. 80. 464. 513. -49.	0. 34. 493. 256. 237. 5.0836 3. -43129.		•	34.	525.	256.	269.	0.1047	4.	28.
C. B57. 0. 0. 0. 0. 0.00667 -9. C. B57. 4461. 2560. 1901. 546. 5 BENEFIT/COST BENEF	C. 857. 4461. 2560. 1901. 546. 5 C. 857. 4461. 2560. 1901. 546. 5 BENEFIT/COST BAILO 1.74 1.51		•	34.	493.	256.	237.	0.0836	3.	20.
BENEFIT/COST BE	BENEFIT/COST BENEFIT/COST BAILG 1.74 1.51 1.51 1.30 1.13 670. 546. 546. 546.		-43.	-129.		•0	0	0.0667	-6-	0.
BENEFIT/COST BAILG 1.74 1.62 1.62 1.51 1.51 1.30	BENEFIT/COST		ċ	857.	4461.	2560.	1901.		546.	546.
BENEFIT/COST	BENEFIT/COST									
1317. 757. 1179. 728. 1061. 701. 832. 641. 670. 591.	1.74 137. 757. 1317. 757. 1.62 11.79. 728. 11.51 10.51 701. 10.30 832. 641. 10.13 670. 591. 464. 513.	INTEREST PEB_CENI		eo i	ENEFIT/COST		PRESEN-	VALUE IN S	1000 BALANCE	
1179. 728. 1061. 701. 832. 641. 670. 591. 464. 513.	1.62 1179, 728, 1.51 1.51 701, 1.30 832, 641, 1.13 670, 591, 664, 513,	00-9			1.74		1317.		290	
1061. 701. 832. 641. 670. 591. 464. 513.	1.51 1061. 701. 1.30 832. 641. 1.13 670. 591. 0.91 464. 513.	8.00			1.62		1179		451.	
832. 641. 670. 591. 464. 513.	1.30 832. 641. 1.13 670. 591. 0.91 464. 513.	10-00			1.51		1901		360.	
670. 591. 464. 513.	1.13 670. 591. 0.91 464. 513.	15.00			1.30		832		191.	
464. 513.	0.91	20.00			1.13		929		80.	
		00.			0.91		494		-64-	

** EXCLUCING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSTS

11 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.00 FEED EFF. 4.0

ANNUAL RETURN ON CAPITAL 8.66 PERCENT

,			INVESTMENT (\$ 1000		OPER	OPERATING (\$ 1000	•		PRESENT VALUE	VALUE
NO. IC	CENT.	FACILITIES	MORKING CAPITAL	TCTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE	PRESENT VALUE FACTOR	INVESTMENT	NET REVENUE
υ	1971		0	0	0	0	•0	1.0000	0	Ó
-	1972	511.	°0	511.	•	•	•	0.9203	470.	0
2	1973	34.	54.	88.	525.	325.	200	0.8470	75.	169.
e	1974	34.	•	34.	465.	325.	140.	C. 7795	27.	109.
4	1975	34.	0	34.	359.	325.	34.	0.7173	24.	24.
'n	1976	34.	0	34.	450.	325.	95.	0.6602	22.	63.
•	1977	126.	6	126.	442.	325.	117.	0.6076	.11.	71.
۲	1978	34.	•0	34.	431.	325.	106.	(0.5591	19.	59.
80	1979	34.	0	34.	375.	325.	50.	0.5146	17.	26.
6	1980	34.	•0	34.	426.	325.	101	0.4736	16.	4E.
01	1981	34.	•	34.	525.	325.	200	0.4358	15.	87.
11	1982	34.	•0	34.	493	325.	168.	0.4011	14.	67.
12	1983	-86.	-54.	-140.	0	0	5	0.3691	-52.	3
						11111111			11111111	
-	TOTAL	657.	ບໍ່	857.	4461.	3250.	1211.		724.	724.
		INTEREST PER CENT	EST	_	BENEFIT/COST RATIO		PRESEN	PRESENT VALUE IN \$ 1000	1000 BAI ANCE	
				•						
		00.9	00		1.10		838.	. 761.	76.	
		8.00	93		1.02		750.		17.	
		10.00	00		96.0		675		-31.	
		15.	00		0.82		531,		-116.	
		20.00	00		0.72		459,	. 597.	-168•	
		30-(83		0.58		300.		-219.	

**EXCLUCING DEPRECIATION, INTEREST, AND INCCME TAX

12 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 35 LITTER 8.0 HOG PR. STD GRAIN \$1,80 FEED EFF. 3.5

ANNUAL RETURN ON CAPITAL 19.09 PERCENT

				0		TWILL		
FACILITIES	WORKING CAPITAL	TCTAL	TOTAL	UPERATING EXPENSES **	NET REVENUE	VALUE FACTOR	INVESTMENT	NE T RE VENUE
C	0	0	0	0	•)	1.0000		Ü
511.	0	511.	• 0	•0	ပံ	0.8397	429.	.5
34.	47.	81.	525.	282.	243.	0.7051	57.	171.
34.	ٿ	34.	465.	282.	183.	0.5921	20.	108.
34.	<u>.</u>	34.	359.	282	77.	0.4972	17.	38.
34.	0	34.	4.20.	282	138.	6.4175	14.	58
126.	5	126.	445.	282.	160.	0.3505	44.	55.
34.	0	34.	431.	282	149.	0.2943	10.	44
34.	0	34.	375.	282	93.	5.2472	.	23.
34.	• ت	34.	426.	282	144.	0.2075		30
34.	0	34.	525.	282	243.	0.1743	•	. 24
34.	0	34.	493	282	211.	5.1463	ν.	31.
-86.	-41.	-133.	0	0	•°0	0.1229	-16.	°C
		1 1 1 1						
• 1 CB	•	921.	4401•	•n>97	•1401		• 709	• 7,70
INTEREST PER_CENI	EST	Ψ,	BENEFIT/COST		PRESENT 	PRESENT VALUE IN \$ 1000 EVENUEOUILAYBAI	1600 BALANCE	
•	00.9		1.50		1136.	759.	378.	
8	8.00		1.39		1017.		287.	
10.00	00		1.30		915.		213.	
15.00	00		1.12		719.		75.	
20.	00		86°0		580.		-14.	
00 08	•		96		רכי		-113	

**FXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSIS

13 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.20 FEED EFF 3.5

ANNUAL RETURN ON CAPITAL 12.54 PERCENT

UE 66. 66. 66. 66. 66. 66. 66. 67. 11. 12. 13. 14. 14. 14. 14. 14. 14. 14. 14. 14. 14	NO. ICENT. FACILITIES CAPITAL TOTAL 1 1972 2 1973 34. 34. 1974 34. 1975 34. 1976 34. 1977 126. 0. 34. 1978 1978 34. 0. 34. 10 1981 34. 0. 34. 11 1982 34. 0. 34. 12 1983 34. 0. 34. 12 1984 34. 0. 34. 0. 34. 11 1982 34. 0. 34.			1 1 1 1 1 1 1 1 1	PRESENT		
1972 511. 0. 0. 0. 0. 0. 0. 0.	1971 0. 0. 0. 0. 1972 1973 34. 52. 86. 1974 1975 34. 0. 34. 1976 34. 0. 34. 1977 126. 0. 34. 1978 34. 0. 34. 1980 34. 0. 34. 1981 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1983 -8652138. TCTAL 857. 0. 857.		OPERATING EXPENSES **	NET REVENUE	VALUE	INVESTMENT	NET REVENUE
1972 511. 0. 511. 0. 0. 0. 0. 0. 0. 0.	1972 511. 0. 511. 1973 34. 52. 86. 1974 34. 52. 86. 1974 1975 34. 0. 34. 1977 126. 34. 0. 34. 1980 34. 0. 34. 1981 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1983 -2652138. TCTAL 857. 0. 857. 6.00 8.00 10.00 15.00	0.0	0	0	1.0000	ć	3
1973 34, 52, 86, 525, 309, 216, 0,7016 1974 34, 0, 34, 465, 309, 126, 0,7016 1975 34, 0, 34, 42, 309, 111, 0,5234 1976 34, 0, 34, 42, 309, 113, 0,5234 1977 126, 0, 34, 42, 309, 113, 0,5339 1978 34, 0, 34, 42, 309, 112, 0,5339 1979 34, 0, 34, 42, 309, 112, 0,5339 1981 34, 0, 34, 42, 309, 117, 0,5433 1982 34, 0, 34, 425, 309, 117, 0,5433 1983 -86, -52, -138, 0, 0, 34, 441, 309, 118, 1000	1973 34. 52. 86. 1974 34. 1975 34. 1975 34. 0. 34. 1976 1976 34. 0. 34. 1978 1979 34. 0. 34. 1980 34. 0. 34. 1981 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1983 -2652138. TCTAL 857. 0. 857.	1.	0	•	0.8886	454	C
1974 34.	1974 34. 0. 34. 1975 34. 1976 34. 1976 34. 1977 126. 0. 34. 1978 34. 0. 34. 1981 34. 0. 34. 1981 34. 0. 34. 1982 34. 0. 34. 19838652138. TCTAL 857. 0. 857.	52	309	216.	0.7895	68	171.
1975 34. 0. 34. 359. 309. 150. 0.6234 1976 34. 0. 34. 420. 309. 111. 0.5539 1977 126. 0. 126. 309. 113. 0.6339 1978 34. 0. 34. 431. 309. 122. 0.4373 1979 34. 0. 34. 426. 309. 117. 0.34539 1981 34. 0. 34. 426. 309. 117. 0.34539 1982 34. 0. 34. 426. 309. 117. 0.34539 1982 34. 0. 34. 426. 309. 117. 0.34539 1982 34. 0. 34. 426. 309. 117. 0.34539 1983 -26. -52. -138. 0. 0. 0. 1984 0. 0. 0. 1985 -26. 0. 0. 0. 1986 -26. 0. 0. 1987 -461. 3090. 1371. 0. 1988 -26. 0. 0. 1989 -26. 0. 0. 1989 -26. 0. 0. 1989 -26. 0. 0. 1989 -26. 0. 0. 1989 -26. 0. 0. 1979 -26. 0. 1980 -26. 0. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1980 -26. 0. 1981 -26. 0. 1982 -26. 0. 1983 -26. 0. 1984 -26. 0. 1985 -26. 0. 1986 -26. 0. 1987 -26. 0. 1988 -26. 0. 1989 -26. 0. 1980 -26. 0.	1975 1976 1976 1977 126. 1977 1978 1979 1980 1981 1982 1982 1982 1983 1983 1083 10000 10000 15000		309.	156.	0.7016	24.	109
1976 34. 0. 126. 442. 309. 111. 0.5539 1977 126. 0. 126. 442. 309. 123. 0.4922 1978 34. 0. 34. 375. 309. 122. 0.4373 1980 34. 0. 34. 426. 309. 117. 0.3868 1981 34. 0. 34. 426. 309. 117. 0.3868 1981 34. 0. 34. 493. 309. 184. 0.3453 19838652138. 0. 30. 0. 184. 0.2726 19838652138. 0. 30. 0. 1371. TCTAL 857. 0. 857. 4461. 3090. 1371.	1976 34. 0. 34. 126. 1978 34. 0. 34. 1979 34. 0. 34. 1980 34. 0. 34. 1982 34. 0. 34. 1982 34. 0. 34. 1983 -8652138. TCTAL 857. 0. 857. 6.00 8.00 10.00 15.00		309.	50.	0.6234	21.	31.
1977 126.	1977 126. 0. 126. 1978 1978 1978 1979 1979 1979 1979 1980 1979 1981 1982 1982 1983 -8652138. TCTAL 857. 0. 857. 6.00 8.00 10.00 15.0		309.	111.	0.5539	19.	61.
1978 34. 0. 34. 431. 309. 122. 0.4373 1979 34. 0. 34. 431. 309. 66. 0.3866 1980 34. 0. 34. 426. 309. 117. 0.3453 1981 34. 0. 34. 426. 309. 117. 0.3453 1982 1982 1982 1983 -8652138. 0. 857. 4461. 3090. 1371. TCTAL 657. 0. 857. 4461. 3090. 1371. EER-GENI 1.25 8.00 1.26 849. 761. 840. 765. 10.00 1.26 849. 761. 848. 765. 705. 10.00 0.61 1.66 1.66 1.66 1.66 1.66 1.	1978 34. 0. 34. 1979 1979 34. 1980 34. 1981 34. 0. 34. 1982 34. 1982 34. 0. 34. 1983 -8652138.		309.	133.	0.4922	62.	65.
1980 34. 0. 34. 426. 309. 66. 0.3886 1980 34. 0. 34. 426. 309. 117. 0.3453 1981 34. 0. 34. 493. 117. 0.3453 1982 34. 0. 34. 493. 184. 0.2726 1983 -8652138. 0. 0. 0. 0. 0. 0. 0. 0.2423 1983 -8652138. 0. 857. 4461. 3090. 1371. 66.00 INTEREST FER.CENI BENEFIT/COST REYENUE OUILAY BALAN 6000 601. 646. 20.00 1.25 8.00 1.06 765. 705. 10.00 6.00 0.65 338. 518.	1979 34. 0. 34. 1980 34. 1982 34. 0. 34. 1982 1982 34. 19838652138. TCTAL 857. 0. 857. 10.00 10.00 15.00		309.	122.	0.4373	15.	53.
1980 34. 0. 34. 426. 309. 117. 0.3453 1981 34. 0. 34. 525. 309. 216. 5.3068 1982 34. 0. 34. 493. 309. 184. 0.2726 1983 -26. -52. -138. 0. 0. 0. 0. 1983 -26. -52. -138. 0. 0. 0. 1984 -26. 0. 657. 4461. 3090. 1371. 6461. 10.00 1.25 1.06 1.06 10.00 1.08 1.06 10.00 1.08 1.06 10.00 0.081 0.65 10.00 0.65 10.00 0.65 10.00 0.65 10.00 0.65 10.00 0.65 10.00 0.65 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.65 10.00 0.65 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.81 10.00 0.85 10.00 0.81 10.00 10.00 0.81 10.00	1980 34. 0. 34. 1981 1982 34. 1982 34. 1982 34. 1983 -8652138. TCTAL 857. 0. 857. 0. 857. EER_GENI 6.00 8.00 15.00 15.00		309.	•99	0.3886	13.	26.
1981 34. 0. 34. 525. 309. 216. 0.3068 1982 34. 0. 34. 493. 309. 184. 0.2726 1983 -8652138. 0. 657. 4461. 3090. 1371. TCTAL 857. 0. 857. 4461. 3090. 1371. 66.00 EES. CENT VALUE IN \$ 1000 1.25 8.00 1.25 849. 732. 1000 1.26 0.00 0.65 338. 518.	1981 34. 0. 34. 1982 1982 34. 0. 34. 1983 -8652138.	•	309.	117.	0.3453	12.	* 0 *
1982 34. 0. 34. 493. 309. 184. 0.2726 1983 -8652138. 0. 0. 0. 0. 0.2423 TCTAL 857. 0. 857. 4461. 3090. 1371. 6 INTEREST PER GENT VALUE IN \$ 1000 1.25 8.00 1.25 8.49. 751. 849. 752. 10.00 1.25 8.00 0.81 596. 596. 596.	1982 34. 0. 34. 1983 1983 -86521386.00 8.00 10.00 15.00		309.	216.	0.3068	10.	999
TCTAL 857138. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	1983 -8652138. TCTAL 857. 0. 857. INTEREST PER.GENI 6.00 8.00 10.00 15.00		309.	184.	0.2726	6	50.
INTEREST INTEREST EAG INTEREST EAG INTEREST BENEFIT/COST BENEFIT/	1 INTEREST PER GENI 6.00 8.00 10.00 15.00		• •	0	0.2423	-33	.5
INTEREST INTEREST EEB_CENI 6.00 6.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.26 8.00 1.26 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 8.00 1.25 1.26 8.00 1.26	1NTEREST FEB_GENI 6.00 8.00 10.00	!				1	
BENEFIT/COST BEYENUE IN \$ 1000 BEYENUE IN \$ 1000			3090	1371.		674.	674.
BENEFIT/COST BEYENDE BEYENDE BALAN 1.25 2.25 1.2							
1.25 1.16 1.08 (0.93 (0.81 0.65		BENEFIT/COST RATIO		PRESENT	VALUE IN S	1000 RAI ANCE	
1.25 1.16 1.08 1.08 0.81 0.65				4804740-			
1.16 1.08 0.93 0.81 1.08 1.08 1.08 1.08 1.08 1.08 1.08		1.25		646		188.	
1.08 C.93 C.93 601, 646, 0.81 485, 596, 0.65		1.16		840.		117.	
0.93 601. 646. 0.81 485. 596. 0.65 338. 518.		1.08		765		-65	
0.81 485, 596. 0.65 338, 518.		C*03		601		-45.	
0.65	00.02	0.81		485		-111.	
	30.00	0.65		338.		-180.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

14 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER (.5 HOG PR. STO GRAIN PR. \$2.00 FEED EFF 3.5

ANNUAL RETURN ON CAPITAL 12.80 PERCENT

	INVESTMENT (\$ 1000)	TOTAL		Contraction and Contraction of the Contraction of t	100000		
i		1	OPERATING EXPENSES **	NET REVENUE	7 > rr	INVESTMENT	NET REVENUE
1	.0	0	0	.0	1.0000	0.0	ن
	511.	•	•	•	9.88¢6	453	ٿ
	81.	484	282	212.	0.7860	• 49	167.
	34.	437.	282	155.	8969*0	24.	108.
	34.	337.	282.	55.	0.6178	21.	34.
	34.	395.	282	113.	0.5477	19.	62.
12	26.	416.	282	134.	0.4856	61.	65.
m	34.	*905	282.	124.	0.4305	15.	53.
m	34.	352.	282	٠٥٧	0.3817	13.	27.
3	34.	401.	282.	119.	0.3384	12.	40.
ň	34.	494	282.	212.	0.3000	10.	.49
34.		465.	282	183.	0.2659	•6	*65
-133		•	•0	ં	0.2358	-31.	• •
857.	1	4197.	2820-	1377.		668.	.899
	BENEFI	BENEFIT/COST		PRESENT BEYENUE	VALUE IN \$ 1000	1000 BALANCE	
		1.26		953. 853. 768.	730.	194.	
	•	0.94		603.		-107	
	90						

**EXCLUCING DEPRECIATION, INTEREST, AND INCOME TAX

15 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.5 HOG PR. STD GRAIN PR. \$2.00 FEED EFF 3.5

ANNUAL RETURN ON CAPITAL 18.67 PERCENT

YEAR						111111111111111111111111111111111111111	PRESENT		
NO. IDENT	FACILITIES	MORKING	TCTAL	F. A.	OPERATING EXPENSES **	NET REVENUE		INVESTMENT	NET REVENUE
-		0	0	0.	0	0	1.0000	0.	0
1 1972	•	•	511.	•	0	•	0.8427	431.	0
2 1973	3 94.	52.	86.	556.	310.	246.	0.7101	61.	175.
3 1974	34.	•	34.	492.	310.	182.	0.5984	20.	109.
4 1975		•	34.	381.	310.	71.	0.5043	17.	36.
5 1976	34.	•	34.	445.	310.	135.	0.4250	14.	57.
6 1977	126.	•	126.	469	310.	159.	0.3581	45.	57.
7 1978	34.	•	34.	457.	310.	147.	0.3018	10.	44.
8 1979	34.	•	34.	403.	310.	93.	0.2543	6	24.
0861 6	34.	•	34.	452	310.	142.	0.2143	7.	30.
-	34.	•	34.	556.	310.	246.	0.1806	•	44
_	34.	•	34.	520.	310.	210.	0.1522	. °C	32.
12 1983		-55-	-138.	•	•	•	0.1283	-18.	•
TOTAL	857.	0	857.	4731.	3100.	1631.		.609	.609
	PER CENT	ENI	- •	BATIO		PRESENT REVENUE	PRESENT VALUE IN \$ 1000 EVENUEBAI	BALANCE	
	9 8	88		1.48		1129.		368.	
	10.0	8		1.29		910		204.	
	15.00	8		11.11		714.		.89	
	20.0	0		26.0		576.		-50-	G
	30.00	00		0.17		400		-117.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

16 ANALYSIS OF 60'S CW FARNOW TO MARKET OPERATION C. R. RAYL FAC. 35 LITHER 8.0 HOL PR. STO GRAIN PR \$2.00 FEELD EFF 3.5 LABORS 4

ANNUAL RETURN ON CAPITAL 19.87 PERCENT

YEAR			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1 40 20 00		
ND. ICENT.	FACILITIES	WORKING	TCTAL	ox.	OPERATING EXPENSES **	NE T REVENUE	VALUE VALUE FACTOR	INVESTMENT REVENUE	NET
1761 0	•0	ပံ	0	0	0.0	0.0	0000	•	
	511.	°.	511.	• C	· c		C-9029	461.	i s
	34.	55.	-9P	525.	316.	209.	8136	73.	1700
3 1974	34.	3	34.	465.	316.	149.	0.7338	25.	109.
800	34.	• •	34.	359.	316.	43.	0.6619	23.	.8
5 1976	34.	. . ,	34.	420.	316.	104.	U.597	20.	62.
t 1977	126.	. .	126.	442.	316.	126.	C.5385	68.	6 6.
-	34.	•	34.	431.	316.	115.	1.4857	1.7	56.
	34.	.	34.	375.	316.	59.	1964	15.	26.
_	* 5%	٠	34.	426.	316.	116.	0.3952	13.	43.
10 1981	34-	<u>.</u>	34.	525.	316.	209-	0.3564	12.	74.
1 1982	34.	;	34.	493	316.	177.	0.3215	=	5.7.
2 1983	-88-	-25.	-138.		0	5	0.2900	-40	3
	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
TCTAL	R57.	S	857.	4461.	3160.	1301.		694.	• 469
	PES CENT	INI INI	samoti •	BENEFIT/COST		PRESENT	I VALUE IN \$ 1000	1000 BALANGE	
	00.9	CC		1.18		900	761.	140.	
	00-8	00		1.10		806.	2.1	74.	
	0.01	5		1.03		726.		20.	
	15.00	0(0.88		570.		-76.	
	30.02	0.0		C.77		461.		-135.	
	30.00	0		6,7		223		Č	

**EXCLUCING DEPRECIATION, INTEREST, AND INCOME TAX

17 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC. 35 LITTER 8.0 HGC PR. STO GRAIN PR \$2.00 FEED EFF. 3.5 HERD LOSS

ANNUAL RETURN ON CAPITAL 10-26 PERCENT

0 4 0 4	INVEST	INVESTMENT (\$ 1000			OPERATING (\$ 1000		4	PRESENT VALUE	VALUE
DENT.	ACIL	WORKING	TCTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE	2	i m	NET REVENUE
1761	0.	0	0.0	0	0.0	0.	1.0000	-0	•0
1972	511.	•	511.	ċ	•	.0	6906-0	463.	ò
6	34.	20•	84.	525.	296.	229.	0.8225	.69	188.
4	11.	•	71.	316.	222.	94.	0.7459	53.	10.
5	34.	•	34.	359.	296-	63.	0.6765	23.	43.
9	34.	•	34.	420.	296.	124.	0.6135	21.	76.
~	126.	ô	126.	442.	296.	146.	0.5564	20.	81.
978	34.	•	34.	431.	296.	135.	0.5046	17.	68.
979	34.	•	34.	375.	296.	79.	0.4576	16.	36.
980	71.	•	71.	289.	222.	67.	0.4150	29.	28.
981	34.	•	34.	525	296-	229.	0.3764	13.	86.
1982	34.	•	34.	493	296.	197.	0.3414	12.	67-
686	-86.	-50-	-136.	0	0	0	0.3096	-42.	•
						*****			11111111
7 5	•166	.	931.	4175.	2812.	1363.		144.	744.
	INTEREST PER_CENI	EST		BENEFIT/COST BAIID		PRESEN	PRESENT VALUE IN \$ 1000 EVENUEOUILAYBA	1000 BALANCE	
	9.00	00		1.15		939.	. 813.	126.	
	8.00	0		1.08		839.		•09	
	10.0	2		1.01		154	748.	•	
	15.0	0.		0.87		590.		-89-	
	20.0	8		92.0		475.	. 623.	-148.	
	30.0	00		0.61		329.		-208-	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

INVESTMENT FEASIBILITY ANALYSIS

19 ANALYSIS OF 6CC SON FARRUM TO MARKET OPERATION C. R. MAYL FAC. 35 LITTER 8.C FCC PR. STC GRAIN PR. \$2.00 FEED EFF. 3.5 VAC. FOR THE

ANNUAL RETURN ON CAPITAL 14.0C PERCENT

0 4 4 >	I C L A L L L L L L L L L L L L L L L L L	2	•	1	LPERALING (US&1CCO	_	F M 1 2 3 0 0 0	- 3	VALUE
31	ACILITIES	WCRKI	1CTAL	TCTA	1 J X	REVENC	7	INVESTARNI	L
3 1971			•0	0			0.6750	0	•
1 1572	-115	ċ	511.	ن	•0	٥	1765.0	303.	ငံ
_	. 4:	51.	85.	:25.	303.	222.	0.5194	4 4 4	115.
3 1574	. 4.	į	34.	465.	303.	162.	0.4557	15.	74.
-	. 40	ċ	34.	359.	303.	56.	799E-0	• 7 .	24.
_	. 46	ċ	34.	45C.	303.	117.	0.3506	12.	41.
_	126.	ċ	126.	442.	303.	139.	0.3076	.65	4.3
_	. 4.	٤	34.	431.	303.	128.	0.2698	•6	35.
8 1975	. 50	ċ	34.	375.	303.	72.	1962-0	i	
_	4	٤	34.	426.	503.	123.	0.2076	7.	• 9.7
-	4	ċ	34.	525.	363.	222	0.1821	9	40.
1982	. 4.	٤	34.	493.	303.	190.	0.1598	5.	200
-	86	-51.	-137.	ċ	ີ ບໍ	• •	0.1462	-14.	3
	1 1 1 1 1 1 1 1 1	11111111							1111111
TCTAL	657.	ċ	857.	4461.	3030.	1431.		4 4 3 .	443.
	INTEREST EEB_GEDI	EST Edi		PENEFIT/CCST		PRESEN-	PRESENT VALUE IN USSICCE EVENLECLILAYBAL	S\$1CCC BALANGE	
	• •	ວວ		1.30		832.		193.	
	8.CC	ວວ		1.21		104.	581.	123.	
	10.	၁၁		1.13		009	-	70.	
	15.	ວວ		6.57		412.		-12.	
	20.	CC		S 8 € 5		293		-55.	
	30.	00		0.68		160		-75-	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

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INVESTMENT FEASIBILITY ANALYSIS

ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL LITTER 8.0 HGG PR. STD GRAIN PR \$2.00 FEED EFF 3.5 RENT HERD 19 FAC 35

ANNUAL RETURN ON CAPITAL 18.31 PERCENT

.,.	NET REVENUE	0	0	147.	90.	25.	46.	46.	36.	16.	25.	38.	23.	0	492.								
PRESENT VALUE		-0			•	•	•	•	•	•	•	•	•	•	 -	-	11.	234	.0.5	• • • •	• 77	•	
PRES	INVESTMENT		376.	64	10.	6	7	04	S	4	4	e	ĸ.	-18.	492.	1000 BALANCE	e	N	-		' 7	gi G	
A413100	VALUE	1,0000	0.8453	0.7145	0.6039	0.5105	0.4315	0.3647	0.3083	0.2606	0.2203	0.1862	0.1574	0.1330		PRESENT VALUE IN \$ 1000 EVENUEOUTLAYBA	580.	565.	.044		486.	• 17•	
	NET REVENUE	-6	6	206.	149.	48.	106.	127.	116.	63.	112.	206.	149.	•	1282.	PRESENT V	892.	799.	.121	•000	400.	• • • • • • • • • • • • • • • • • • • •	
OPERATING (\$ 1000	OPERATING EXPENSES **	0		296.	296.	296.	296.	296.	296.	296.	296.	296.	296.	•0	2960.								
OPERA	TOTAL REVENUE	0	6	502.	445.	344.	402.	423.	412.	359.	408	502.	445.	•	4242.	BENEFIT/COST	1.54	1.41	16-31	010	0.47		
-	TOTAL	0	445.	69	17.	17.	17.	109.	17.	17.	17.	17.	17.	-138.	621.	α (
INVESTMENT (\$ 1000	WORKING CAPITAL	6		52.	•	•	•0	•	•	•	•	•	•	-52.	0	ST NI	•	0	.	3 6			
INVESTM	FACILITIES		445.	17.	17.	17.	17.	109.	17.	17.	17.	17.	17.	-86-	621.	INTEREST PER_CENI	00.9	8.00	10.00	20.00	00.02		
5	ICENT.	1471	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	TCTAL								
j	ON .	0	-	2	m	4	e n	•	_	&	σ	2	7	15									

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

20 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.C HOG PR. STO GRAIN PR. \$2.00 FEED EFF. 3.5 GRAIN STORAGE

ANNUAL RETURN ON CAPITAL 11.75 PERCENT

ALUE	NET REVENUE	1	ċ	187	101	•671	*	. 4.	78.	• • •	35.	٠ ۲	.11.	•09	•0	 792.								
PRESENT VALUE	N INVESTMENT REV		• 604		•	**7	•77	20.	65.	16.	14.	13.	11.	10•	-53.	 792.	1000 BALANCE	213	125.	53.	-77	-159.	-244.	
i d	PRESENT VALUE FACTOR		0000	10000	8008	0./100	3.6412	0.5738	0.5135	0.4595	0.4112	0.3679	0.3293	0.2946	0.2637		VALUE IN \$ 1000	040	9000	812	757	707	626.	
-	NET REVENUE		3	5	234.	174.	68	129.	151.	140.	84.	135,	234.	202.	•0	 1551.	PRESENT	7001	961	26.5	679	548	381.	
OPERATING (\$ 1000	OPERATING EXPENSES **		3 c	•	291.	291.	291.	291.	291.	291.	291.	291.	291.	291.	•	 2910.								
	TOTAL		.	•	255	465.	359.	420.	442.	431.	375.	426.	525.	493.	3	 4461.	BENEFIT/COST RATIO	3,	1-15	40	06-0	0.78	0.61	
-	TCTAL		• (• • • •	• 29	34.	34.	34.	126.	34.	34.	34.	34.	34.	-202-	 931.	ě i							
INVESTMENT (\$ 1000	MORKING		•	•	28.	•	•	•	3	9	•	ċ	•	ڻ	-86-	 •	ST	9	2 5	2 5	2 5	2 5		
INVESTM	FACILITIES		•	600	34.	34.	34.	34.	126.	34.	34.	34.	34.	34.	-104.	931.	INTEREST PER_CENI		9 9			20-00	30.00	is
	YEAR TOENT.		1971	7161	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	TOTAL								
,	No.	!	٠.	- 1	~	m	4	5	•	_	₩	0	01	:=	12	*								

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL Litter 8.0 Hog pr. Std Grain pr. \$2.00 feed eff 3.5 begin prod 74 21 FAC. 35

ANNUAL RETURN ON CAPITAL 11.10 PERCENT

FACILITIES GAPITAL TOTAL OPERATING NET VALUE FACTOR INVESTMENT TOTAL PREVENCE S.** REVENCE FACTOR INVESTMENT TOTAL OPERATING NET VALUE FACTOR INVESTMENT TOTAL NET VALUE FACTOR INVESTMENT TO 0.000000000000000000000000000000000	2)		FAREN		
1972 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.		FACILITIES	WORK ING CAPITAL	TCTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE	VALUE FACTOR	INVESTMENT	NET REVENUE
1973 511. 0. 511. 0. 0. 0. 0. 0. 0. 0.	C 1972	•	0	.0	0	0	0	1.0000	0	•0
1974 34, 50, 84, 465, 296, 169, 0,8102 68, 1975 1975 34, 0,0 34, 420, 296, 124, 0,6565 22, 22, 1976 1977 34, 0,0 34, 420, 296, 124, 0,6565 22, 226, 135, 0,5909 20, 20, 1978 1980 34, 0,0 34, 426, 296, 130, 0,4310 15, 130, 0,4310 15, 130, 0,4310 15, 130, 0,4310 15, 130, 0,4310 15, 130, 0,4310 12, 130, 0,4310 12, 130, 0,4310 12, 130, 0,4310 13, 130, 0,4310 13, 130, 0,4310 13, 130, 0,4310 13, 130, 0,4310 13, 130, 0,4310 13, 130, 0,4310 13, 130, 0,4310 13, 13, 13, 13, 13, 13, 13, 13, 13, 13,	1 1973	511.	•	511.	•	•	6	0.9001	460	0
1975 34. 0. 34. 420. 256. 63. 0.7293 25. 1976 34. 0. 34. 442. 296. 146. 0.55565 22. 1977 34. 0. 34. 442. 296. 146. 0.55319 67. 1979 34. 0. 34. 442. 296. 135. 0.5319 67. 1981 34. 0. 34. 442. 296. 136. 0.4310 15. 1982 34. 0. 34. 442. 296. 130. 0.4310 15. 1983 34. 0. 34. 442. 296. 130. 0.4310 15. 1984 34. 0. 34. 442. 296. 130. 0.4310 15. 1985 34. 0. 34. 442. 296. 149. 0.3143 11. 1985 34. 0. 34. 442. 296. 149. 0.3143 11. 1985 34. 0. 34. 442. 296. 130. 1987 34. 0. 34. 442. 442. 442. 442. 1988 34. 0. 34. 442. 442. 442. 442. 1989 34. 0. 34. 442. 442. 1980 34. 34. 34. 1980 34. 34. 34. 1980 34. 34. 34. 1980 34. 34. 34. 1980 34. 1980 34.	2 1974	34.	50.	84.	465.	296.	169.	0.8102	•89	137.
1976 34. 0.0 34. 420. 296. 124. 0.6565 22. 1977 34. 0. 34. 442. 296. 146. 0.5909 20. 1978 126. 0. 126. 442. 296. 135. 0.5319 67. 1980 34. 0. 34. 446. 296. 130. 0.4310 15. 1981 34. 0. 34. 465. 296. 130. 0.4310 15. 1982 34. 0. 34. 465. 296. 169. 0.3437 13. 1983 34. 0. 34. 340. 296. 169. 0.3437 13. 1984 465. 296. 169. 0.3437 13. 1985 34. 0. 34. 340. 296. 1328. 1986 465. 296. 1328. 690. 1074 657. 0. 657. 4288. 2960. 1328. 1086 1.20 616. 731. 704. 10.00 1.04 568. 645. 771. 10.00 0.88 645. 771. 10.00 0.89 645. 771. 10.00 0.89 645. 771. 10.00 0.59 306. 517. -210. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.59 306. 517. 10.20 0.50 517. 10.20 0.50 0.50 306. 10.20 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 517. 10.20 0.50 0.50 0.50 517. 10.20 0.50 0.50 0.50 517. 10.20 0.50 0.50 0.50 517. 10.20 0.50 0.50 0.50 517. 10.20 0.50 0.50 0.50 517. 10.20 0.50 0.50 0.50 0.50 0.50 0.50 0.50 10.20 0.20 0.50 0.50 0.50 0.50 0.50 10.20 0.20 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 10.20 0.20 0.20 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.5	3 1975	34.	•	34.	359.	296.	63.	0.7293	25.	46.
1977 34. 442. 296. 146. 0.5909 20. 1978 136. 146. 0.5909 20. 1978 136. 1978 136. 1979 136. 1979 136. 1979 1379. 1979 1379. 1979 1379. 1979 1379. 1979 1379. 1379	4 1976	34.	•	34.	420.	296.	124.	0.6565	22.	81.
1976 126. 0. 126. 431. 296. 135. 0.5319 67. 1979 34. 0. 34. 426. 296. 135. 0.4788 16. 1981 34. 0. 34. 426. 296. 130. 0.4389 13. 1982 34. 0. 34. 465. 296. 130. 0.3879 13. 1982 34. 0. 34. 465. 296. 169. 0.3492 13. 1983 34. -50. -136. 0. 0. 1984 0. 34. 0. 34. 36. 1985 34. 0. 34. 465. 296. 169. 0.3492 13. 1985 34. -50. -136. 0. 0. 1986 465. -136. 0. 0.3149 13. 1987 -136. 0. 857. 4288. 2960. 1328. 1988 13. 1000 1980 1.20 816. 731. 704. 27. 1980 1.00 0.59 306. 517. -210. 1981 34. 27. 1982 34. 27. 1983 36. 27. -210. 1984 37. -210. 1985 -142. 1987 13. 1000 1988 568. 645. -172. 1988 13. 1000 1989 30. 10. 1981 30. 1982 34. 70. 1983 30. 1984 43. 595. -142. 1985 -142. 1985 -142. 1986 13. 1987 13. 13. 1988 13. 13. 1989 13. 13. 1980 13. 13. 1	5 1977	34.	•	34.	442.	296.	146.	0.5909	20.	86.
1979 34. 0. 34. 426. 296. 179. 0.4788 16. 1980 1980 34. 0. 34. 426. 296. 130. 0.3879 13. 13. 1981 13. 1981 13. 1982 13. 1981 13. 0. 34. 465. 296. 169. 0.3879 13. 13. 1983 14. 0. 34. 465. 296. 169. 0.3879 13. 13. 1983 11. 0. 34. 136. 0. 34. 136. 0. 34. 13. 13. 13. 13. 13. 13. 13. 13. 13. 13	6 1978	126.	•	126.	431.	296.	135.	0.5319	67.	72.
1980 34. 0. 34. 426. 130. 0.4310 15. 1981 34. 0. 34. 525. 296. 130. 0.4310 15. 1982 34. 0. 34. 465. 296. 169. 0.3879 13. 1983 34. 0. 34. 465. 296. 169. 0.3879 13. 1983 34. 0. 34. 465. 296. 696. 696. 1984 34. 0. 34. 697. 696. 696. 107AL 657. 0. 857. 4288. 2960. 1328. 107AL 657. 0. 857. 4288. 2960. 1328. 107AL 667. 0. 857. 4288. 2960. 1328. 107AL 10.00 1.04 731. 704. 731. 10.00 1.04 731. 704. 771. 15.00 0.88 645. 771. 20.00 0.59 306. 517. 210. 210. 210.	7 1979	34.	•	34.	375.	296.	19.	0.4788	16.	38.
1981 34. 0. 34. 525. 296. 229. 0.3879 13. 1982 34. 0. 34. 465. 296. 169. 0.3492 12. 1983 34. 0. 34. 360. 296. 169. 0.3492 12. 1984 34. 0. 34. 360. 0.3149 11. 1084 0. 314. 314. 314. 1085 10.00 1.02 84. 10.00 1.04 1.04 1.04 1.04 10.00 1.04 1.04 1.04 10.00 1.04 1.04 1.04 10.00 1.05 1.04 1.04 10.00 1.05 1.05 10.00 1.05 10.00 1.00 10.00 10.00 1.00 10.00 10.00 10.00 10.00	1980	34.	•	34.	426.	296.	130.	0.4310	15.	56.
1982 34. 0. 34. 465. 296. 169. 0.3492 12. 1983 34. 0. 34. 380. 296. 84. 0.3143 11. 1985 -8650136. 0. 857. 4288. 2960. 1328. 690. TOTAL 857. 4288. 2960. 1328. 690. INTEREST BENEFIT/CGST REYENUE GUILAY BALANCE. 6.00 8.00 1.12 814. 760. 84. 10.00 1.12 816. 731. 704. 27. 10.00 0.76 6.59 306. 517210.	1981	34.	•	34.	525.	296.	229.	0.3879	13.	89.
1983 34. 0. 34. 380. 296. 84. 0.3143 11.		34	•	34.	465	296-	169.	0.3492	12.	59.
TOTAL 857136. 0. 0. 0. 0.2829 -38. TOTAL 857. 4288. 2960. 1328. 690. INTEREST BENEFIT/COST BENEFIT/COST BENEFIT/COST BEYENUE OUTLAY BALANCE. 6.00		34.	6	34.	380	296	84.	0.3143	11.	26.
ST		-86.	-50.	-136.		•0	0	0.2829	-38.	0
INTEREST INTEREST EER CENI 6.00 6.00 1.20 8.00 1.12 8.00 1.04					1				ŀ	1
BENEFIT/COST BAILOBENEFIT VALUE IN \$ 1000 1.20	TOTAL	857.	ċ	857.	4288.	2960.	1328.		•069	•069
BENEFIT/COST BAILO 1.20 1.20 1.12 1.04 1.05 1.0										
1.20 1.20 1.12 1.12 1.04 0.88 0.76 0.76 0.76 0.76 0.76 0.76 0.76 0.76			15	9	ENEETT/COST		DRECENT	VALUE	1000	
1.20 914. 760. 1 1.12 816. 731. 704. 1.04 731. 704. 1.04. 1.076 645. 1.076 645. 1.076 9595. 1.076 9595. 1.076		PER CE	I.	•	BATIO		BEYENUE	DUILAY		
1.12 1.04 1.04 0.88 0.76 0.76 1.059 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04		0.9	9		1.20		914.		154.	
1.04 731. 704. 0.88 645 568. 645 0.76 453. 595 1		8	9		1.12		816.	20	84.	
0.76 568, 645. 0.76 453, 595. 0.59 306, 517.		10.01	2		1.04		731.		27.	
0.76 453, 595. 0.59 306, 517.		15.0	0		0.88		568.		-77-	
0.59 306. 517.		20.02	2		92.0		453.		-145.	
		30.0	2		0.59		306.		-210.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTHENT FEASIBILITY ANALYSIS

22 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.00 FEED EFF. 3.5 BEGIN PROD 75

ANNUAL RETURN ON CAPITAL 9.63 PERCENT

1		INTESTREME (* 1000					PRESENT	TOTAL NECESTRA	
- FACI	FACILITIES	WORKING CAPITAL	TOTAL	TOTAL	OPERATING EXPENSES ++	NET REVENUE		INVESTMENT	NET REVENUE
1973	0.	•0	•0	•0	• 0	0	1.0000	0	
	511.	ò	511.	•	ő	0	0.9122	466.	ò
	34.	50.	84.	359.	296.	63.	0.8320	.07	52.
	34.	ċ	34.	420.	296.	124.	0.7589	26.	94.
	34.	•	34.	442.	296.	146.	0.6923	24.	101.
	34.	•	34.	431.	296-	135.	0.6314	21.	85.
	126.	•	126.	375.	296.	79.	0.5760	73.	46.
	34.	•	34.	426.	296.	130.	0.5254	18.	.89
	34.	•	34.	525.	296.	229.	0.4792	16.	110.
	34.	•	34.	465.	296.	169.	0.4371	15.	74.
	4	0	34.	359.	296.	63.	0.3987	14.	25.
	34.	•	34.	444	296.	148.	0.3637	12.	54.
	-86.	-20*	-136.	•	•0	•	0.3317	-45.	5
	857.	•0	857.	4246.	2960.	1286.		109.	709.
	INTEREST PER_CENI	ST	υ,	BENEFIT/COST RAILO		PRESENT	PRESENT VALUE IN \$ 1000 EYENUEBA	1000 BALANCE	
	9.00	0		1.15		876.	760.	116.	
	8.00	9		1.06		778.	731.	47.	
	10.00	9		66*0		.695.	704.	-10.	
	15.00	9		0.83		533.	645	-112.	
	20.00	9		0.0		419.	595.	-176.	
	30.00	9		6.63		275.	517.	-245-	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

23 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.00 FEED EFF. 3.5 BEGIN PROD 76

ANNUAL RETURN ON CAPITAL 12.18 PERCENT

							DDECENT		
NO. IDENT.	1	WORKING	TOTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE		INVESTMENT	NET REVENUE
1974	0	0	0.	0	0.	0	1.0000	0	0
1975	511.	•	511.	•	•	•	0.8914	456.	0
2 1976	34.	50.	94.	420.	296.	124.	0.7946	67.	-66
3 1977	34.	•	34.	442.	296.	146.	0.7083	24.	103
4 1978	34.	3	34.	431.	296.	135.	0.6314	21.	85.
5 1979	34.	•	34.	375.	296.	79.	0.5628	19.	4,5
1980	126.	•	126.	426.	296-	130	0.5017	63.	65
1981 7	34.	9	34.	525	296.	229	0.4472	15.	162
8 1982	34.		34.	465	296	169.	0.3986	14.	67
9 1983	34.	•	34.	359.	296.	63.	0.3553	12.	22
10 1984	34.	•	34.	420	296.	124	0-3167		3.0
1985	34.	•	34.	469	296.	173.	0.7873	10.	64
_	-86.	-20•	-136.	•	•	0	0.2517	-34.	0
	1			111111111				-	-
TOTAL	857.	;	857.	4332.	2960.	1372.		.177	677.
	INTEREST PER_CENT	EST	- •	BENEFIT/COST		PRESENT - BEYENUE	T VALUE IN \$ 1000 DUTLAY BA	1000 BALANCE	
	9.00	00		1.25		947.	760-	187.	
	9.00	8		1.16		845.		114.	
	10.00	90		1.08		758.		54.	
	15.00	90		0.91		590.	. 645.	-55.	
	20.0	8		0.79		470-		-125.	
	30.06	ဗ္ဗ		0.61		317,		-200-	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

ANALYSIS FEASIBILITY LVSESIMENT

24 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STO GRAIN PR. \$2.00 FEED EFF 3.0 IMPROVED HERD

ANNUAL RETURN ON CAPITAL 21.10 PERCENT

OPERATING NET VALUE INVESTMENT RE EXPENSES *** REVENUE FACTOR INVESTMENT RE 0. <th>DPERATING NET VALUE EXPENSES ** REVENUE FACTOR INVESTMENT REV 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.</th> <th>PRESENT VALUE IN \$ 1000 256. 269. 0.6819 63. 256. 269. 0.6819 63. 256. 103. 0.4650 26. 256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 186. 0.3171 42. 256. 186. 0.3171 65. 256. 186. 0.3171 65. 256. 186. 0.3171 66. 256. 187. 0.1218 5. 256. 1892. 0.1000 PRESENT VALUE IN \$ 1000 BEYENUE QUILAY 844. 1174. 812. 362. 1174. 651. 177. 649. 651. 177. 668. 651. 177.</th> <th>INVESTMENT (\$ 1000</th> <th>-</th> <th>MENT (\$</th> <th>0001</th> <th>-</th> <th>OPER</th> <th>OPERATING (\$ 1000</th> <th>-</th> <th>PRESENT</th> <th>PRESENT VALUE</th> <th>VALUE</th>	DPERATING NET VALUE EXPENSES ** REVENUE FACTOR INVESTMENT REV 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	PRESENT VALUE IN \$ 1000 256. 269. 0.6819 63. 256. 269. 0.6819 63. 256. 103. 0.4650 26. 256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 186. 0.3171 42. 256. 186. 0.3171 65. 256. 186. 0.3171 65. 256. 186. 0.3171 66. 256. 187. 0.1218 5. 256. 1892. 0.1000 PRESENT VALUE IN \$ 1000 BEYENUE QUILAY 844. 1174. 812. 362. 1174. 651. 177. 649. 651. 177. 668. 651. 177.	INVESTMENT (\$ 1000	-	MENT (\$	0001	-	OPER	OPERATING (\$ 1000	-	PRESENT	PRESENT VALUE	VALUE
0. 0. 1.00C0 0. 450. 256. 269. 0.6819 63. 256. 269. 0.5631 24. 256. 103. 0.4650 20. 256. 164. 0.3171 42. 256. 110. 0.21619 11. 42. 256. 110. 0.2162 9. 256. 170. 0.1786 8. 256. 256. 256. 256. 269. 0.1786 8. 256. 256. 257. 0.1786 8. 256. 256. 257. 0.10C6 -14. 2560. 1892. 2560. 1892. 847. 464. 1174. 812. 362. 1174. 812. 277. 829. 277. 668. 651. 17. 668. 651. 17. 668. 651. 17. 668.	0. 0. 1.00C0 0. 63. 256. 269. 0.6819 450. 256. 103. 0.6819 63. 256. 103. 0.6819 63. 256. 1103. 0.6819 116. 256. 175. 0.2619 11. 256. 177. 0.2162 9. 256. 237. 0.1786 8. 256. 237. 0.1218 5. 256. 1892. 639. 2560. 1892. 639.	0. 0. 1.0000 0. 63. 256. 269. 0.6819 63. 256. 103. 0.6819 24. 256. 104. 0.3840 16. 256. 116. 0.3171 42. 256. 1170. 0.2162 9. 256. 110. 0.2162 9. 256. 27. 0.1786 8. 256. 237. 0.1218 5. 0. 0.000 0.1000 PRESENT VALUE IN \$ 1000 BEYENUE OUTLAY 846. 1174. 812. 277. 668. 651. 179.	IDENT. FACILITIES CAPITAL TCTAL	WORKING CAPITAL T	-	TCTAL		REVENUE	OPERATING EXPENSES **	NET REVENUE	VALUE	INVESTMENT	NET REVENUE
256. 269. 0.6819 450. 256. 209. 0.5631 24. 256. 103. 0.4650 20. 256. 164. 0.3840 16. 256. 175. 0.2619 11. 256. 177. 0.2619 11. 256. 256. 170. 0.1786 8. 256. 259. 0.1786 8. 256. 259. 0.1786 6. 256. 259. 0.1786 8. 256. 269. 0.1078 6. 256. 269. 0.1078 6. 256. 1892. 0.1000 REYENUE IN \$ 1000 REYENUE OUTLAY BALANCE 1174. 812. 362. 1175. 668. 651. 17.	256. 269. 0.6819 450. 256. 269. 0.6819 63. 256. 103. 0.4650 20. 256. 164. 0.3871 42. 256. 186. 0.3171 42. 256. 1170. 0.2162 9. 256. 257. 0.1786 8. 256. 257. 0.1786 8. 256. 257. 0.1786 8. 256. 257. 0.1786 8. 256. 257. 0.1786 8. 256. 257. 0.1786 8. 256. 1892. 0.1892. 639. 1311. 847. 464. 1174. 812. 362. 1175. 668. 651. 177.	256. 269. 0.6819 450. 256. 209. 0.6819 63. 256. 103. 0.6531 24. 256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 237. 0.1218 6. 256. 237. 0.1075 6. 256. 1892. 639. 2560. 1892. 639. 2560. 1892. 639. 2560. 1892. 639. 2560. 1893. 639. 2560. 1893. 1200 2560. 1894. 464. 1174. 812. 362. 117. 658. 651. 177.	0. 0.	•0		•0		•0	•	0	1.0000	•0	0
256. 269. 0.6819 63. 256. 103. 0.4650 20. 256. 103. 0.3840 16. 256. 186. 0.3840 16. 256. 175. 0.3840 11. 256. 177. 0.2162 9. 256. 257. 0.1786 8. 256. 237. 0.1786 8. 256. 237. 0.1218 5. 256. 250. 1892. 639. 2560. 1892. 639. REYENUE IN \$ 1000 REYENUE OUTLAY 844. 1174. 812. 362. 1057. 779. 277. 250. 688. 651. 17.	256. 269. 0.6819 63. 256. 103. 0.4650 20. 256. 103. 0.4650 20. 256. 186. 0.3871 42. 256. 175. 0.2619 11. 256. 177. 0.1786 8. 256. 237. 0.1475 6. 256. 237. 0.1218 5. 256. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANCE 1174. 812. 362. 1175. 668. 651. 177.	256. 269. 0.6819 63. 256. 103. 0.5631 24. 256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 175. 0.2619 11. 256. 177. 0.2619 11. 256. 269. 0.1786 8. 256. 269. 0.1786 8. 256. 269. 0.1786 6. 256. 269. 0.1786 6. 256. 269. 0.1786 6. 256. 1892. 0.1218 5. 256. 1892. 639. 2560. 1892. 639. 2560. 1892. 639. 2560. 1892. 639. 2560. 1893. 120. 8EYENUE QUILAY 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	545.	• •	•	545.		ċ	•	ċ	0.8258	450.	• •
256. 209. 0.5631 24. 256. 103. 0.4650 20. 256. 164. 0.3171 42. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 237. 0.1475 6. 256. 237. 0.1218 5. 256. 237. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY 8612. 362. 177. 668. 651. 177.	256. 209. 0.5631 24. 256. 103. 0.4650 20. 256. 164. 0.3171 42. 256. 1175. 0.2162 9. 256. 170. 0.1786 8. 256. 237. 0.1218 5. 0. 0. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANCE - 1174. 1174. 812. 362. 1175. 668. 651. 177.	256. 209. 0.5631 24. 256. 103. 0.4650 20. 256. 164. 0.3171 42. 256. 110. 0.3171 42. 256. 170. 0.1786 8. 256. 237. 0.1475 6. 256. 237. 0.1218 5. 256. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY BALANCE 1174. 812. 362. 1175. 668. 651. 170.		50.		92.		525.	256.	269.	0.6819	63.	183.
256. 103. 0.4650 20. 256. 164. 0.3840 16. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 257. 0.1786 6. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEYENUE IN \$ 1000 BEYENUE OUTLAY 1174. 812. 362. 1776. 658.	256. 103. 0.4650 20. 256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 170. 0.2619 11. 256. 170. 0.1786 8. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BRESENT VALUE IN \$ 1000 BREYENUE DUILAY BALANGE 1174. 812. 362. 1175. 668. 651. 17.	256. 103. 0.4650 20. 256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 170. 0.2619 11. 256. 170. 0.1786 8. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEVENUE OUTLAY BALANCE - 1174. 812. 362. 1176. 668. 651. 170.	1974 42. 0. 42.	•	•	45.		465.	256.	209.	0.5631	24.	118.
256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 257. 0.1786 6. 256. 237. 0.1786 6. 256. 237. 0.1786 6. 256. 237. 0.1786 6. 256. 1892. 0.1006 -14. 2560. 1892. 639. 2560. 1892. 639. 2560. 1892. 639. 2560. 1892. 639.	256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 1175. 0.2619 11. 256. 170. 0.1786 8. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANCE 1311. 847. 464. 1174. 812. 362. 11057. 779. 277. 668. 651. 17.	256. 164. 0.3840 16. 256. 186. 0.3171 42. 256. 1170. 0.2162 9. 256. 170. 0.1786 8. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEYENUE DUILAY BALANCE - 1174. 8120. 268. 651. 177. 463. 56299.	, 42. 0.	•	•	42.		359.	256.	103.	0.4650	20.	48.
256. 186. 0.3171 42. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 269. 0.1786 8. 256. 237. 0.1218 5. 0. 0.1000 2560. 1892. 639. 2560. 1892. 639. 1311. 847. 464. 1174. 812. 362. 1174. 812. 277. 668. 651. 17.	256. 186. 0.3171 42. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 269. 0.1475 6. 256. 237. 0.1218 5. 0. 0.1000 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY 8464. 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	256. 186. 0.3171 42. 256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 269. 0.1475 6. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE OUTLAY BALANGE 1174. 812. 362. 1057. 779. 277. 668. 651. 177.	1976 42. 0. 42.	•	•	42.		420.	256.	164.	0.3840	16.	63.
256. 175. 0.2619 11. 256. 170. 0.2162 9. 256. 269. 0.1786 8. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANGE 1174. 812. 362. 1174. 668. 651. 17. 668. 651. 17.	256. 175. 0.2619 11. 256. 170. 0.1766 9. 256. 269. 0.1786 8. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY BALANCE 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	256. 175. 0.2619 11. 256. 170. 0.1786 8. 256. 269. 0.1786 8. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY 844. 1174. 812. 362. 120. 668. 651. 17.	1977 133. 0. 133.	•0	0. 133.	133.		442.	256.	186.	0.3171	42.	· 66
256. 110. 0.2162 9. 256. 170. 0.1786 8. 256. 237. 0.1218 6. 256. 237. 0.1218 5. 256. 1892. 0.1006 -14. 2560. 1892. 639. REYENUE IN \$ 1000 REYENUE OUILAY BALANGE 1174. 812. 362. 1057. 779. 277. 2568. 651. 177.	256. 110. 0.2162 9. 256. 170. 0.1786 8. 256. 269. 0.1718 6. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY BALANCE - 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	256. 110. 0.2162 9. 256. 170. 0.1786 8. 256. 269. 0.1475 6. 256. 237. 0.1218 5. 0. 1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE QUILAY 844. 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	42. 0.			42.		431.	256.	175.	0.2619	11.	40.
256. 170. 0.1786 8. 256. 269. 0.1475 6. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE OUILAY 8464. 1174. 812. 362. 1057. 779. 277. 668. 651. 17.	256. 170. 0.1786 8. 256. 269. 0.1718 6. 256. 237. 0.1218 5. 256. 1892. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANGE - 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	256. 170. 0.1786 8. 256. 269. 0.1718 6. 256. 237. 0.1218 5. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE OUILAY BALANCE - 1174. 812. 362. 1057. 779. 277. 668. 651. 177.	1979 42. 0. 42.	4	4	42.		366.	256.	110.	0.2162	6	24.
256. 269. 0.1475 6. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEYENUE DUILAY BALANGE 1174. 812. 362. 11057. 779. 277. 668. 651. 17.	256. 269. 0.1475 6. 256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEYENT VALUE IN \$ 1000 BEYENUE DUILAY BALANGE 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	256. 269. 0.1475 6. 256. 237. 0.1218 5. 256. 1892. 639. 2560. 1892. 639. BEYENUE IN \$ 1000 BEYENUE QUILAY BALANGE 1174. 812. 362. 1057. 779. 277. 668. 651. 177.	1980 42. 0. 42.	•	•	42.		426.	256.	170.	0.1786	8	30.
256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEYENUE DUILAY BALANGE 1174. 812. 362. 11057. 779. 277. 668. 651. 17.	256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANGE 1311. 847. 464. 1174. 812. 362. 1057. 779. 277. 668. 651. 17. 463. 56299.	256. 237. 0.1218 5. 0. 0. 0.1006 -14. 2560. 1892. 639. BEYENI VALUE IN \$ 1000 BEYENUE DUILAY BALANGE 1174. 812. 362. 1057. 779. 277. 668. 651. 177.	42. 0.	42. 0. 42.	0. 42.	42.		525.	256.	5692	0.1475	•9	0,4
2560. 1892. 639. 639. 639. 8560. 1892. 639. 639. 8EYENUE IN \$ 1000 BEYENUE OUTLAY BALANGE 1174. 812. 362. 1174. 829. 779. 120. 668. 651. 17.	2560. 1892. 639. 2560. 1892. 639. BEYENUE IN \$ 1000 BEYENUE OUILAY BALANGE 1174. 812. 362. 1057. 779. 277. 829. 709. 120. 668. 651. 17. 463. 56299.	2560. 1892. 639. 2560. 1892. 639. BEYENUE IN \$ 1000 BEYENUE OUILAY BALANGE 1174. 812. 362. 1057. 779. 277. 829. 709. 120. 668. 651. 17. 463. 56299.	1982 42. 0. 42.	_	_	42.		493.	256.	237.	0.1218	5.	29.
PRESENT VALUE IN \$ 1000 BEYENUE QUILAY BALANCE 1311. 847. 464. 1174. 812. 362. 11057. 779. 277. 829. 709. 120. 668. 651. 17.	PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANGE 1311 847 464. 1174 812. 277. 1057 779. 277. 668. 651. 170.	PRESENT VALUE IN \$ 1000 BEYENUE OUILAY BALANGE 13.11. 847. 464. 11.74. 812. 362. 1057. 779. 277. 668. 651. 170. 463. 56299.	-50.	-50.		-136.		•	•	•	0.1006	-14.	•0
PRESENT VALUE IN \$ 1000	PRESENT VALUE IN \$ 1000 BEYENUE DUILAY BALANG 1311. 847. 1174. 812. 1057. 779. 829. 709. 668. 651. 463. 562.	PRESENT VALUE IN \$ 1000	TOTAL 970. 0. 970.	•0		970•		4452.	2560.	1892.		639.	639.
BENENUE DUILLAY BALANG 1311. 847. 1812. 1174. 812. 1057. 779. 668. 651.	BEYENT VALUE IN \$ 1000 BEYENUE DUILAY BALANG 1311 847. 1174. 812. 1057. 779. 829. 709. 668. 651. 463. 562.	PRESENT VALUE IN \$ 1000 BEYENUE DUILLAY BALANG 1311 847 1174 812 1057 779 829 709 668 651 463 562											
1311. 847. 1174. 812. 1057. 779. 829. 709. 668. 651.	1311. 847. 1174. 812. 1057. 779. 829. 709. 668. 651. 463. 562.	1311. 847. 1174. 812. 1057. 779. 829. 709. 668. 651. 463. 562.	INTEREST BENEF			BENEF	ENEF	AIIQ		PRESENT BEVENUE		1000 BALANGE	
1057. 779. 829. 709. 668. 651.	1057. 779. 829. 709. 668. 651. 463. 562.	1057. 779. 829. 709. 668. 651. 463. 562.	00.9	00-9	900			1.55		1311		464.	
829. 709. 668. 651.	829. 709. 668. 651. 463. 562.	829. 709. 668. 651. 463. 562.						.36		1057		277.	
668. 651.	668. 651. 463. 562.	668. 651. 463. 562.						1.17		829		120.	
	•700 •604	*70C *60t	00.02	00.02	0.0			1.03		999		17.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSIS

25 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. +.50 GRAIN PR. \$2.00 FEED EFF. 3.0 IMPROVED CUT OUT

ANNUAL RETURN CN CAPITAL 14.61 PERCENT

92. 535. 42. 475. 42. 430. 134. 452. 42. 441. 42. 384. 42. 535. 42. 503. -136. 0		200000000000000000000000000000000000000
5 1	BENEFIT/COST 	BER_CENI BENEFIT/COST 6.00 8.00 10.20 10.00 15.00 15.00 15.00 0.99 20.00
öl	BENEFIT/C BAILD 1.31 1.22 1.15 1.15 0.99	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSIS

26 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.00 FEED EFF. 3.5 YEARS PROD 5

ANNUAL RETURN ON CAPITAL 15.23 PERCENT

JE	NET REVENUE	0. 172. 110. 36. 61. 78. 6.		
	VESTMENT	0. 386. 91. 22. 19. 17. 15. -93.	000 BALANGE 150. 109. 74. 3. -48.	
	VALUE	1.000 0.8678 0.6535 0.5671 0.4271 0.3706	VALUE IN \$ 1000 QUILAY BAI 466. 465. 458. 478. 418.	
-	NET REVENUE	0. 229. 169. 63. 124. 182. 0.	PRESENT REVENUE 617- 576- 539- 461- 398-	
OPERATING (\$ 1000	OPERATING EXPENSES **	296. 296. 296. 296. 296. 296.		
	TOTAL	0. 0. 525. 465. 359. 420. 478. 0.	BENEFIT/COST 1.32 1.23 1.23 1.16 1.01 0.89	
-	TCTAL	445 121 34 34 34 -250	a 1	
INVESTMENT (\$ 1000	WORKING CAPITAL	.00000000	N. 000000	
	FACILITIES	44 00 00 00 00 00 00 00 00 00 00 00 00 0	INTEREST PEB_CENI 6.00 8.00 10.00 15.00 20.00	
9	I DENT.	1971 1972 1972 1973 1974 1976 107AL		
3	NO.	ひょこきゅう		

27 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STD GRAIN PR. \$2.00 FEED EFF. 3.5 YEARS PROD 15

ANNUAL RETURN ON CAPITAL 16.00 PERCENT

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

28 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 35 LITTER 8.0 HOG PR. STO GRAIN PR. \$2.00 FEED EFF. 3.5 IN AND OUTER

ANNUAL RETURN ON CAPITAL 14.32 PERCENT

TEAR							*11.000		
NO. IDENT.	FACILITIES	WORKING	TCTAL	TOTAL	OPERATING EXPENSES **	REVENUE	VALUE VALUE FACTOR	INVESTMENT	NET REVENUE
1971	0	0	0	0.	0.	0	1.0000	0.	0
1972	511.	•	511.	0	•	0	C.8747	447.	0
1973	34.	50.	84.	525.	296.	229.	0.7652	64.	175
1974	5.	0	5.	493.	296.	197.	0.6693	3.	132
1975	71.	-30	.14	•	20.	-20-	0.5855	24.	-12.
1976	. 40	30.	64.	420.	296.	124.	0.5122	33.	49
1977	34.	•	34.	442.	296.	146.	0.4480	15.	99
1978	5.	0	5.	459.	296.	163.	0.3919	2.	49
6 1979	163.	-36.	133.	•	20.	-20-	0.3428	46.	-
9 1980	34.	30.	64.	426.	296	130.	0.2999	19.	39
1861 01	34.	6	34.	525.	296.	229.	0.2623	•6	9
11 1982	5.	0	5.	493.	284.	209.	0.2294	.1	48
1983	-125.	-50	-175.	•	•	ò	0.2007	-35.	.
TOTAL	805	0	805.	3783.	2396.	1387.		628.	628.
	INTEREST PER_CENT	ST	6 0 (BENEFIT/COST		PRESENT REYENUE	VALUE IN \$ 1000	1000 BALANCE	
	90	0 (1.32		-096		235.	
	10.00			1.15		774.	676-	-001	
	15.00	0		86.0		•609		-12.	
	20.00	0		0.86		493		-85.	
	30.00	0		69.0		346.	502.	-156.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCCME TAX

INVESTMENT FEASIBILITY ANALYSIS

29 ANALYSIS OF 450 SOW FARROW TO MARKET OPERATION C. R. RAYL LITTER 8.6 GRAIN COST \$2.70 SUPPLEMENT \$6.00 FEED EFF 3.5

ANNUAL RETURN ON CAPITAL -4.50 PERCENT

2			INVESTMENT (\$ 1000	•		OPERATING (\$ 1000	-	THEOLOGIC	PRESENT VALUE	VALUE
P.	IDENT.	FACILITIES	WORKING CAPITAL	TOTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE		INVESTMENT	NET REVENUE
1	1971	373.	49.	422.	301.	299.	2.	1.0471	442.	2.
7	1972	23.	•	23.	363.	299.	.49	1.0964	25.	10.
m	1973	23.	•	23.	423.	299.	124.	1.1480	26.	142.
4	1974	23.	0	23.	374.	299.	75.	1.2021	28.	•06
ĸ	1975	23.	0	23.	288.	299.	-11.	1.2587	29.	-14.
9	1976	162.	0	162.	338.	299.	39.	1,3180	214.	51.
-	1977	23.	°	23.	355.	299.	56.	1.3800	32.	77.
æ	1978	23.	•	23.	346.	299°	47.	1.4450	33.	68.
6	1979	23.	•	23.	301.	299.	2°	1,5131	35.	3.
10	1980	23.	ô	23.	439.	299.	140.	1.5843	36.	222.
11	1961	-64.	-46.	-113.	•	•	•0	1.6589	-187.	٥.
			1 1 1 1 1 1 1		1 1 1 1 1 1 1 1 1					
	TOTAL	655.	°	655.	3528.	2990.	538.		712.	712.
		INTEREST PER_CENI	EST		BENEFIT/COST RAIIO		PRESENT REVENUE	PRESENT VALUE IN \$ 1000 EVENUE DUILAY BAI	1000 BALANCE	
		4	00.4		99-0		895	584.	-196-	
			200		0.62		351.	563	-212.	
		10.00	00		0.59		320.	543.	-223	
		15.00	00		0.52		258.	498	-241.	
		20.	00		0.46		212.	460.	-248	
		30.	00		0.38		152.	401.	-248.	

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

R. PHILLIPS AG. ECON. 641, K.S.U.

FEASIBILITY LVATICSSVII

30 ANALYSIS OF 600 SOW FARROW TO MARKET OPERATION C. R. RAYL FAC 15 LITTER 8.5 HOG PR. STD GRAIN PR. \$2.00 FEED EFF 3.25 RENT HERD

ANNUAL RETURN ON CAPITAL 31.08 PERCENT

INVEST	INVESTMENT (\$ 1000		OPER	OPERATING (\$ 1000		PRESENT	PRESENT VALUE	VALUE
DENT. FACILITIES	WORK ING CAPITAL	TCTAL	TOTAL	OPERATING EXPENSES **	NET REVENUE		INVESTMENT	NET REVENUE
	0	0	0.	0	0.0	1.0000	0	•0
m	•	370.	•	ċ	•	0.7629	282.	• C
1973 18.	46.	.49	505	271.	231.	0.5820	37.	134.
18.	ô	18.	445	271.	174.	0.4440	æ	77.
1975 18.	0	18.	344.	271.	73.	0.3387	•9	25.
18.	ô	18.	402.	271.	131.	0.2584	5.	34.
130.	o	130	423.	271.	152.	0.1971	26.	30.
	0	18.	412.	271.	141.	0.1564	3.	21.
1979 18.	•0	18.	359.	271.	88	0.1147	2.	10.
	•	18.	408	271.	137.	0.0875	2.	12.
	•	18.	502	271.	231.	0.0668	1.2	15.
1982 18.	•	18.	445	271.	174.	0.0509	1.2	6
•	-46.	-117.	3	•	0	0.0389	-5-	80
TOTAL 591.	•0	591.	4242.	2710.	1532.		368.	368.
INTEREST PER CENT	LEST FNT		BENEFIT/COST		PRESENT	VALUE IN \$ 1000	1000 BALANCE	
					-			
	00.0		66.1		1065		526°	
•	8.00		1.84		955.		437.	
10.00	00		1.72		860.		359.	
15.00	00		1.47		677.		215.	
26.00	00		1.28		547.		119.	
00.04	00		1.02		181.		ď	

^{**}EXCLUDING DEPRECIATION, INTEREST, AND INCCME TAX

COLUMBIA, MD

LOGISTICS RESEARCH

**EXCLUDING DEPRECIATION, INTEREST, AND INCOME TAX

FEASIBILITY ANALYSIS INVESTMENT

31 ANALYSIS OF 60C SOW FARROW TO WEANING OPERATION C. R. RAYL FAC FOR P16 8.5 P1G PR. STD x 1.5 x 45 GRAIN PR. \$2.00 RENT HERD TWD MEN

PERCENT	
60.0-	
CAPITAL	
Š	
RETURN	
ANNUAL	

NO. IDENT. FACILITIES CAPITAL 0 1971 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	TOTAL TOTAL TOTAL TOTAL TOTAL REVENUE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	OPERATING EXPENSES ** 0.0.00. 101. 101. 101. 101. 101. 101.	REVENUE 00.00.00.00.00.00.00.00.00.00.00.00.00.	1.0053 1.0053 1.0053 1.0053 1.0053 1.0053 1.0053 1.0053	INVESTMENT 285. 285. 35. 18. 18. 18. 18. 18.	R EVE
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1972 285. 1973 18. 1974 18. 1975 18. 1976 18. 1977 53. 1978 18. 1980 18. 1981 18. 1982 18. 1982 18. 1983 -94. TOTAL 406.]-	200000000	6 9 4 4 6 9 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1.0009 1.0018 1.0026 1.0035 1.0053 1.0062 1.0070 1.0070	265. 35. 100. 100. 100. 100.	044W4W4
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1975 1976 1977 1977 1978 1980 1980 1981 1982 1983 1983 1983 1983 1984 1984 1984 1984 1987] -	0000000	468 W W W W W W W W W W W W W W W W W W W	1.0035 1.0053 1.0062 1.0062 1.0070 1.0088		4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8
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1978 18. 1979 18. 1980 18. 1981 18. 1982 18. 1983 -94. TOTAL 406.		01110	97. 19. 66.	1.0062 1.0070 1.0079 1.0088	18. 18.	37 19 19 19
1979 18. 1980 18. 1981 18. 1982 18. 1983 -94. TOTAL 406.		100	19. 66. 47.	1.0070 1.0079 1.0088	18. 18.	19 35 67
1980 18. 1981 18. 1982 18. 1983 -94. TOTAL 406.		0100	35. 66.	1.0079	18.	35
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406.	1 -	1 4 4 4 4 4 4 1 1 1 1	•	1.0106	-112.	• •
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INTEREST						
PER CENT	BENEFIT/COST RATIO	· ·	PRESENT	PRESENT VALUE IN \$ 1000 EVENUE GUTLAY BA	1000 BALANCE	
The second secon		•				
00*9	0.74		281.	378.	-97.	
00°8	89.0		252	368	-116.	
10-00	0.63		227.	358.	-131.	
15.00	46.0		179.	334.	-155.	
20.00	24.0		145.	311.	-167.	
30.00	0.37		101	275.	-173	

INVESTMENT FEASIBILITY ANALYSIS

37 ANALYSIS CF 633 SCW FARROW TO WEANING OPERATION G. R. KAYL FAL FCR PIG 8.5 PIG PR. SIC X 1.6 X 45 GRAIN PR. \$2.00 RENT HERD TWO MEN

ANNUAL RETURN CN CAPITAL 11.84 PERCENT

	9		10 m				TALABO		1111111111
TERK ICENT	FACILITIES	WCRKING CAPITAL	TCTAL	TC TAL REVENUE	CPERATING EXPCNSES **	REVENUE	(> L	INVESTMENT	NET VEVO.40
1571				ن	0		0300.	• 0	0
1972	265.	:	265.	ં	• •	• 0	1768.0	20%	· 0
1973	18.	54.	45.	201.	101.	100.	C • 7995	. 14.	90.
1974	18.	ئ	18.	178.	101.	17.	0.7148	• •	
1975	18.	٤	18.	138.	101.	37.	0.6391	. 51	. 4.7
1976	18.	ċ	18.	161.	101.	• 39	0.5715	• • • •	24.
1577	, F.3.	•	53.	169.	101.	• 8 •	0.5110	-17	35.
1578	18.	٠	18.	165.	101.	• 49	0.4569	·	
1979	18.	٠	16.	144.	101.	43.	0.4065	7.	•:aŢ
1580	18.	•	18.	164.	101.	63.	0.3652	٦.	23.
1981	18.	<u>.</u>	18.	201.	101.	100.	0.3266	• 9	•
1982	18.	:	18.	176.	101.	-11.	0.2920	•	.2.
	-64.	-24.	-118.	ن	• 0	٠,	C.2611	- 31.	0
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TCTAL	406.	ċ	466.	1655.	1010.	685.		• 50.5	•. •.
	INTEREST	FST	Ð	BENEFIT/CCST		PRESENT	VALUE IN US	11CCC BALANG	
	7-22	Tas							
	55.9	00		1.26		414.		.86	
	33.8	22		1.16		458.	371.	58.	
	10.	00		1.07		367,		• 67	
	15.	၁၁		25.2		364.		- 34 .	
	20.0	22		0.78		245.	. 316.	-70.	
	30.	22.0		0.61		170.		-106-	

**EXCLUCING CEPRECIATION, INTEREST, AND INCOME TAX

INVESTMENT FEASIBILITY ANALYSIS

33 AMALYSTS OF 6CO SOW FARKUW TO MARKET OPERATION C. K. KAYL FAC.35 LITTER 8.º HOG PA. STD GRAIN \$2.00 FLED TEF. 3.5 REPLACE INTERNALLY

ANNUAL RETURN DV CAPITAL 19.02 PERCENT

ND 10ENT		*************					1425.70	1 1 1 1 1 1 1 1 1 1	
1971	FACILITIFS	WORKING CAPITAL	TCTAL	TOTAL REVENUE	OPERATING EXPLNSES **	NET REVLNUE	VALUE FACTO	IN STALNI	NET N.VENUE
1972	0	0	•0	•0	0.	0		• 1)	0
	511.	0•	511.	•0	• 0	•	0.8402	• 1.74	ؾؙ
6767	10.	>0.5	•09	513.	. 46.7	-177	0.07.0		153.
3 1974	10.	•0	10.	455.	.467	159.	0.5931	• ,	76
4 1975	10.	•0	•01	351.	296.	55.	0.4983	5	7.7
1976	10.	•	10.	411.	296.	.15.	19.4187	3	. 48
1977	102.	c	102.	435.	296.	136.	0.331h	• 0.5	**
1978	10.	• C	10.	477.	.96.	126.	0.2425		71
6 1616	10.	•0	:0:	367	296.	7.1.	6847.0	, i	. Q
_	10.	0	10.	417.	296.	121.	1.2007	2.	25
1981	10.	c	10.	513.	296.	217.	0.1753	•	36
1 1982	10.	0	10.	•683•	7967	.87.	0.1473	-23	2.5
	-96-	-04-	-136.	•0	•	•0	0.1238	-; .	٦
TOTAL	617.	0	617.	4364	.0962	. 404		51.7	517.
	3 3 3								
	INTEREST	15=	9.9	BENEFIT/COST		PRESENT	VALUE IN \$US 1300	0001 50	
	PER CINI	IXI		EALIU		AEVENUE	UUTLAY	EALAIC	
	00.9	00		1.64		972.		5/8.	
	8.00	06		1.49		970		€88.	
	10.00	00		1.37		733.		• 5 7 2	
	15.00	00		1.14		615.	.056	75.	
	€0.0°	υC		26.0		•965			
	30.00	00		0.75		346.		-114.	

**FXCLUDING DEPRECIATION, INTEREST, AND INCOME TAK

8.0 MONTHLY OPERATING COSTS AND REVENUES UNDER THE SELECTED ALTERNATIVE

8.1 Method of Selection

The selection of the promising and realistic alternative is based on the findings discussed in Chapter 7. The inputs into this alternative are technically and economically sound from the standpoint of facilities cost, market hog prices, feed grain and production costs and the production performance expected from swine. These inputs combine the more profitable variables investigated in Chapters 6 and 7. However, realism and accuracy are not sacrificed for optimism. The projected cash flow and return on investment for this alternative is computed in the same manner as described in Chapters 6 and 7 except that the projected schedule of capital investment and the projected schedule of net operating revenue is computed monthly rather than annually as in the previous chapters.

8.2 General Desgin of Selected Alternative

The selected alternative is a 600-sow farrow-to-market operation. This operation would have a contractor-constructed 3-building, 156-sow capacity farrowing unit, and a 3-building, 1350-pig nursery. Both of these units are fully slatted and environment controlled. The 680 head gestation facility for the breeding herd and a 20-lot, 3700-head, open-lot finishing facility are to be producer constructed.

This operation requires 100 acres of land and two wells.

Feed grain storage is limited to a required 60-day supply.

The production cycle is for a sow to enter the farrowing house, farrow and remain for not more than 4 weeks. The pigs would then be transferred to the nursery for 4 weeks and the sow returned to the gestation facility for breeding. The pigs are then transferred to the finishing facility for an

additional 15 to 16 weeks, until they reach 220 pounds. Each facility has a 2-week cleaning and airing period at the end of each cycle. This practice enhances disease control. The construction, replacement, and repair schedule for this facility is shown in Table 9-1.

8.3 Monthly Projected Volume and Sales Revenue

The monthly projected volume is based on 8.0 pigs per litter raised to a market weight of 220 pounds. The total annual volume produced by 600 sows is 9600 head. Annual replacement of breeding stock requires that 200 gilts be returned to the breeding herd. The total projected market volume is 9600 less 220, or 9380 head annually. Continuous farrowing under environmentally-controlled conditions would produce a nearly constant outflow of market hogs.

Sow and boar salvage volume is based on replacement of the sows every 3 years and the boars every 2 years. The sale volume of sows is 220 annually at a weight of 550 pounds and is evenly distributed throughout the year except in the start up and phase out of the project. Initially, projections are that 5 sows per month would be marketed at a weight of 400 pounds during January to June, 1973 and 10 sows per month would be marketed at a weight of 450 pounds during July to December, 1973. During phase out, the sows would be marketed as their litters were weaned from December 1982 through May, 1983.

The projected volume of boars to be marketed is 5 in January and 5 in June, three months after purchase of their replacements. This practice is to establish the new boars as capable breeders. The projected market weight of the boars is 700 pounds. All boars would be phased out and marketed in February, 1983.

The projected monthly sales revenue from market hogs is computed by

multiplying monthly volume marketed by the projected monthly price shown in Table 5-6. The total market hog revenue is shown in column 4, Table 9-2.

The projected revenue from the salvage of boars and sows is calculated by multiplying the projected volume by the market hog price less \$3 per hundred for sows and less \$10 per hundred for boars. Marketings of sows during start up would be at a lighter wieght and command a higher price; thus, the marketings during the start up from January 1973 to December 1973 are calculated at \$2 per hundred less than the projected market hog price.

The sow and boar salvage revenue is shown in column 5, Table 9-2.

8.4 Monthly Projected Market Hog and Herd Production Cost

The projected market hog production costs were based on a 3.5 feed efficiency or 662 pounds of milo and 110 pounds protein supplement discussed in Chapter 3, and an average milo price of \$2.00 and a protein price of \$6.00 per hundredweight seasonally adjusted as shown in Table 4-1.

Other costs included were Health - 96¢ per pig (Table 6-7), Utilities - \$1.25 per pig, Market Expense - \$1.50 per pig and Pig Starter Feed - 47¢ per pig. The average cost after birth for a 215 pound pig marketed is \$24.61 or \$11.45 per hundredweight. These costs are prorated during the start up phase to reflect the number of pigs in the farrowing house, nursery and finishing house. The total monthly projected market hog production cost is shown in column 6, Table 9-2.

The projected monthly herd production costs are computed for a 660 sow herd (60 head of gilts for replacements) and 20 boars. The annual milo consumption is computed at 1730 pounds for sows and 1648 pounds for boars. Annual protein supplement consumption is computed at 420 pounds for sows and 400 pounds for boars. The price for this supplement is projected at \$6.00

per hundredweight. The average milo price is \$2.00 per hundredweight seasonally adjusted as shown in Table 4-1. Herd health cost is estimated to be \$1.50 per head per year. Marketing expense of \$1.50 per head is evenly divided throughout the project. During the start up and phase out periods these costs are prorated according to the procurement and sales schedules. The total monthly projected herd production costs are shown in column 7, Table 9-2.

The projected monthly overhead costs are shown in column 8, Table 9-2. The detailed computation of these costs is shown in Table 6-8. The minor difference in the start up phase represents monthly management costs and expenses prior to hiring labor. These costs are expected to remain relatively stable and are computed as an average monthly outlay without seasonal adjustment.

9.0 PROJECTED CASH FLOW AND RETURN ON INVESTMENT FOR THE SELECTED ALTERNATIVE

9.1 Monthly Projection Method

The monthly projected cash flow for this alternative is simultaneously affected by the capital cost for facilities and equipment, the breeding herd procurement schedule, the construction and start up schedule, the operating capital requirements and the projected monthly net revenue. The method used to measure the potential return for this alternative is the internal rate of return discussed in detail in Chapter 7. The interaction of the hog cycle and seasonal fluctuations in the price of milo produce large monthly changes in the net income schedule of commercial swine operations. Therefore, the economic potential of the selected alternative is measured by scheduling the investments and benefits monthly.

9.2 Projected Capital Investment for Facilities and Equipment

The projected capital requirements for facilities is based on the construction schedule of the facilities (Table 9-1) and the purchase schedule for equipment. The estimated monthly capital requirements are shown in the first column of Table 9-2. The largest portion of the capital investment for facilities occurs during 1972 as is indicated in Table 9-2 with major reinvestment occurring in 1977 and 1979 to replace worn out equipment (Table 9-1A) in concurrence with engineering replacement schedules. This accounting for replacement is in accordance with the principles of an IRR analysis. The repairs and maintenance are included in this column and are estimated to be \$500 per month. The salvage value of the project is shown as an investment credit at the bottom of column 1 in Table 9-2. The credit is one-third the original cost of equipment and facilities plus the full value of the land and site improvements (Table

9-1B)

9.3 Projected Capital Investment for Breeding Stock

The capital investment for breeding stock is shown in column 2 of Table 9-2. The major portion of this investment occurs in the period from July 1972 to December 1972. Minor capital investments are required for replacement gilts from January 1973 until November 1973 prior to the maturity of gilts produced by this operation. Purebred boars are purchased annually from established purebred breeders at the spring and fall sales and the capital investment is made in March and October.

A study of the purebred publications reports of purebred sales indicates that the price of breeding stock fluctuates more violently than the price of market hogs. The purchase price of gilts should be about \$100 per head considering that the hog cycle in 1972 will be at a low ebb and that project acquisitions would represent a relatively large volume purchase. The price of purebred boars is expected to be about \$300 per head. No investment credit is made at the bottom of column 2 in Table 9-2 as the herd salvage value at the end of the project is accounted as an increase in herd salvage revenue in column 5. The total capital investment in facilities is shown in the first column of Analysis 34 and is the summation of the monthly investment in facilities and breeding stock. This column is labeled Facilities in the analysis.

9.4 Projected Working Capital Requirements

The monthly projected working capital requirements show a rapid buildup in column 3 of Table 9-2 and column 2, Analysis 34, until the operation produces a positive net revenue. The working capital requirement is constructed by addition of the monthly production expenses and the overhead. The initial requirement prior to May 1973 accumulates to slightly over \$93,000. This

large requirement is retired by transferring funds from net revenue into working capital. This requirement levels out at approximately \$25,000 and fluctuates with the seasonal changes in the milo price.

Investment credits for working capital are entered during the close out phase of the project.

9.5 Projected Monthly Net Revenue

The projected monthly schedules of operating total revenue, operating expenses, and net revenue before depreciation, interest and income tax are shown in the center section of Analysis 34. The large negative net revenue figures until May, 1973 are due to start up production expenses in the absence of revenue. The net revenue fluctuations are caused by the interaction of the hog cycle and the seasonal variations in hog prices. Net revenue is relatively high for the initial month of production, due to the projected peak in cyclic hog prices, and reaches a maximum in February, 1974. Net revenue declines with minor monthly fluctuations until November, 1976 and starts recovering to another peak in February, 1978. The lowest projected net revenue occurs in April, 1979. However, this net revenue is sufficient to cover operating expenses for that month. According to the projections, the months from November through May of 1980 will be the most difficult for the project financially. Nevertheless, this low occurs after a sufficient period of higher net revenue to tide over the project until the upward swing in the hog price cycle brings improved earnings in 1981 and 1982.

9.6 Summary Evaluation of the Selected Alternative

The selected alternative produces an internal return on total capital of 36.46 percent and a present value balance at 8 percent interest of \$825,780

before depreciation, interest and income tax as shown in Analysis 34. The corresponding benefit-cost ratio is 2.89.

The project yields a sufficient internal rate of return to be highly attractive to prospective investors by cursory comparisons in relation to the present opportunity cost of capital.

 ${\bf Table~9-1}$ Facility Construction and Equipment Purchase Schedule

Month	Item	Cost	Total Monthly Investment
Mar. 1972	Land (100 acres at \$250) Pickup Truck	\$25,000 3,000	\$28,000
Apr. 1972	Gestation Facility (25% of \$70 x 680) Tractor	11,900 3,000	14,900
May 1972	Gestation Facility (25% of \$70 x 680) Water system	11,900 6,000	17,900
June 1972	Gestation facility (25% of \$70 x 680) Pig trailer Incidentals Feed handling equipment Feed wagon	11,900 500 1,500 400 2,000	16,300
July 1972	Gestation facility (25% of \$70 x 680)	11,900	11,900
Aug. 1972	Farrowing house (10% of one house) Finishing facility (33-1/3% of facil.)		21,880
Sept. 1972	Farrowing house (40% of one house) Farrowing house (10% of one house) Nursery (10% of one building) Finishing facility (33-1/3% of facil.)	13,520 3,380 1,650 18,500	37,050
Oct. 1972	Farrowing house (50% of one house) Farrowing house (40% of one house) Farrowing house (10% of one house) Nursery (10% of one building) Nursery (10% of one building) Nursery (40% of one building) Finishing facility (33-1/3% of facil.) Feed handling equipment	16,900 13,520 3,380 1,650 1,650 6,550 18,500 800	62,950

Table 9-1 (cont.)

Month	Item	Cost	Total Monthly Investment
Nov. 1972			\$79,470
	Farrowing house (40% of one house)	13,520	
	Farrowing house (50% of one house)	16,900	
	Nursery (50% of one building)	8,150	
	Nursery (40% of one building)	6,550	
	Nursery (40% of one building)	6,550	
	Feed mill	25,000	
	Manure handling equipment	2,000	
	Feed handling equipment	800	
Dec. 1972			34,800
	Farrowing house (50% of one house)	16,900	
	Nursery (50% of one building)	8,150	
	Nursery (40% of one building)	8,150	
	Feed handling equipment	1,600	
Jan. 1973			800
Jun. 1775	Feed handling equipment	800	000
			200
Feb. 1973	Food bandling aguiament	800	800
	Feed handling equipment	800	
June 1973			6,000
	Trailer house	6,000	

Table 9-1A

Replacement Schedule for Equipment and Facilities

Item	E E	Month	Cost
Farrowing House			
Replace slats,	hoses, feeders at \$50/unit.	Oct. 1977	\$2,600
		Nov. 1977	2,600
		Dec. 1977	2,600
Finishing Facility			
	feeders, waters and fencing,	W 1070	6 166
estimated at 1/	3 the original total cost.	May 1978 June 1978	6,166
		July 1978	6,166 6,166
		July 1976	0,100
	repairs included in the \$500/ repair and maintenance cost.		
Gestation Facility Replace damaged	feeders, fencing and waters,		
	3 the original total cost.	Aug. 1978	3,966
		Sept.1978	3,966
		Oct. 1978	3,966
Maintenance and Re			
	ost of upkeep of facilities		
value or \$6,000	s 2-1/2% of the original or \$500/month.	\$500/r	nonth
varac or yo,ooo	or 4300, monen.	φ300/1	non en
Equipment	Expected Life	Month Replaced	Cost
Pickup truck	3 years	Mar. 75-78-81	3,000
Tractor	5 years	Apr. 1977	3,000
Pig trailer	5 years	June 1977	500
Manure handler	5 years	Nov. 1977	2,000
Feed wagon	5 years	June 1977	2,000

Table 9-1B
Estimated Salvage Value

Land	Full Value	\$25,000
Well	Full Value	6,000
Buildings & Equipment TOTAL	1/3 Original Cost	100,583 131,583

MONTHLY SCHEDULE OF PROJECTED CAPITAL INVESTMENT, WORKING CAPITAL, OPERATING REVENUE AND OPERATING EXPENSES

Table 9-2

NSES	Over-	Costs	1000	1000	26.56	7577	225C	2:50	2006	2666	2666	2666	+	1	7 4	3 4	4	60	1	66	4	2666	66	46	,	٠.	J,	2 4	4 4	9 4	7 4	2 5	66	46	66	2666	4	1 4	, ,	4	4	4 5	2	4	4	66	66	2466
OPERATING EXPENSES	Herd	Prod.							584	1001	1499	2130	2	1	י נ	2 5	7	3	5	17	24	3365	36	7	7.	, ,	1430	5 0	5	10	2 7	20	8	56	46	0	1	. 4	44	4		50	1 2	2	T (56	46	3400
OPERA	Market	Prod.												C		10	5 5 7	424	945	555	966	19777	576	He E	7 13	, ,		100	750	ייי כ	94.5	656	966	175	963	868	9.49	7 7 7	963	916	936	6 5 6	275	5 5 6	966	7.50	963	186 PC
OPERATING REVENUE	Sow	salv.													4	3	-	7	-	~	п.	117C	5 3	2	-	4 6	25.2	0	7	7 7	77	?	61	4 9	23	\mathbb{S}	a.	07	7	2	0	0	2	2766	26	14	15	5
OPERATING	Market	НОВ																	772	354	641	47673	413	445	779	1	22520	076	1 0	נינ	471	754	47	549	209	665	1 1	103	19E	FFC	445	512	7 5 5	-	278	CFC	789	2
MENT	Work.	ab	S	0	2422	57	2.	25	52	72	16	13	5121	7644	78.57	173	566	957	1482	-3CCP	2195		-762	-364			- u	a	10	1 4	"		Q			•		-	α		^	4	•	169	a	10	4	4.2
CAPITAL INVESTMENT	Breed.	Stock							252	250	1090	253	5	_		· ·	U	C	U	2	$\frac{1}{2}$	1000	J	$\frac{1}{2}$	100	,			1 5 ())) 1						1500					1500							15CC
CAPI	1				7,77	7 7 7	150	630	150	168	105	255	247	C	2	U	U	U	C	U	U	206	U	U	C		ים כ ים ני	1	0	0	0	U	U	O	S	U	U	U	U	U	C	5	U	205	U	U	U	U
	Year	5	12	77	44777	7 .	2	12	12	72	72	72	C721	177	273	373F	4734	573A	673W	1733	E73,	1973AC	£138	1730	573	273	2474.16	574	674	174	£ 74	972	473	174	514	174	4748	574C	475J	775F	E75P	975	C75F	4175JN	275	2754	4755	575C

2666 2666 2666 2666 2666 2666 2666 266	66 66 66 66 66 66 66 66 66 66 66 66 66	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	66666666666666666666666666666666666666
m 1 m 2 m m m m m m u n d m 4 4 4 4 m m m m m m m 4 4 4 4 m m m m m	7444666776644 7444666776644 0346447497496 746447497490	3 H D H H H H H H H H H H H H H H H H H	######################################
18653 18678 19637 19196 1937 19550 19552 19562	18693 19637 19156 19156 19302 19437 19550 19662 19662	18693 1963 1963 1913 1933 1955 1966 1966 1966 1966 1966 1968	18693 19637 19136 19136 19456 19456 19593 19662 19637
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10.0 ACKNOWLEDGMENTS

The author is indebted to many persons and organizations for their helpful information and cooperation provided during the study. Several have been cited in a general way in Section 2.2. The author extends an expression of thanks to Dr. Robert H. Hines, Dr. Leonard W. Schruben, and Dr. John H. McCoy for serving on his graduate committee, to Mr. Joe M. Tiao for computer programming and to the clerical and supporting staff who worked on the study.

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FEASIBILITY ANALYSIS OF A COMMERCIAL SWINE OPERATION

by

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This is a detailed study of the technical and economic feasibility of a commercial swine farrow-to-market operation.

A combination of statistical, mathematical and economic analysis is used in conjunction with current swine husbandry practices to complete the various steps of the feasibility study.

Projected hog prices are estimated by isolating the secular trend and determining annual and monthly fluctuations from the secular trend and developing a price projection model based on historical patterns.

Projected milo prices are developed from historical patterns in annual average prices and monthly deviations from the average price.

Location analysis is made by determining feed costs and hog price differentials by state and the resulting effect on operating margins for the commercial hog operation.

The principle measure of economic potential used in this study is the Internal Rate of Return or I.R.R. The IRR is a measure of the potential return to capital investment in the project based on the time flow of money into and out of the project and is the return which equates the present value of the investment schedule to the present value of the schedule of net benefits.

The inputs into the investment schedules are developed from information received from producers, commercial feed and livestock equipment companies and animal scientists. The inputs into the benefit schedules are developed from the hog price projection model described above.

The financial viability of a commercial swine operation depends upon the construction of the facility at a reasonable cost, breeding programs to enhance feed efficiency, sound animal husbandry practices for marketing large litters

to establish favorable operating margins and initial entry into the market when the hog cycle is in an upswing.

The most promising alternative considered for commercial hog production is a 600-sow continuous farrow-to-market operation. This operation is projected to yield an annual return on capital before depreciation, interest and income tax of 36.46 percent.