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HOG MARKETING CONSIDERATIONS

Prepared by R. H. Bauman, J. H. Armstrong, and R. N. Weigle*
Department of Agricultural Economics

1. Estimating Future Hog Prices.

   A. Cyclical price patterns.

Figure 1. Yearly average price for all barrows and gilts at Indianapolis, 1952-1963.
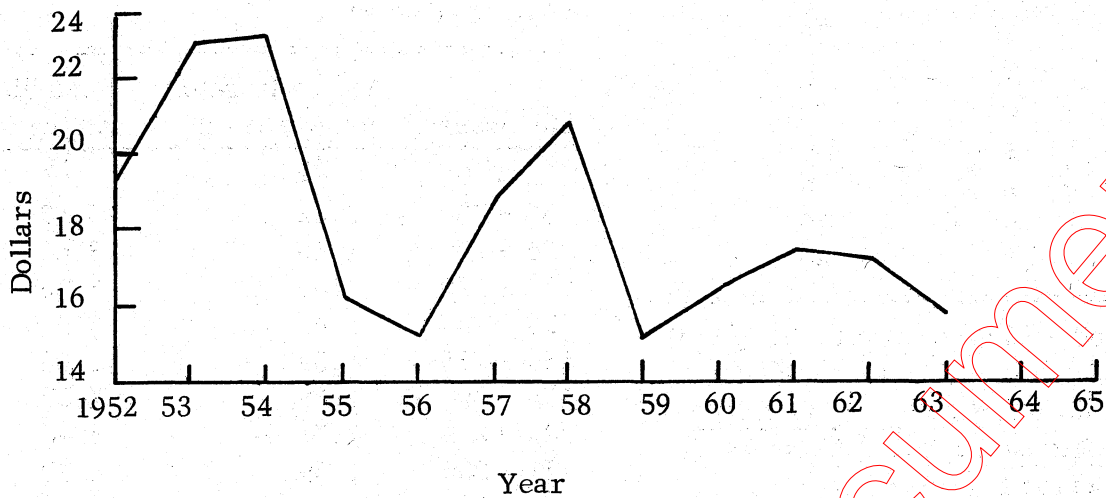
   B. Seasonal price pattern for barrows and gilts and sows.

Figure 2. Average seasonal variation in prices of all barrows and gilts, Indianapolis 1952-55, 1956-59, and 1960-63.

* Assisted by N. S. Hadley, R.E. Schneidau, Department of Agricultural Economics, and Al Marley, County Extension Agent, Washington County.

Table 1. Seasonal price pattern for barrows and gilts at Indianapolis, 1956-60.
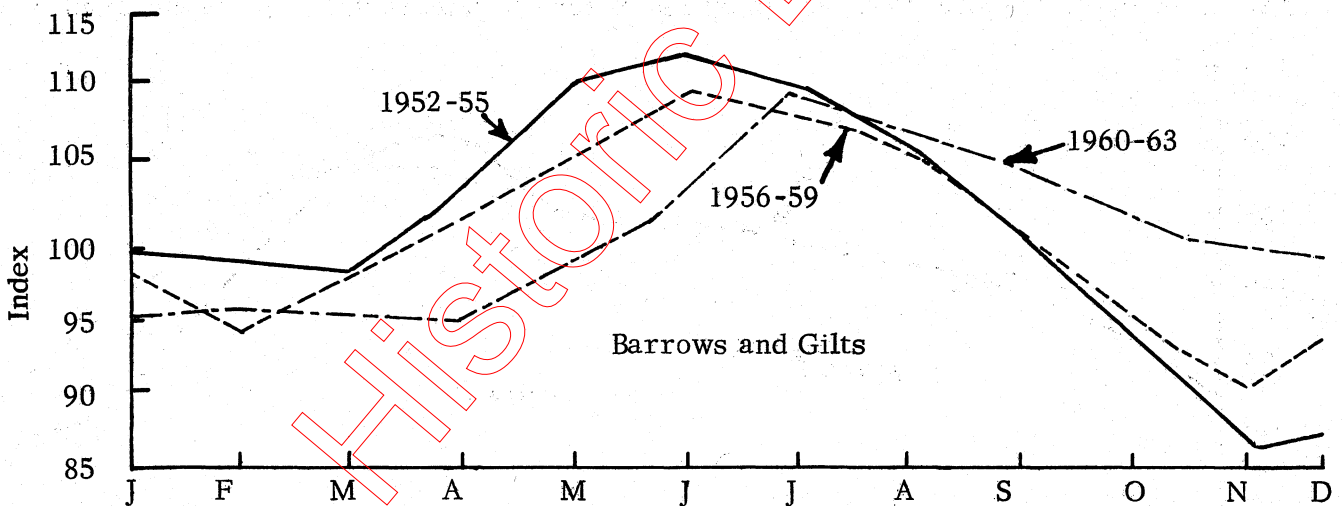
	Price index a/	Index of irregu-larity	% of times actual prices followed seasonal b/
Jan.	96	6	60
Feb.	95	4	40
March	100	4	70
April	102	3	80
May	105	3	90
June	108	2	80
July	108	5	c/
Aug.	106	4	70
Sept.	100	2	90
Oct.	94	4	90
Nov.	91	3	70
Dec.	95	10	40

a/ 1956-60 = 100. b/ 1951-60. c/ Actual price was higher six times and lower four times. Source: Seasonal Variation in Indiana Farm Prices, Purdue AES Research Bulletin 766, September 1963.

II. Feed Requirements per Pound Gain for Hogs of Various Weights.

A. About 5 percent more feed is required to put gains on hogs from 225 pound to 250 pound weights than to put the gains on from 200 to 225 pounds. It also requires about 5 percent more feed to put on the 25 pound gain from 250 pounds to 275 pounds than the preceding 25 pounds (Table 2).

Table 2. Efficiency of gains in relation to weights (drylot). a/

Liveweight	Av. daily gains during period	Feed/lb. gain during period
lb.	lb.	lb.
50 - 75	0.82	3.47
75 - 100	1.13	3.61
100 - 125	1.33	3.76
125 - 150	1.47	3.92
150 - 175	1.59	4.08
175 - 200	1.68	4.27
200 - 225	1.71	4.48
225 - 250	1.69	4.70
250 - 275	1.67	4.96
275 - 300	1.60	5.23

a/ Source: Economics of the Hog Business, Purdue EC-147, p.3.

Figure 3. Average seasonal variation in prices of sows at 8 markets, 1956-59 and 1960-63.
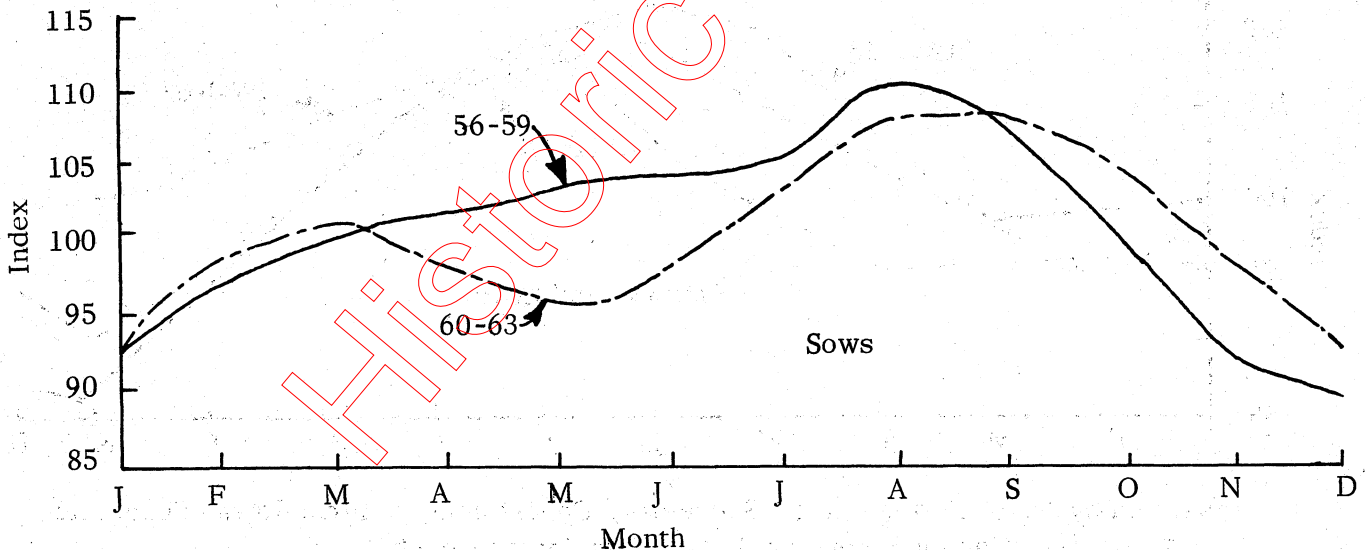
Feed, of course, is not the only cost in carrying hogs to heavier weights. If buildings, equipment, labor and other fixed items of of cost are not used, the total additional costs in feeding hogs to heavier weights might be reduced some.

B. On farms where a breeding herd is kept and the pigs are farrowed and fed out, the pigs must absorb most of the breeding herd costs. As indicated in Table 2, while the feed eaten by the pigs themselves increases for each unit of gain, the more gain the pigs make the lower the breeding herd overhead charge for each unit of gain made by the pigs. The point at which these two variables overtake each other is at a liveweight for the market hogs of about 200-225 pounds (Table 3).

III. Effect of Cyclical and Seasonal Factors on Weights Most Profitable to Market Hogs.

A. In the advancing phase of the hog price cycle, there are periods when it is advantageous to feed market hogs above 200-220 pound weights. This is despite the increased feed costs as hogs are made heavier and the usual market discounts for hogs in the heavier weight brackets.

B. This situation most frequently occurs in the early part of the advancing phase of the hog price cycle when feeding ratios are generally favorable and the price discounts for heavier hogs are relatively small. Furthermore, this situation occurs most frequently during the first half of the year when prices

Table 3. Feed consumption and efficiency of gains of pigs reaching various weights, including feed required by the breeding herd.

Live weight of pig, lb.	Cumulative feed per pig, lb.	Feed per 100 lb. gain made during period lb.	Cumulative total feed per 100 lb. live weight at end of period including feed eaten by breeding herd, lb. a/
35 (weaning weight)	268*	---	766*
50	319	338	638
75	406	347	541
100	496	361	496
125	590	376	472
150	688	392	459
175	790	408	451
200	897	427	448
225	1,009	448	448
250	1,126	470	450
275	1,250	496	455
300	1,381	523	460

a/ The feed shown includes the pig's share of that consumed by the breeding herd. Source: From Technical Bulletins 894 and 917, U.S. Department of Agriculture, Atkinson, L. J., and Klein, J. W., 1945 and 1946. Data based on average of 12 experiments using 813 pigs full-fed balanced rations in dry-lot. These data are also reported in Swine Production, Carroll and Krider, Second Edition, McGraw-Hill, 1956, p.242.

are rising toward their mid-summer seasonal high. In the latter half of the year when prices are declining seasonally, it is seldom advisable to feed to heavier than 200-220 pound weights.

C. No formula can be given for feeding to heavier weights which will always work to the producer's advantage. Each situation must be analyzed carefully and the decision made in the light of current cost-price relationships, cyclical and seasonal price trends and relevant outlook information. Tables 2, 3 and 4 should be helpful in selecting times when it may and when it may not be advisable, profit wise, to feed market hogs above highest price weights usually 200-220 pounds.

IV. Seasonal Variations in Prices of Corn and Soybean Oil Meal.

Figure 4. Seasonal variation in Indiana farm price of corn, 1952-55, 1956-59 and 1960-63.
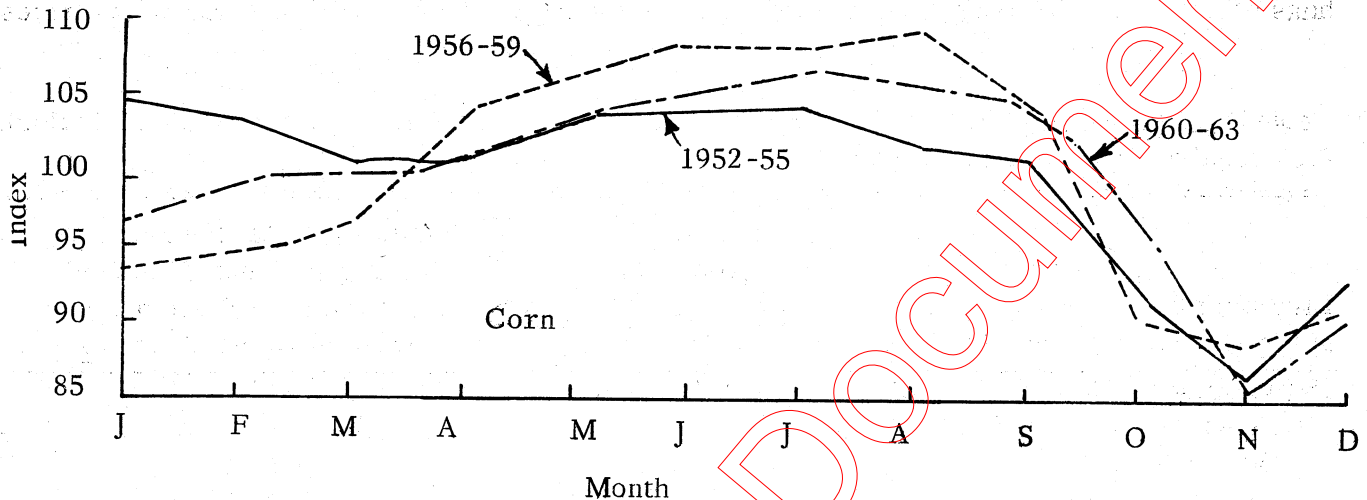

Figure 5. Seasonal variation in prices of soybean oil meal paid by Indiana farmers - 1952-55, 1956-59 and 1960-63.
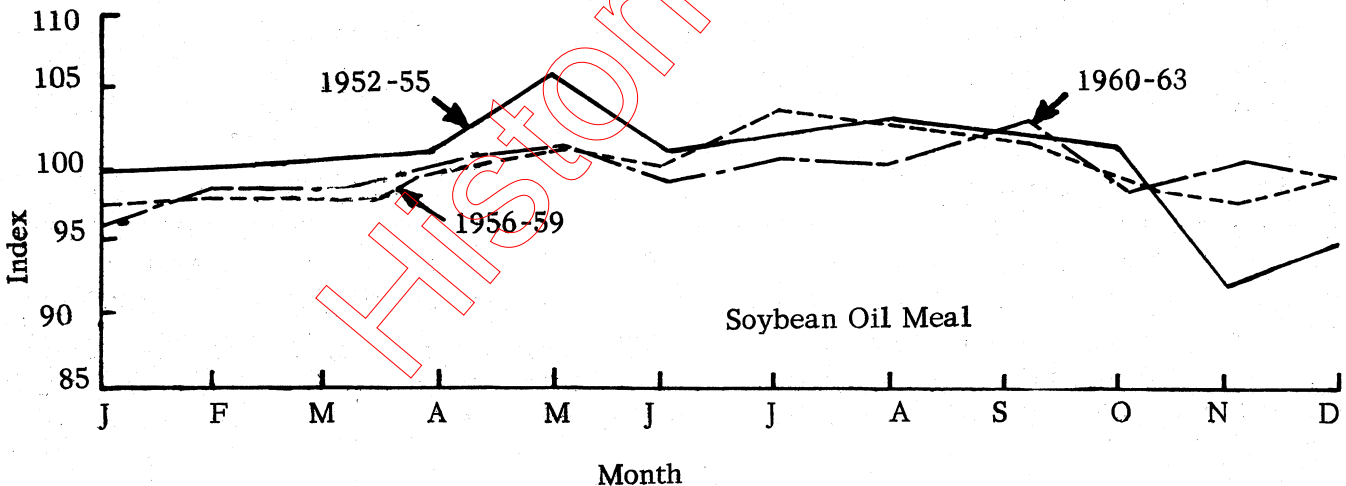
Table 4. Average price of various weights, barrows and gilts, Indianapolis, 1956-1963. a/

Year	Month	200-220 pounds	240-270 pounds	270-300 pounds	Year	Month	200-220 pounds	240-270 pounds	270-300 pounds
1956	Jan.	12.32	11.48	10.79	1959	Jan.	17.36	16.80	16.20
	Feb.	13.05	12.34	11.66		Feb.	15.86	15.36	14.88
	March	13.30	12.81	12.39		March	16.32	15.79	15.27
	April	15.34	14.98	14.54		April	16.72	16.22	15.75
	May	16.62	16.14	15.55		May	17.04	16.26	15.64
	June	17.17	16.64	16.09		June	16.99	16.36	15.56
	July	16.68	16.16	15.59		July	15.04	14.49	13.71
	August	16.91	16.67	16.30		August	14.80	14.71	14.14
	Sept.	16.44	16.34	16.10		Sept.	14.03	13.89	13.45
	Oct.	16.24	16.08	15.84		Oct.	13.39	13.10	12.65
	Nov.	15.33	14.96	14.63		Nov.	13.26	12.78	12.27
	Dec.	17.20	16.70	16.23		Dec.	12.52	11.72	10.92
1957	Jan.	18.35	17.79	17.45	1960	Jan.	12.88	12.27	
	Feb.	17.33	16.92	16.69		Feb.	13.72	13.31	
	March	17.59	17.19	16.82		March	15.96	15.62	
	April	18.36	17.80	17.56		April	16.72	16.40	
	May	18.75	18.13	17.67		May	16.50	15.90	
	June	20.17	19.47	18.96		June	17.28	16.55	
	July	21.26	20.79	20.35		July	18.15	17.58	
	August	21.46	21.12	20.47		August	17.70	17.50	
	Sept.	19.58	19.44	19.13		Sept.	16.55	16.43	
	Oct.	17.69	17.55	17.26		Oct.	18.42	18.15	
	Nov.	17.76	17.40	17.09		Nov.	17.96	17.58	
	Dec.	19.34	18.53	18.04		Dec.	18.01	17.44	
1958	Jan.	19.91	19.12	18.47	1961	Jan.	17.78	17.13	
	Feb.	20.60	20.00	19.54		Feb.	18.61	18.14	
	March	21.60	21.09	20.64		March	17.86	17.50	
	April	21.28	20.62	20.17		April	17.62	17.22	
	May	23.20	22.44	21.75		May	17.25	16.58	
	June	23.65	22.86	22.20		June	17.05	16.22	
	July	23.60	23.28	22.74		July	18.48	18.12	
	August	21.48	21.32	20.99		August	18.51	18.30	
	Sept.	20.80	20.59	20.23		Sept.	18.41	18.32	
	Oct.	19.48	19.11	18.68		Oct.	18.08	17.87	
	Nov.	18.84	18.08	17.54		Nov.	16.64	16.18	
	Dec.	18.77	17.86	17.11		Dec.	17.26	16.92	

Table 4. Continued

Year	Month	200-220 pounds	240-270 pounds	270-300 pounds	Year	Month	200-220 pounds	240-270 pounds	270-300 pounds
1962	Jan.	17.90	17.49		1963	Jan.	16.12	15.38	
	Feb.	17.10	16.48			Feb.	15.57	14.86	
	March	16.72	16.25			March	14.08	13.62	
	April	16.41	15.88			April	14.35	13.89	
	May	16.40	15.80			May	15.30	14.68	
	June	17.26	16.79			June	17.48	16.92	
	July	18.90	18.52			July	18.62	18.30	
	August	18.54	18.42			August	17.73	17.58	
	Sept.	19.28	19.18			Sept.	16.13	16.04	
	Oct.	17.70	17.38			Oct.	16.06	15.88	
	Nov.	17.20	16.70			Nov.	15.41	15.02	
	Dec.	16.90	16.12			Dec.	14.79	14.12	

a/ Underlined figures indicate where the price of hogs heavier than 200-220 lb. approximately one month, and two months later, were higher than for the 200-220 lb. hogs. This does not necessarily mean that these were the only periods when it would have paid to make hogs heavier. Sometimes small reductions in the price of heavier weight hogs could have been sustained.

V. Why Processing and Retail Margins Vary

A. Price level and volume of marketings have an important impact upon farm-retail spread. Processor, wholesaler and retailer costs are largely fixed. Thus, cost per unit of product handled depends largely upon volume.

B. In 1962, the farm-retail spread for pork was 28.1 cents per retail pound (Table 5). In the 10-year period (1953-1963) the farm-retail spread has increased 7 out of 10 years. This has been largely due to rising costs of labor, transportation and other items that make up the spread.

C. Movements in the farm-retail spread during 1962 followed the usual seasonal pattern - narrowing in the first half of the year when marketings decline and widening during the last half of the year when marketings increase. This points out the importance of volume in farm-retail spreads. In the past few years, with a leveling out of marketings during the year, seasonal fluctuation in the spread has been reduced. This reduction has been brought about largely by multiple farrowings and earlier spring farrowings.

D. Some costs that marketing firms have:

1. Cost of goods sold or handled - their raw materials.

2. Labor

3. Taxes and insurance

4. Overhead

5. Interest, investment and risk

6. Losses (perishable products, trim, etc.)

Table 5. Pork: retail price, wholesale value, farm value, farm-retail spread, and farmer's share of retail price, annual 1953-62. a/

Year	Retail price per pound 1/	Whole-sale value 2/	Gross farm value 3/	By-product allow-ance 4/	Net farm value 5/	Farm-retail spread Total	Whole-sale-retail	Farm-whole-sale	Farmer's share
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Percent
1953	63.5	51.1	47.5	6.5	41.0	22.5	12.4	10.1	65
1954	64.8	51.2	48.4	7.4	41.0	23.8	13.6	10.2	63
1955	54.8	41.0	33.9	4.7	29.2	25.6	13.8	11.8	53
1956	52.1	38.6	31.8	4.6	27.2	24.9	13.5	11.4	52
1957	60.2	45.2	38.9	5.7	33.2	27.0	15.0	12.0	55
1958	64.8	49.3	43.2	6.3	36.9	27.9	15.5	12.4	57
1959	57.1	39.8	31.3	4.0	27.3	29.8	17.3	12.5	48
1960	56.7	41.6	33.9	4.5	29.4	27.3	15.1	12.2	52
1961	59.2	42.4	36.5	5.0	31.5	27.7	16.8	10.9	53
1962 6/	59.5	42.8	35.8	4.4	31.4	28.1	16.7	11.4	53

a/ Source: Marketing and Transportation Information, USDA, February 1963, p. 11.
1/ Estimated weighted average price of retail cuts.
2/ Wholesale value of quantity of carcass equivalent to 1 lb. of retail cuts.
3/ Payment to farmer for quantity of live animal equivalent to 1 lb. retail cuts.
4/ Portion of gross farm value attributed to edible and inedible byproduct.
5/ Gross farm value minus byproduct allowance.
6/ Preliminary.

VI. Variation in Value Among Slaughter Hogs

A. Accurate evaluation of live hogs is difficult. Federal grades have been the major means of grading live hogs for several years. It has been found that a sizeable variation in value may exist between hogs of the same grade. Several instances have been found where U. S. Number 2 hogs have actually "yielded" or "cut-out" more pounds of lean cuts than U. S. Number 1 hogs. Other studies have shown slaughter hogs vary considerably in value because of differences in weight, dressing percent, and the relative proportion of the four lean cuts.

One study showed a variation in dressing percentage from 66 to 78 percent among individual hogs and a range from 37 to 57 percent for percent lean cuts with differences as great as 18 percent among hogs of the same weight.

B. The basic value of a live slaughter hog is the value of the pork products, such as hams, loins, picnic, etc., contained in the carcass. If it were possible to measure accurately each of these products from each individual hog, it would be less difficult to arrive at the market value of a particular animal. Table 6 illustrates the variation in cut-out value between a Number 1 and a Number 2 hog.

Table 6. Carcass cutting and value yields for U.S. No. 1 and U.S. No. 2 grades of hogs at 220 pounds live-weight and wholesale prices at Chicago, October 1957 to January 1958. a/

Wholesale cuts	Average price	U.S. No. 1		U.S. No. 2	
		Percentage yield carcass basis	Value	Percentage yield carcass basis	Value
	$	%	$	%	$
Skinned ham 12-14 lb.	44.0	19.4	8.54	18.2	8.01
Loins, 10-12 lb.	47.9	14.7	7.04	13.9	6.66
Picnics, 6-8 lb.	25.5	9.9	2.25	9.4	2.40
Boston butts	38.0	8.0	3.04	7.5	2.85
Bellies, square cut, 10-12 lb.	31.9	15.0	4.79	15.6	4.97
Pork trim, 50 percent lean	21.9	5.0	1.10	4.5	.99
Jowl butts	12.9	3.5	.45	3.8	.49
Spareribs, 3 lb. down	38.5	2.5	.96	2.3	.88
Neck bones	11.8	2.0	.23	1.8	.21
Feet	7.4	3.1	.23	2.8	.21
Tails	12.0	0.2	.02	.2	.02
Fat for lard	9.4	16.7	1.57	20.0	1.88
Value per 100 pounds carcass weight			30.49		29.57
Dressing percentage		67.5		68.0	
Value per 100 pounds live-weight			20.58		20.11
Value per 220 pound hog			45.28		44.24

a/ Source of data: Derived from Marketing Meat-Type Hogs, USDA Marketing Research Report 227, April 1958.

VII. Selecting a Livestock Market

A. Certainly the quoted price is important when marketing hogs; however, there are certain costs associated with marketing livestock. Some of these costs are difficult to place a dollar and cents figure on in arriving at the net price, but should be considered when deciding upon a particular market. Some of these major marketing costs that need to be taken into account are shown in Table 7.

B. Prices for slaughter hogs are going to vary between markets. Therefore, it is generally a good practice to obtain price quotations from several markets. Price quotations as to weight and sometimes grade can be obtained by radio, T.V., newspaper and telephone.

C. Transportation charges can be important. An example of rates charges for hauling livestock in one area of Indiana in 1963 are shown in Table 8.

Table 7. Where should I market my livestock, assuming I have the following marketing alternatives?

Price and cost factors	Markets		
	Terminal	Local	Direct
Quoted price per cwt. (estimated)	_____	_____	_____
Transportation charges (miles)	( ) _____	( ) _____	( ) _____
Estimated shrinkage (percent) cost	( ) _____	( ) _____	( ) _____
Marketing charges (per head)			
Yardage	( ) _____	_____	_____
Commission	( ) _____	_____	_____
Feed	( ) _____	_____	_____
Total marketing costs (per cwt.)	_____	_____	_____
Net price to producer (per cwt.)	_____	_____	_____

Table 8. Trucking rates in one area of Indiana, 1963.

	Straight truck
Under 10 miles	10¢/cwt. (min. $5/load)
10 - 24 miles	15¢/cwt.
25 - 39 miles	20¢/cwt.
40 - 59 miles	25¢/cwt.
60 - 89 miles	30¢/cwt.
90 - 120 miles	35¢/cwt.

Semi-Trailer a/

60¢ per head or $2.50 per hour, whichever is higher.

a/ Truck rates and method of charging vary among firms. (Don't overlook the cost of hauling livestock in your own truck. Average estimates of this cost for both labor and, at least, operating expenses should be included).

Table 9. Relationship of length of haul to shrinkage of hogs, 1,132 lots--38,303 hogs.

Miles hauled	Shrinkage	
	Not fed at market	Fed at market
0 - 5	1.06	*
6 - 15	1.12	1.03
16 - 25	1.39	1.24
26 - 35	1.75	1.51
36 - 45	2.06	1.79
46 - 55	2.50	1.99
56 - 65	2.68	2.03
66 - 75	2.76	2.08
76 - 85	*	2.14
86 - 95	*	2.16

* Sufficient data not available.
Source: Hog Shrinkage--Farm to Market, Wiley, J. R., Cox, C. B., Economic and Marketing Information for Indiana Farmers, Agricultural Economics Department, Purdue University, February 1955.

D. Weight loss due to shrinkage can be considerable when hauling hogs. (Table 9). A 2 percent shrinkage of hogs worth $15.00 per hundred weight and weighing 200 pounds amounts to $.60 per head. Thus, shrinkage may have an important bearing on one's decision of where to market.

E. Marketing at terminal markets may involve various costs for the associated services provided (Table 10). These costs should be considered when making a decision of where to market.

Feeding Option - Feeding livestock prior to sale is optional on a terminal market. Whether or not to feed will depend upon the individual situation. Feeding is ordinarily done when livestock are either (1) shipped so as to arrive at market the evening prior to selling or (2) shipped 40 - 50 miles or more in transit an equivalent time or longer.

Table 10. Marketing charges at Indiana terminal livestock markets, January 1962.

	Indianapolis	Evansville	Muncie
Yardage (per head)			
Cattle	$1.15	$ .95	$ .80
Hogs	.44	.40	.30
Sales commission (per head)			
Cattle	$1.20 (1.40)[a]	$1.05 (1.25)[a]	1st 10 head = $1.00
(not bulls			2nd 10 head = $ .90
or calves)			3rd 10 head = $ .80
Hogs	.34 ($ .75)[a]	.35 ($ .60)[a]	$ .25

[a] One-head consignment.

Cost of feeding is estimated as follows:

Price of corn/bushel
  $2.00

Number of head of slaughter hogs
  10 head/bushel

F. Other factors to consider in selecting a market which are less tangible, but neverless important, are selecting a market in which you have confidence. Convenience at certain times of the year may be of importance. Also, the grade or quality and type of livestock being marketed may influence market selection. When selling cull breeding stock, market opportunities are somewhat different than when selling slaughter animals. The availability of buyers for these classes of livestock should be considered. It may, also, be possible through volume or established quality to obtain premiums at certain markets. This should be considered in the initial price quotation received.

VIII. Possibilities of Producing and Marketing Improved Pork Products.

A. Some consumers are willing to pay higher prices for "meat-type pork". This has been documented in various studies 1/. In an Indiana study in which "meat-type pork" - Boston butts, loins, picnics, hams and bacon - were priced two and six cents per pound above regular pork, about 45% of all these products sold at both price differentials was "meat-type". Consumer reaction to "meat-type" Boston butts was the most favorable percentagewise of all cuts in the study. It was the only cut in which "meat-type" pork actually outsold regular pork at both two and six cents higher price. Percentagewise, movement of "meat-type" loins was the lowest of all cuts studied. This may have been the result of an exceptionally close trim given to the retail cuts of both the "meat-type" and regular products.

Taking into consideration (a) extra price premium, consumers would be willing to pay for primal cuts of "meat-type" hogs, (b) estimated extra cost for processing "meat-type" hogs and pork as a differential product, (c) cut-out value of "meat-type" hogs compared to regular hogs, a Purdue study shows that about $1.60 per cwt. would be left for the farmer, the packer and the retailer. This would apply to about 45% of the total hogs produced if this percentage were "meat-type", and assuming that the Purdue study was conducted with a representative sample of consumers. 2/ Further assuming that the increased returns were to be divided equally between producer, processor and retailer, the gain would be about 50 cents per hundred for each.

The foregoing analysis does not deal with the possible consequences to the demand for pork if those preferring "meat-type" are unable to obtain it. Would they turn to some other type of meat? Would they purchase so called "regular pork"? The answer is not known.

B. Questions have been raised concerning the possibility of producing and merchandising high quality hogs and pork products. As previously pointed out, there are certain advantages which may accrue to this kind of program. Producing more hogs in the upper grades (as reflected in increased cut-out value) will provide additional pounds of high value pork products to sell. Also, if a quality factor is present and can be differentiated at the retail level, some additional returns may result.

1/ "Consumer Reaction to Price Differentials for Meat-Type Pork," Economic and Marketing Information for Indiana Farmers, October 30, 1959.

2/ Studies by Purdue University and the U.S.D.A. indicate that in excess of 30 percent of all hogs produced are "meat-type."

C. There are problems associated with instituting this kind of program. Consideration should be given to the following:

1. Obtaining and maintaining high quality hogs and convincing market outlets that the produce is of superior quality.

2. Producing in sufficient volume to have a bargaining position.

3. Having sufficient control over production to guarantee a continuous supply of high quality products.

To obtain the additional returns from retailing high quality pork, the following requirements are also necessary:

4. Maintaining product differentiation throughout the processing and retailing operations.

5. Providing consumers the opportunity to reflect the quality differences in prices they pay at the retail counter.

D. Some of these tasks can be accomplished through individual producer efforts. Some may be accomplished by individual processing firms and retail concerns. However, in order to carry out a fully effective program of producing and marketing high quality differentiated pork products, the joint effort of all parties concerned in the production and marketing processes is required. This must be based on (a) perfecting a grading system by which hogs can be accurately differentiated as to cut-out value and quality and (b) a market news service that will reflect accurate pricing differentials based on these standards.

Several alternatives exist for bringing into being the organizational and operational structure necessary to accomplish such an objective, including:

(1) Making a strong and effective educational effort with producers, processors and distributors within the existing structural and organizational pattern of production, processing and retailing with the objective or pricing live hogs and pork products on a strictly merit basis.

(2) Setting up contractual arrangements between producers, processors and retailers which provides for price differentiation based on quality at the farm level and throughout the marketing system.

(3) Achieving ownership and/or control of production, processing and marketing facilities by a single firm or organization to bring about the production and marketing of hogs and pork products on a merit basis.

(4) Obtaining legislative action that sets up and enforces rigid quality specifications on all the parties concerned and establishes price differentials based on quality.

(5) Some combination of the above.