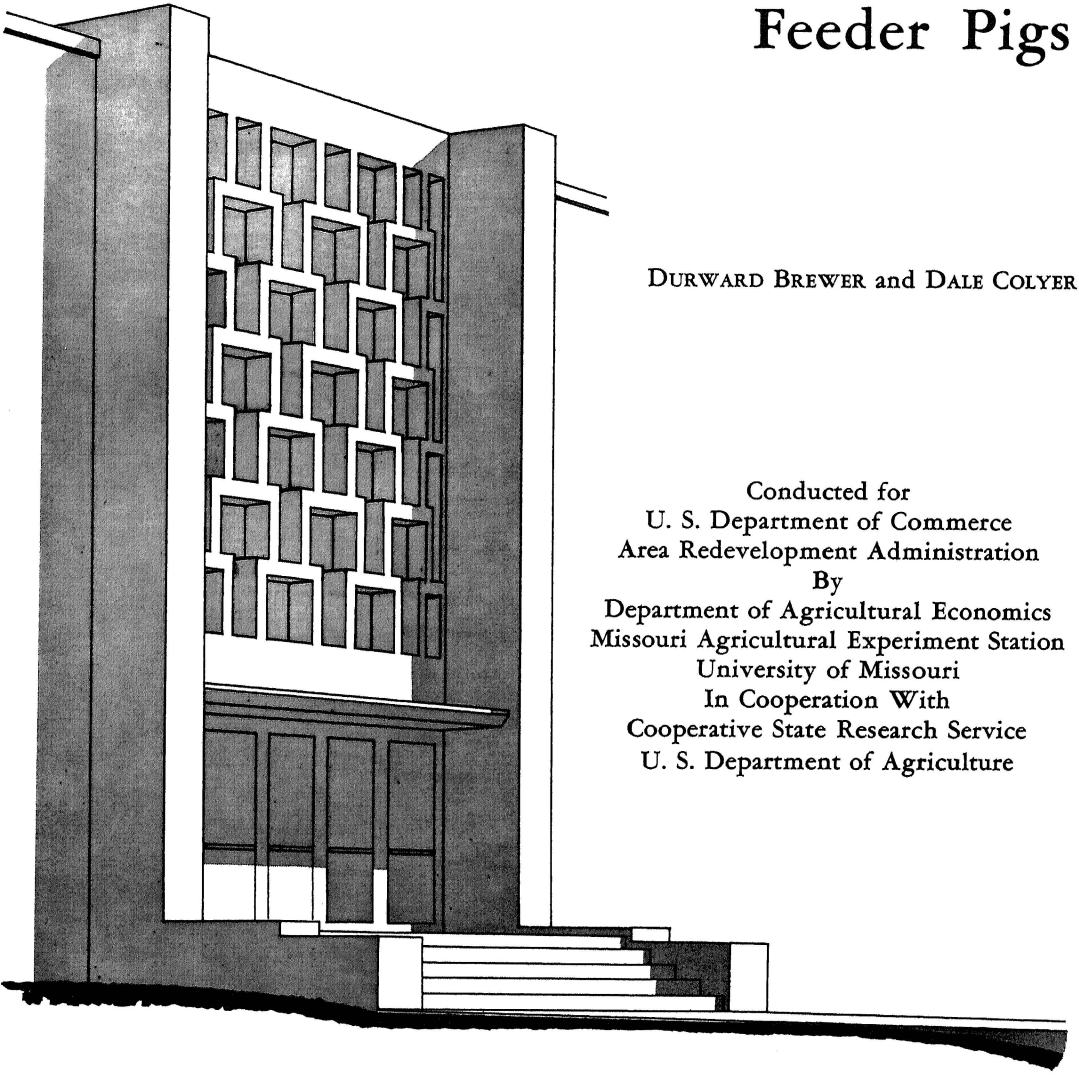
Factors Affecting Demand for Missouri-Produced Feeder Pigs



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SUMMARY

Demand for a feeder pig is simply a demand for a means to achieve a specific end—the sale of a profit making market hog—at X time period, which is some future time after purchase. Information relative to the expected end result must be sufficient to give reliability. If not, decisions are made by purchasers based primarily on an average of their past experiences relative to the performance of feeder pigs and the end product achieved.

Demand for pork will probably increase less rapidly than population in the coming years. Present trends point to the consumption of larger total quantities of pork but also to lower per capita consumption, which implies that expansion of hog production can have relatively little effect on the demand for feeder pigs.

Demand, however, may be affected considerably by shifts in the structure of the hog producing sector of agriculture. A major trend in agriculture is toward greater specialization. One such trend is toward separation of the pig raising and feeding phases of producing pork, the primary cause being the reduction in the labor required per pig on the farm where pigs are fed. This permits a larger hog feeding enterprise or the expansion of other activities, such as a larger acreage of crops. For feeder pig producers it permits the operation of a profitable hog enterprise where large quantities of grain are not available to feed out hogs. This specialization is regional as well as by individual farms with feeding more concentrated in the corn belt and pig production in the fringe areas.

Indications, from the limited data available, are that by 1970 the use of purchased feeder pigs in the North Central Region may be double the 1956 level of 7 million head. Historically, the supply of feeder pigs has come from areas close to where the pigs were fed. However, data collected in this study lend support to the contention that more of the feeder pigs used currently are from areas and states other than the ones where they are fed out than was so in the past.

Missouri produces feeder pigs and also feeds out large numbers of hogs. The majority of hogs are fed in the northern half of the state where a small surplus of feeder pigs also is produced. The major surplus feeder pig production is in the southern half of the state. Areas such as this should have a comparative advantage in the production of feeder pigs *vis-a-vis* those areas with better soils and more off-farm employment opportunities.

Missouri farmers accounted for nearly 16 percent of the feeder pigs sold by farmers in the North Central States in 1956 and produced 14 percent of the pigs purchased by farmers in the same states. By increasing their share of the market, Missouri producers can increase their output considerably. However, to accomplish this objective, improvements in both production and marketing techniques will be necessary.

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INTRODUCTION

The production and marketing of feeder pigs is not a new development in Missouri's agricultural industry. It has been important in many sections of the state as either the major farm enterprise or a significant part integrated into the farm production unit. Most of the surplus feeder pig production is concentrated in the Ozark area which is characterized by low farm incomes.

In seeking ways to increase income in the area the increased specialization in pork production has led to the hypothesis that increased feeder pig production will accomplish part of the objective. The area has an abundance of underemployed labor and a large quantity of land not adapted to modern techniques of crop production; at the same time, the area has certain physical features which make it well suited for the production of feeder pigs. However, if pig production is to be increased substantially, the problem of determining and improving demand for Missouri-produced feeder pigs must be confronted.

This study was undertaken by the Missouri Agricultural Experiment Station to develop information about feeder pig markets. The objectives of the study which are covered in this report are: (1) To examine factors affecting demand for feeder pigs and their relative importance. (2) To determine the more important reasons why farmers purchase feeder pigs rather than farrowing and raising their own.

SOURCES OF PRIMARY DATA

Few data are available concerning the relative importance of purchased feeder pig use in contrast to a complete production and finishing system. Some historical background is provided by two marketing studies—one at South Dakota for 1940 and the second for the North Central Region in 1956-57—and secondary data from various sources also are useful. To obtain more current primary data, however, surveys of hog finishers and pig producers were conducted.

Included in the surveys were random samples of hog finishers in three major producing areas—two in Iowa and one in Illinois. The surveys obtained information on the importance of specialization in hog operations for 1963-64 and intended changes in the use of feeder pigs during the following years. In addition,

a mail questionnaire was sent to known out-of-state purchasers of Missouri-produced pigs and personal interviews were obtained from a sample of those purchasers.

These surveys were supplemented by questionnaires obtained from feeder pig producers in southern Missouri in an effort to characterize present and potential suppliers of feeder pigs in that area. The data upon which this report is based were obtained from the three groups of surveyed farms.

DEMAND FOR FEEDER PIGS

The purchaser of feeder pigs is buying an input for his business: thus, to him, feeder pigs are a factor of production. The demand for factors of production is derived from the demand for the final product—in this case pork. The aggregative demand for pork is assumed to be relatively stable with decreases in per capita consumption being offset by increased population. The supply of pork fluctuates in a cyclical pattern, however, although for a particular year it is relatively fixed by previous farrowing plans. (Quantity can be varied some by feeding hogs to different weights.) Thus, when the total pork supply is low hog prices generally will be higher and vice versa. This is illustrated in Figure 1 where the intersections of the fixed demand curve with varying pork supply curves indicate the determination of pork prices.

If farmers base their decisions to purchase feeder pigs on market (slaughter) hog prices, more feeder pigs will be purchased when such prices are high. Actually, since the feeder pigs will be sold for slaughter about three to four months after purchase, the market price expected at that time would be the appropriate price to consider when deciding how many pigs to buy.

The individual farmer sees the price of feeder pigs as constant regardless of the quantity he purchases. He finds the optimal quantity to purchase varies with the market price of hogs—the optimal quantity being that which maximizes his profits. The derived demand schedule for feeder pigs shown in Figure 2 illustrates the expected relationship between pork prices and demand for feeder pigs.

The price of feeder pigs, however, is determined by relative supply and demand factors for pigs at a certain point in time with the maximum price farmers are willing to pay based on their expected returns. Farmers who sell feeder pigs must take what the market offers unless they have facilities and are willing to feed the pigs out to slaughter weights. If, in the aggregate, they have produced a large number of pigs they may be able to sell them only at prices lower than they expected to receive.

The basic supply of feeder pigs is determined when the farmers start their herds. That is, the supply of feeder pigs coming on the market in any one production period is the result of decisions made by producers in previous periods. (There are some other influences which are outside the control of the individual farmer.) From this point of view price has little effect on supplies in the short

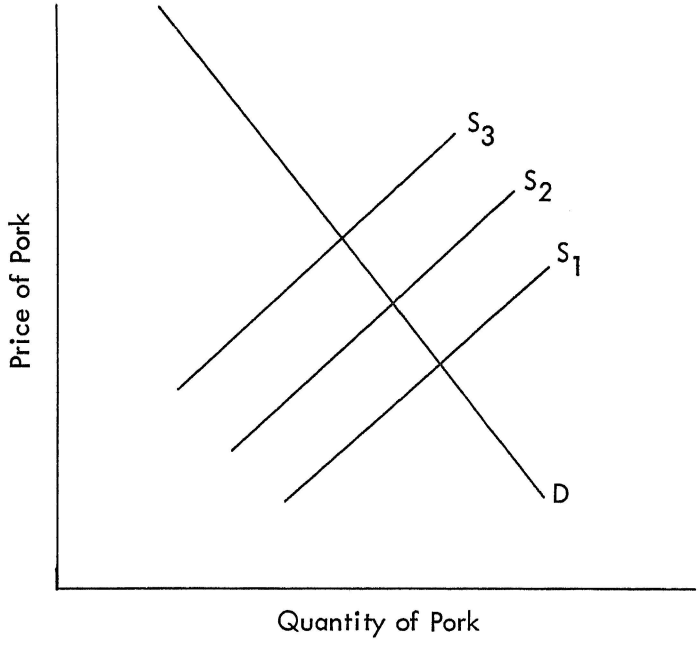

Fig. 1—Illustration of supply and demand relationships for pork.

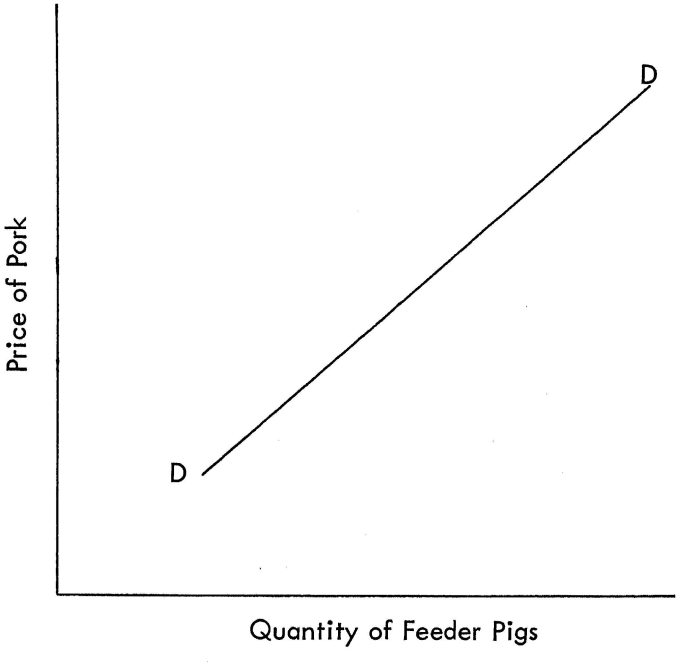

Fig. 2—Derived demand for feeder pigs.

run. This is not to say that adjustment in the supply of feeder pigs in response to price may not take place as late as the time to start finishing animals for market. Pigs may be withheld from open market as the result of expectations of feeder pig producers relative to future demand for pork, thus finishing out larger numbers of pigs to slaughter weights. They thereby reduce the market supply of feeder pigs while the slaughter volume and pork consumption will remain steady or increase.

Factors Influencing Purchase Decisions

Swine finishers decisions relative to the number of feeder pigs to purchase at any one time depend upon a number of variables. The most important single determinant of the quantity of pigs to be bought at any one time, as cited by feeder pig purchasers surveyed in 1964, was the availability of facilities, including land. It appears that shelter, feed, water, etc. were not the only facilities considered by finishers; they also considered the seasonal availability and multiple use of land. About 38 percent of farmers purchasing Missouri-produced feeder pigs indicated that the availability of facilities in their production unit was normally the limiting factor. Time and labor availability were of substantial importance in their decision making relative to the number of pigs to purchase, although they were seldom given as the only reasons.

Feed availability and current costs appeared to have little influence on number of pigs purchased by finishers. Only slightly more than 3 percent of purchasers of feeder pigs indicated the current price of corn was a determining factor in the price they were willing to pay for feeder pigs. The current and expected future prices of feed grains also seemed to have little influence on the price that producers were willing to pay for feeder pigs. As long as the expectation of covering variable costs existed, farmers indicated they were not overly concerned with feed grain prices. Perhaps one reason for this was the utilization of surplus or low grade corn and otherwise unemployed labor, plus a long run expectation of greater profits by feeding hogs rather than by trying to outguess the market.

Buyers of feeder pigs indicated that they usually arrived at the price they were willing to pay for pigs through their judgment of the present and estimated future prices of slaughter hogs. More than 36 percent suggested that they primarily used the prices and marketings of slaughter hogs in determining the the price to be paid for feeder pigs. Twenty-eight percent watched the current prices being paid for feeder pigs and based buying decisions on fluctuation of going prices. The distribution of prices paid for feeder pigs during 1964 (Figure 3) did not indicate that feeder pig prices followed slaughter hog prices very closely. Prices were relatively stable during the year with the lowest prices being paid during the early summer months.

The demand for Missouri feeder pigs did not seem to have a strong seasonal pattern (Figure 4). Alhough farmers purchased most of their pigs during January through June, the reason seemed to be one of convenience; such purchases

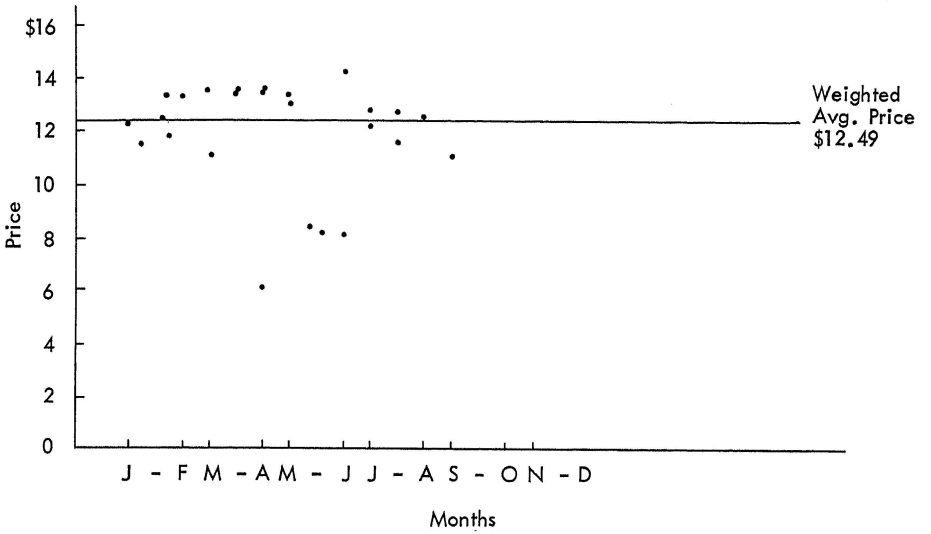

Fig. 3—Weighted average price reported paid for feeder pigs, 50 pounds or less, 1964.
(Source: Survey of Known Purchasers of Missouri Feeder Pigs.)

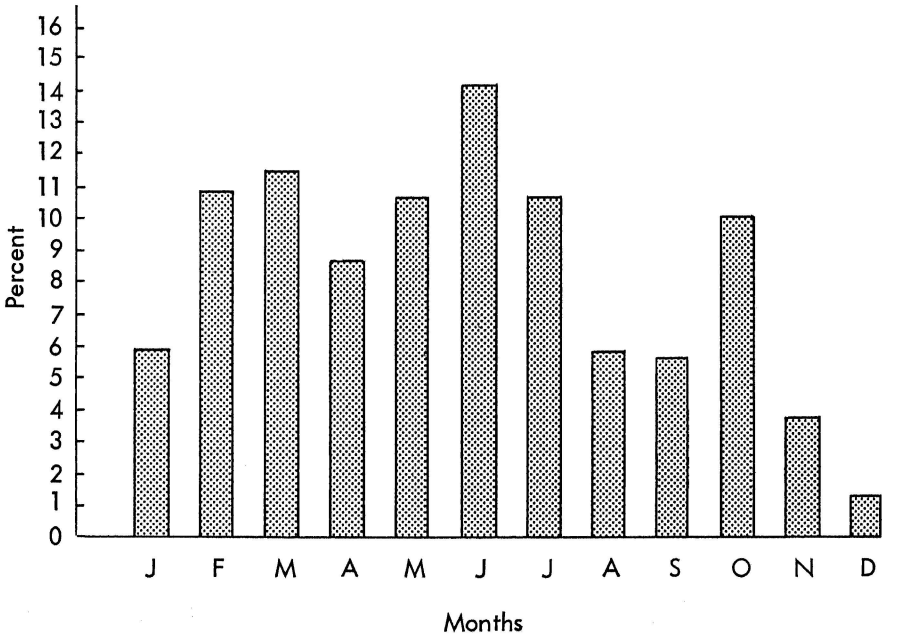

Fig. 4—Percentage of feeder pigs purchased by months, by buyers of Missouri pigs.
(Source: Survey of Known Out-of-State Purchasers of Missouri Feeder Pigs.)

worked into the farm unit plan better than other seasonal purchasing patterns. More than 55 percent of the farmers indicated that they bought pigs as they needed them in their production enterprise, while 32 percent indicated they timed their purchase with the availability of pigs or specific market operations. The major factor determining the time of purchases of Missouri-produced pigs appeared to be the farrowing dates used by feeder pig producers.

Individual Producer Demand

The existing demand structure for feeder pigs as indicated by purchasers revealed that feeders did not respond to prices in the manner of optimizing theory. It appeared, rather, that feeder pig demand by an individual farmer was relatively unresponsive to price over wide ranges. The demand curve for an individual feeder pig buyer might be as appears in Figure 5, which indicates that below a certain price no pigs would be purchased and above that price a relatively fixed quantity would be purchased.

The fixity of the assets used for feeding pigs perhaps explains part of the phenomenon. Farmers buy pigs to the extent their facilities permit if they buy at

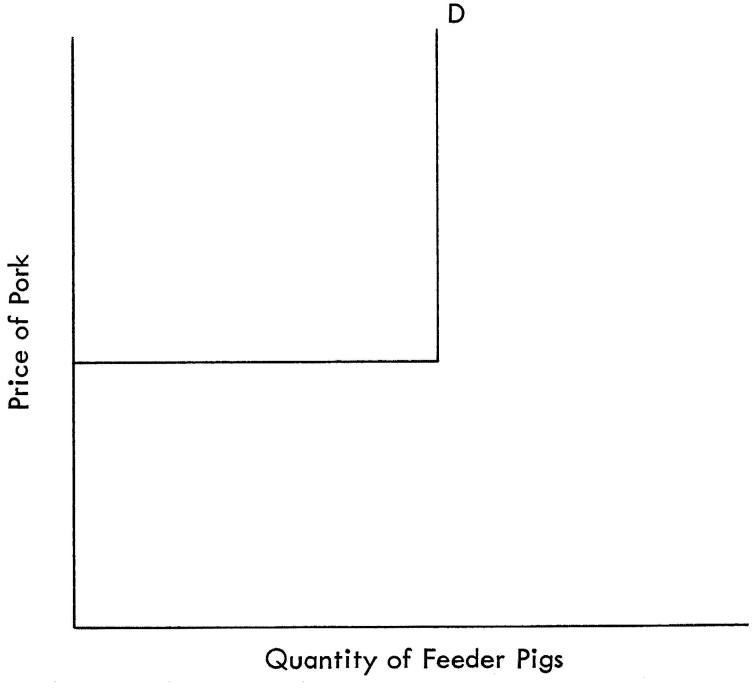

Fig. 5—Farmer demand for feeder pigs as related to pork prices.

all. The main inputs in feeding pigs are the purchased pigs, feed, labor, and capital in the form of equipment and facilities. Except for the pigs and feed supplements, all of these are relatively fixed on an individual farm. Therefore, as long as the farmer can cover his actual cash costs and obtain some additional return he will feed pigs, if no more-profitable alternatives are known.

POTENTIAL DEMAND FOR FEEDER PIGS

The demand for feeder pigs can be increased from two sources: (1) an increase in the total quantity of pork produced or (2) a shift in the ratio of pigs farrowed and finished on the same farm versus handling those operations on separate units. The former does not seem to possess much potential because the total demand for pork is relatively stable. Therefore, it appears that important increases in the use of feeder pigs will take place only if there are structural shifts in the hog production industry of the latter type. Examination of conditions and trends in raising and finishing hogs may reveal the potential of that source for increased demand.

Farrowing Versus Purchasing

Farmers give various reasons for preferring a particular method of obtaining their feeder pigs.[1] Those who farrow their own pigs feel that it is more profitable, results in fewer disease problems, utilizes existing facilities, or results in higher quality pigs, or they simply prefer to farrow their own. Some also indicated that purchasing pigs required too much capital and resulted in unwarranted risks. The reason given most often was that farrowing was more profitable than purchasing.

The most disliked feature of farrowing their own pigs was the large labor requirement. Those who bought feeder pigs indicated that they did so because it required less work, was more profitable, they lacked farrowing facilities, had disease problems in breeding herds, or because they could be assured of the quantity and quality of pigs they wanted. Others purchased pigs only under special circumstances such as when they had an excess feed supply or when heavy farrowing losses reduced their own supplies of pigs. The most frequent reasons for purchasing feeder pigs had to do with less labor being required when purchased pigs were used and the fact that the work required was easier than that associated with farrowing. This procedure also results in a more even distribution of labor since the large time requirements for farrowing are eliminated.

Thus, economies due to increased scale or from specialization may be possible by separating the pig raising and feeding parts of the operation.

[1]Data in this and some later sections are based on the sample survey of 346 farmers in three areas of Iowa and Illinois. The survey included Franklin, Wright, Hamilton, Hardin, Buena Vista, Cherokee, and Ida Counties in Iowa plus Bureau and Henry Counties in Illinois.

Whether farmers purchase pigs or raise their feeders they are confronted with a number of problems. Those faced by the farmer who farrows his own pigs are commonly known and solutions to these generally rest with the individual producer; whereas, the problems confronting the hog finisher who purchases pigs from the open feeder pig market are not always so readily recognized, nor can they be solved in all instances by the farmer changing his source of supply.

A major problem revealed by the purchasers of feeder pigs was disease. This is illustrated in Figure 6 by the relative importance given to disease among causes of problems. More than 26 percent of the finishers who purchased pigs said disease was their major problem. The reason disease problems were encountered by the purchaser of pigs appeared to be the lack of sufficient information on the

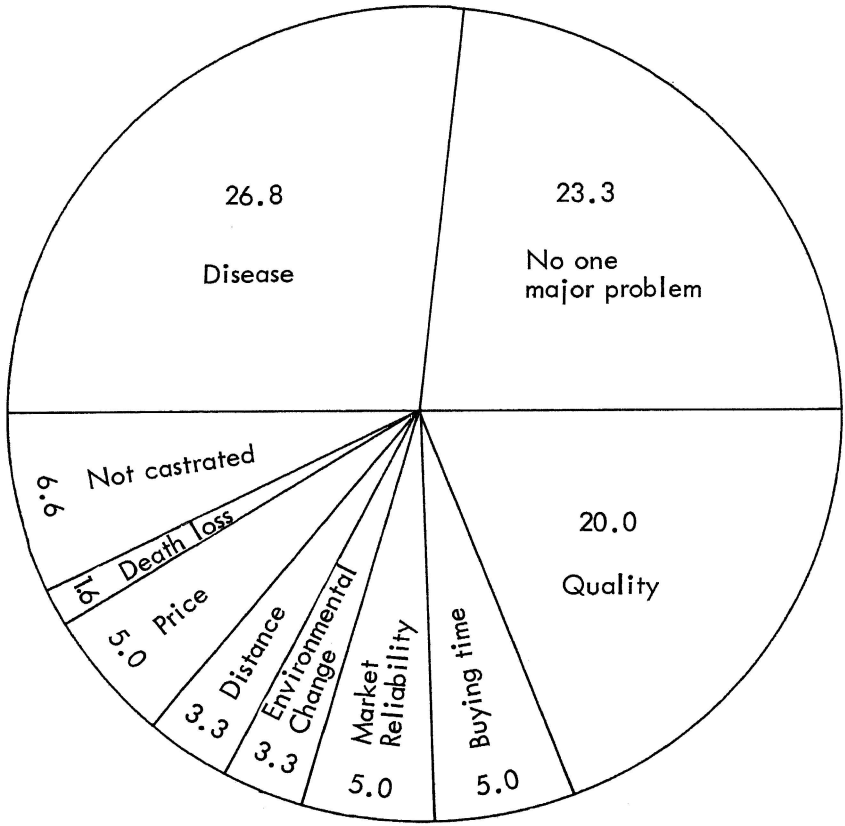

Fig. 6—Comparative importance of problems encountered by buyers of Missouri feeder pigs.
(Source: Survey of known purchases of Missouri feeder pigs.)

environment and management of the breeding herd and pigs. The lack of adequate information on the part of the buyer was not always a result of it not being available or breeders' reluctance in furnishing it, but because of a breakdown in communications in the present market structure. The problem is difficult for industry to solve as a result of the heterogenity of production common to the feeder pig industry.

To meet the volume requirements demanded by the finisher, pooling of feeder pigs becomes a necessity in many instances. Assemblage of pigs by market agencies or common pooling of feeder pigs on a voluntary basis by producers to insure sufficient volume compounds quality, identification, and disease problems.

Buyers' Quality Preferences

Buyers of feeder pigs attempt to obtain what the market designates as the top or medium grades at the time of their purchase, avoiding pigs which can not be classed in the top two categories. However, most buyers observed that these top classifications varied substantially from season to season, year to year, and market to market. Approximately 38 percent of the buyers contacted said they purchased only top quality pigs, while 60 percent purchased primarily what was referred to as medium. Out-of-state buyers of Missouri pigs purchasing the two top quality classifications of pigs accounted for over 90 percent of the feeder pigs shipped for the years 1962 through 1964.

Identity

Since identity of the feeder pig is important to the price-quality relationship, maintaining the identity through the marketing channel is important. Quality influences demand for pigs of a particular region and can be important in the total demand structure since a finisher's early experience with purchased pigs can affect his production patterns for many years. It is important that these experiences be favorable.

The importance attached by both seller and buyer in maintaining identification of pigs from a producer of quality stock is a demand thrust upon the traditionally organized markets in the feeder pig industry. The slowness and reluctance of the present markets to adjust to meet this need has lead to alternative methods of marketing and to the establishment of new markets. Recognition of the quality and producer identification problems in the feeder pig industry and their effects upon demand and price of feeder pigs must be accepted by market agency personnel.

Lot Size

Pooling of feeder pigs by producers is gaining importance. The trends in the swine industry imply that production will continue to move into fewer but larger units, thus indicating that larger lots of uniform feeder pigs will be demanded by

individual buyers. These larger hog finishing operations are likely to be highly concerned with the feed conversion rate, cost per pound of gain, and rate of gain as methods to lower production costs and are likely to be concerned with uniformity, cutout yields, and the ratio of lean to fat.

Known buyers of Missouri feeder pigs located in three midwestern states made their purchases of pigs in lots of 100 or more head. Fifty-six percent of the feeder pigs purchased by the sample out-of-state buyers were in lots of 150 head or more; 87.6 percent were in lots of 100 head or more. Indications were that lots of less than 100 head caused considerable difficulty and extra expense to the buyer through assemblage and transportation, along with the quality factors of size, weight, age, color, and breed. Buyers looked for and were willing to pay relatively more for feeder pigs in larger lots when pigs were sorted and/or produced with the quality factors mentioned above. These factors mean that small and odd lots are in a position of considerable disadvantage in marketing.

Trends in the Use of Purchased Feeder Pigs

No statistical series on direct use of purchased feeder pigs are kept but data available indicate that increases have occurred recently. Feeder pig imports into the major hog producing states have been increasing (Table 1 and Fig. 7).[2] Between 1950 and 1960 imports into Indiana increased to 24 times their 1950 levels; in Ohio they increased 12 times; Iowa nine times, and in Illinois 2.5 times. The 1950 base was relatively small but the changes were significant since imports to all the major hog feeding states increased and these amounted to substantial quantities in many states. Imports into Iowa, the largest hog feeding state, were over one million head in 1960.

There are very few statistics or general studies available to indicate the importance of purchased feeder pigs relative to those raised on the farm where they are fed. The Agricultural Experiment Stations of the North Central Region conducted a study of livestock marketing which provides information on the volume of feeder pigs purchased and sold in the region in 1956.[3] That study estimated that out of 71.5 million head of hogs sold by farmers in the North Central States 6.6 million were feeder pigs. Of these, 3.1 million were sold in the East North Central States of Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin. The remaining 3.5 million head were sold in the West North Central States of Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. However, 7,437,000 feeder pigs were purchased by farmers in the North Central Region in 1956, indicating that the region was a net importer of feeder pigs. Table 2 gives estimated total number of pigs sold and purchased.

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[2]Hogs for breeding and other purposes account for a small percentage of imports.

[3]Newberg, R. R., *Livestock Marketing in the North Central Region—I. Where Farmers and Ranchers Buy Sell,* North Central Regional Publication 104, Ohio Agricultural Experiment Station, Research Bulletin 846, December 1959.

TABLE 1--INSHIPMENTS OF HOGS AND PIGS (1000 Head)

State	1950	'51	'52	'53	'54	'55	'56	'57	'58	'59	'60	'61	'62
Ohio	11	11	15	22	38	22	5	6	3	26	135	192	258
Indiana	19	15	14	5	8	140	162	210	515	417	465	653	843
Illinois	48	52	72	58	78	75	168	148	161	270	131	145	160
Michigan	20	24	18	3	2	3	3	1	1	3	4	11	30
Wisconsin	3	3	3	--	4	5	4	4	3	4	2	4	3
Minnesota	21	17	12	10	12	42	95	35	75	83	60	52	43
Iowa	133	263	288	408	643	606	486	550	690	962	1235	780	790
Missouri	67	61	58	82	53	60	69	59	54	56	54	40	15
North Dakota	6	9	4	4	4	7	5	9	10	9	7	6	7
South Dakota	11	23	15	8	20	31	25	43	64	51	59	87	95
Nebraska	12	12	10	35	44	123	122	70	30	42	49	26	43
Kansas	23	21	40	41	42	45	59	61	68	80	75	76	96
Region	374	511	549	676	948	1159	1203	1196	1674	2203	2276	2072	2383
United States	580	755	740	812	1116	1398	1488	1464	1907	2286	2458	2231	2580

Source: Livestock and Meat Statistics, 1956-1962
Meat Animals, 1950-1955

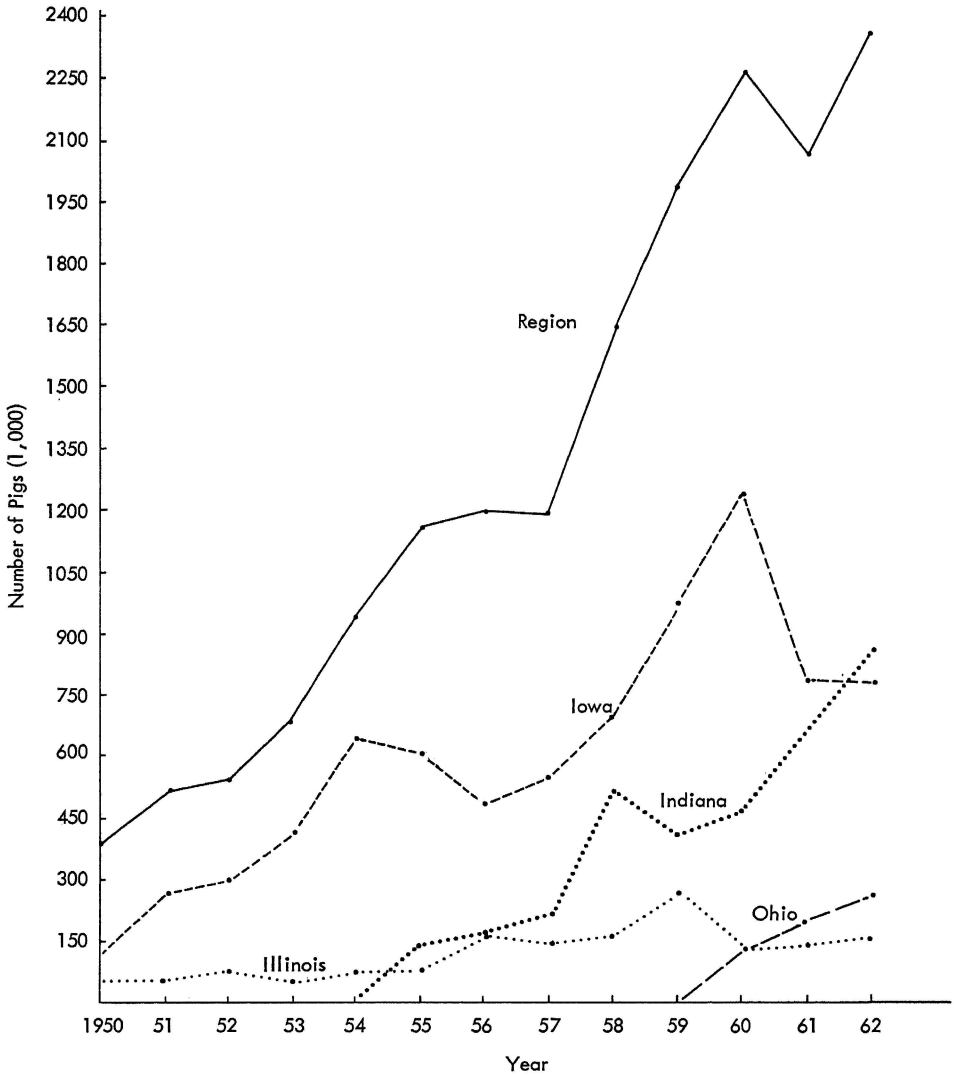

Fig. 7—Inshipments of hogs for the North Central Region and selected states.

TABLE 2--ESTIMATED TOTAL NUMBER OF PIGS SOLD AND PURCHASED AS FEEDERS, 1956 (1000 Head)

State	Total Marketed	Feeder Pig Sales	Feeder Pig Purchases	Net Position
Illinois	11,202	922	1,090	- 168
Indiana	7,656	406	569	- 162
Kentucky	1,594	184	155	+ 29
Michigan	1,329	182	165	+ 17
Ohio	5,167	698	703	- 5
Wisconsin	3,303	677	316	+ 316
E. N. Central	30,251	3,069	2,997	+ 72
Iowa	20,110	1,303	2,643	-1340
Kansas	1,449	113	174	- 61
Minnesota	6,090	615	502	+ 113
Missouri	6,681	1,075	833	+ 242
Nebraska	3,830	214	168	+ 46
N. Dakota	598	65	33	+ 32
S. Dakota	2,435	103	87	+ 16
W. N. Central	41,201	3,488	4,440	- 952
Region	71,452	6,557	7,437	- 880

Source: Newberg, R.R., "Livestock Marketing in the North Central Region," Ohio Agricultural Experiment Station Research Bulletin No. 846, December 1959, pp. 52-53.

Comparable data are not available for later dates so a direct comparison of the changes in purchased feeder pig use relative to those farrowed on the farm where fed can not be made. However, information presented in Table 3 for Illinois implies increased specialization in that area. In the two years, 1961-62, Illi-

TABLE 3--PURCHASES OF FEEDER PIGS IN ILLINOIS IN RELATION TO THE ANNUAL PIG CROP, 1960 AND 1962

Year	Annual Pig Crop	Feeder Pig Purchases: Number head	Feeder Pig Purchases: Percent of pig crop	Feeder Pig Purchases: Number imported	Percentage of Hog Producers Purchasing Feeder Pigs
	(000)	(000)		(000)	
1960	11,422	1,630	14.2	163	22
1961	12,500	2,110	16.6	300	23

Source: "Illinois Feeder Pigs Purchased in 1961," Mimeo, Illinois Cooperative Crop Reporting Service, April 24, 1962.

nois farmers purchased about 15 percent of the hogs they fed compared with 10 percent in 1956.

Our survey in three areas of Iowa and Illinois provided data which can be used indirectly for comparative purposes. Extension of the estimates derived from this survey to the entire region or even to the two states is not feasible since the sampled areas were specially selected on the basis of their high levels of hog production. Since better estimates are not available those derived from the sample will be used to give additional indications of the relative importance of purchased feeder pigs during recent years.

Data on the number of slaughter hogs sold and feeder pigs purchased were collected from farmers interviewed in the sample survey for the years 1961, 1962, and 1963. These are shown in Table 4 along with the percentages that feeder pig purchases were of slaughter hogs sold. Numbers of slaughter hogs sold increased slightly in the three years while feeder pig purchases increased sharply.[4]

TABLE 4--SLAUGHTER HOGS SOLD AND FEEDER PIGS PURCHASED IN THREE AREAS OF IOWA AND ILLINOIS

	1961	1962	1963	Total
Slaughter Hogs Sold	59,978	62,546	64,505	187,029
Feeder Pigs Purchased	5,668	6,691	9,156	21,515
Percentage Feeder Pigs	9.5	10.7	14.2	11.5

Source: Survey of Iowa and Illinois Hog Producers - 1964.

In the sample of 346 operators, the number of individuals purchasing feeder pigs increased from 35 in 1961 to 60 in 1963. Feeder pig purchases were about 9.5 percent of slaughter hog sales in 1961 and had increased to 14.2 percent by 1963. The 1961 percentage was lower than that for the North Central Region in 1957 but the 1963 figures were more than 3 percentage points higher. The average for the three years was one and half percentage points higher than that for the North Central Region in 1956. Furthermore, farmers in the survey indicated that they intended to use more purchased feeder pigs in the future and some farmers not currently using purchased feeder pigs indicated that they would start to do so in the next two or three years.

Illinois farmers purchased about 10 percent of the pigs they fed for slaughter in 1956; Iowa farmers purchased more than 14 percent of the pigs they fed. The weighted average for the two states was more than 13 percent. Thus the percentage of feeder pigs purchased for the survey area, 1961-63, does not exceed that for the two states in 1956. However, data from the Illinois Crop Reporting Serv-

[4]This three year trend can not be taken alone as indicative of increased use of purchased pigs since little is known about cyclical factors in the feeder pig market. It does, along with other evidence, indicate increased interest in feeder pigs versus farrowing.

ice showed that feeder pig purchases made up 15 percent of the state's annual pig crop in 1961-62, a substantial increase from the 1956 level.

The data and information of the preceding sections in conjunction with recent trends of feeder pig importation by the major hog feeding states indicate that the most probable trend in purchased feeder pig use is upward and that as many as 15 to 20 percent of hogs marketed in the North Central States may be from purchased feeder pigs by 1970 if recent trends continue. It is conceivable that an even larger proportion could prevail as conditions are changing rapidly. Since around 80 million head of hogs may be marketed annually by the North Central States in 1970, this suggests there would be demand for as many as 12 to 16 million feeder pigs by that time. Eight million head appears to be a floor on the basis of long time historical use and of course more could be demanded if a more rapid structural shift occurs in the hog producing industry. Insufficient data exists to determine the magnitude of such shifts although it appears that changes are taking place. Younger farmers use purchased feeder pigs to a greater extent than do older farmers, but the retirement rate does not indicate a rapid change in the ownership and operation of farms. However, as increasing farm size restricts labor available for the critical farrowing operation in major grain producing areas, the labor saved by utilizing purchased feeder pigs may result in a greater demand for them. The cost of purchasing feeder pigs in contrast to raising them and the availability of an adequate supply of high quality feeder pigs also will be important determinants in any significant shift toward greater use of feeder pigs.

PRODUCTION AND MARKETING OF MISSOURI FEEDER PIGS

Although feeder pig production is widely scattered throughout Missouri, the major surplus pig producing area is centered in the south central Ozark area in Dent, Texas, Douglas, Howell, Oregon, and surrounding counties. Farmers in the area have some cost advantages because of lower priced land and labor. However, feed must be shipped into and the pigs must be shipped out of the area, adding to the costs of production relative to some other feeder pig producing regions. Many producers sell small lots of pigs, whereas buyers frequently want large lots. These factors create production and marketing problems for the area.

Missouri farmers sold about 1,075,000 head of feeder pigs in 1956. During the same period Missouri farmers purchased 833,000 feeders, including 69,000 head of hogs and pigs which were shipped into the state. This indicates that more than 250,000 feeder pigs were shipped out of the state. Data in Table 5 show that during the 1960-63 period more than 300,000 pigs were shipped out of the state annually. Thus, about a one-fifth increase in outstate shipments occurred between the two periods.

Of the over one and one-quarter million head of feeder pigs shipped out of Missouri over the four-year period about 95 percent remained in the corn belt region. Iowa received the largest volume, approximately 61 percent of the total

TABLE 5--SHIPMENT OF HOGS AND PIGS FROM MISSOURI

1960	1961	1962	1963
312,619	241,735	343,884	303,364*

*First Ten Months
Source: State Veterinarian Office

outshipments. Figure 8 depicts the flow and direction of feeder pigs out of Missouri for 1961-63.

A sample survey of farmers selected randomly in 42 counties of north Missouri was used to estimate the volume of purchases and sales of feeder pigs.[5] This study showed 550,000 purchased and 616,000 sold in 1962, a net outshipment of 66,000 head. This implies that the major hog feeding area in Missouri currently is self sufficient in feeder pig production and, in fact, produces a surplus of pigs. Hog feeding and feeder pig production are more concentrated in counties in the northeast and northwest parts of the state, which also are the main grain producing areas. Increased specialization could result in those areas becoming feeder pig deficit areas but, because of the existence of large areas of rough land, feeder pig production also is an attractive alternative to many farmers within the region. Thus, it appears that pig producers in south Missouri must rely on other areas for increased demand.

Increased out-of-state shipments can be derived from either an increase in demand or from the replacement of other suppliers. The ability to replace other sources will depend on the competitive position of Missouri producers relative to costs of production and the efficiency and effectiveness of the marketing system. Producers in the Ozark region have relatively few alternatives to producing feeder pigs in comparison with feeder pig producers in regions such as southern Wisconsin, southern Illinois, or northern Missouri. This lack of alternative opportunities should give the south Missouri producer a comparative advantage in the feeder pig speciality. Furthermore, lower land and labor costs may enable Ozark producers to have a real cost advantage.

A study of the cost of producing feeder pigs in south central Missouri was conducted in 1962-63.[6] This study showed a wide variability in the costs per litter of producing feeder pigs. However, many farmers in the area produced pigs at low cost and were able to make a substantial profit from their operations. The farmers included in the study had more than tripled their production of feeder pigs between 1958 and the 1961-63 period and stated that they planned to increase their output in succeeding years.

[5]Unpublished Research Data, Agricultural Experiment Station, University of Missouri.

[6]Boesch, Allan J. and Fred E. Justus, Jr., *Cost of Producing Feeder Pigs in South Central Missouri,* Missouri Agricultural Experiment Station, Special Report 44, October 1964.

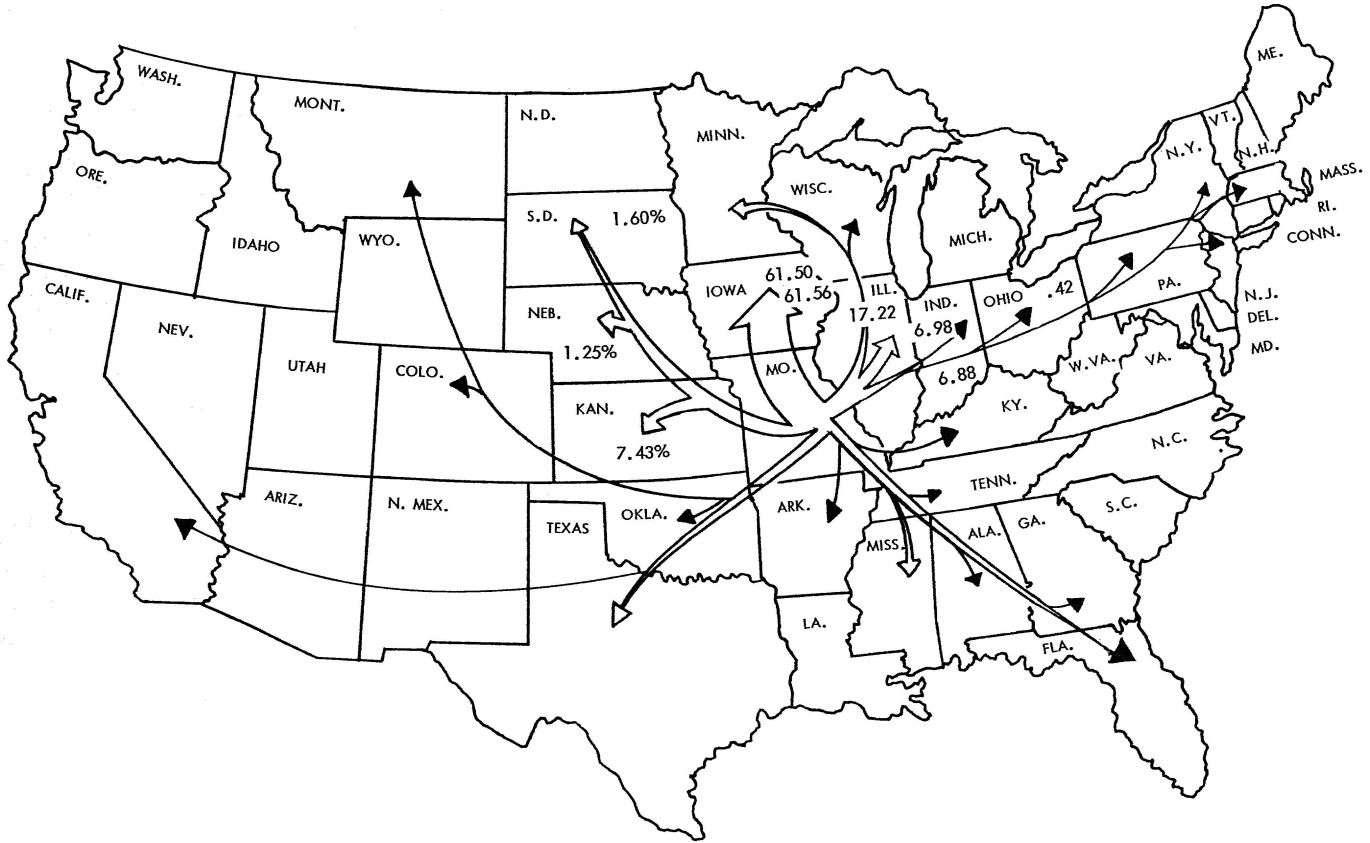

Fig. 8—State destination of Missouri's out-of-state shipments of feeder pigs, 1960-1963.

The major competitors for Missouri pig producers are those in the corn producing region since the majority of feeder pigs are produced in or close to the locality where they are fed out.[7] The relative importance of feeder pigs from sources outside of the state where fed have been increasing, since inshipments in 1950 were only 0.6 percent of the hogs marketed in the North Central Region. By 1963 around 3 percent of the hogs marketed were from inshipments of feeder pigs.

The major grain producing regions, however, do not produce nearly enough feeder pigs to meet local demands. In the areas of Illinois and Iowa where the hog feeders were surveyed only 12,192 feeder pigs were sold by the farmers interviewed in the 1961-63 period whereas 21,515 feeder pigs were purchased. At least 44 percent of the pigs came from areas outside of the counties where the farmers were located. Thus, regional as well as individual farm specialization in the two phases of hog production seem to be developing.

Fac. Affect. Demand for Mo.-Prod. Feeder Pigs

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[7]In some states, e.g., Illinois, there are important feeder pig producing areas located in parts of the state separate from the major grain producing and livestock feeding areas.