

# Large and Medium Volume Hog Producers



A National Survey

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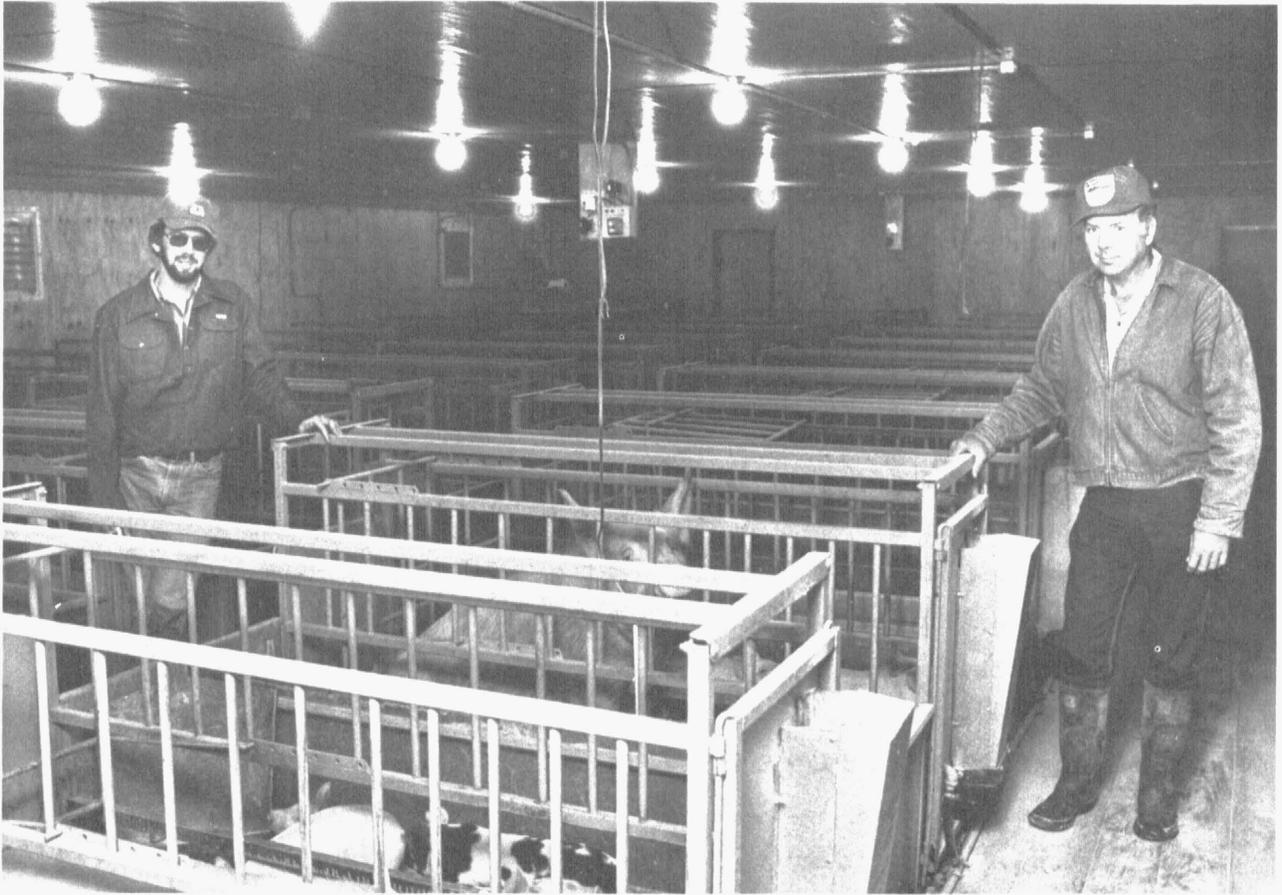
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# LARGE AND MEDIUM VOLUME HOG PRODUCERS: A NATIONAL SURVEY

By

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It is generally known that there are numerous producers of hogs with volumes of marketings far above those of the typical corn-hog farmer. Numerous accounts in farm magazines describe operations of 500 sows or more in various states and several European countries.

A visitor to the Soviet Union reported complexes marketing as many as 216,000 head annually (Feedstuffs, Nov. 4, 1977, p. 13). G. R. Carlisle, recently retired swine specialist at the University of Illinois, said that pork production will increasingly be in the hands of a new group of producers that he called the "young tigers" (Feedstuffs, Dec. 5, 1977, p. 4.).

The Census of Agriculture for 1974 indicated that 10,709 producers each sold 1,000 or more hogs and pigs in 1974 for a national total of 19,906,833. That average size of 1,859 is obviously much smaller than many large producers. A previous survey by researchers at the University of Missouri and a trade magazine, Hog Farm Management, in 1975 provided perspective on the numbers of units, volume of marketings, and sundry other information.

The present survey, three years later provides a 1978 description of this increasingly important sector of the swine industry. The national totals are incomplete because they are limited to subscribers to Hog Farm Management. The results, however, are more complete than other information presently available. Moreover, many of the averages, proportions, and relationships may be representative of national conditions.

Hog Farm Management mailed a questionnaire, designed jointly by its editors and the authors, to (a) all producers on its mailing list who said they marketed 5,000 or more hogs annually and (b) to a 50 percent sample of those producers who market 2,500 to 4,999 hogs annually. After two mailings, usable replies were obtained from about 44 percent of those surveyed. A sample of 100 of the non-respondents in each group was then interviewed by telephone. Thus, we have a good sample of the magazine subscribers.

As expected, some producers in the reporting years 1975, 1977 and 1978 were marketing more or less hogs than indicated by their initial subscription

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\*The authors acknowledge gratefully the cooperation of Hog Farm Management, Minneapolis, in obtaining the data for this study.

classification. Any producer who indicated marketings of 5,000 head or more in at least one of the three years was counted as a "large volume" producer and was included in the results reported here. Some of the contacted subscribers were no longer producing hogs or were producing less than 2,500 hogs in the three reporting years. Such producers were not included in the survey but their numbers were used in estimating how many on the total subscription list were actually "large" (5,000 or more) or "medium" (2,500 to 4,999) volume hog producers.

#### NUMBER AND SIZE OF LARGE VOLUME OPERATIONS AND TOTAL MARKETINGS

An estimated national total of 1,340 large-volume producers marketed 11.2 million hogs and pigs in 1977 and planned to market 13.7 million in 1978 (Table 1). These marketings in 1977 included 8,556,000 slaughter hogs, 2,314,000 feeder pigs and 306,000 head sold as breeding stock. The total slaughter hogs comprised about 11 percent of U.S. commercial slaughter in 1977. The growth of 2,971,000 head 1975-77 constitutes an annual growth rate of 16.7 percent.

It should be clearly understood that the above totals are only crude approximations of the national totals, but they are about as accurate as can be obtained absent a more complete list of all such producers. Moreover, the sampling errors in estimating population totals are considerably greater than in estimating averages and proportions.

Much of the rapid growth in marketings, 1975-78 was due to the entry of new operations into the hog business as well as to the rapid growth of units existing in 1975 (Tables 2 and 3). For example, it appears that about 200 of the units reporting 5,000 head or more in 1977 and/or 1978 were not in existence in 1975. Note that the total of 755 operations below 7,000 head in 1975 decreased to 556 in 1978 as units grew into larger size categories while the 80 units of 15,000 head or more doubled to 161 units in the same period (Table 2). These 161 larger units, while only 12 percent of the group, expected to market 35.6 percent of group marketings in 1978.

#### TYPES OF ORGANIZATIONS

These large operations were organized differently than smaller farms. A majority (57.9 percent) of the operations were incorporated (Table 4). The regular and Sub-chapter S corporate forms were used equally often. About 45, or 3.4 percent, of all operations were cooperatives.

Further information was obtained on many, although not all, of the corporations. Some 322 (40.7 percent) of the corporations were identified as exclusively family owned, and 333 (42.1 percent) were identified as being owned by non-related people. About 179 (22.6 percent) were identified as feeder pig farrowing corporations or cooperatives; 297 (37.5 percent) were identified as not being farrowing corporations and 315 (39.9 percent) did not provide this information.

About 10 percent of the hog operators surveyed, 143, were identified as part of an agribusiness operation. These 143 included 105 feed companies, 9 meat packers, 13 poultry firms and 16 others.

## LOCATION

The two North Central regions (WNC and ENC) included two-thirds (66.5 percent) of the large units but only 54.3 percent of their marketings, reflecting the lower average size in those regions (Table 5). These two regions usually account for about 80 percent of national hog production, according to USDA Pig Crop Reports. The Southeast (SE) ranked second in percentage of marketings and third in percentage of units of large scale producers.

Almost two-thirds of the large operations and two-thirds of the marketings were included in the six leading states (Table 6). North Carolina led in marketings with 18.3 percent of the national group, but trailed both Iowa and Illinois in number of operations. These estimates of state totals are subject to a rather large sampling error, however, so state totals are only rough approximations. Large-scale operations were reported in 34 states.

## FARROWING

A majority of operations fed out the pigs they farrowed but some specialized in either farrowing or feeding while some made supplemental sales or purchases of feeder pigs. Farrowing was reported in 1977 by 82.8 percent of the units. Total farrowings at 8,722,000 head were 77.8 percent of total marketings (Table 7). The total farrowed as a percentage of marketings was somewhat smaller in the largest size group (70.0 percent in 15,000 head or more compared to 79.7 percent in under 7,000 head and 81.9 percent in the middlesize group). This difference in groups was due to a smaller proportion farrowing in the largest group and a slightly smaller average size of farrowings than of marketings as well (Table 7). Another way to express the same points is to say that the largest size group included a larger percentage of marketings than of farrowings (Table 8). However, farrowing was clearly becoming much more prevalent in the largest operations than was found in the 1975 survey. Farrowing is becoming more like a factory operation.

Farrowings were a slightly greater percentage of marketings in the north and west than in the south.

## FEEDER PIG SALES AND PURCHASES

Feeder pig sales of almost 3 million head projected for 1978 were 21.4 percent of projected total sales (Table 9). Feeder pigs are clearly growing in relative importance as a marketing category; only 17.3 percent were sold as feeder pigs in 1975 (and only 10.1 percent in 1973 as shown by the previous survey). The rapid growth of feeder pigs is partly due to the growth of the farrowing corporation (sometimes called sow corporation or farrowing cooperative).

Farrowing corporations were identified as the source of 1,089,000 feeder pigs in 1977; quite likely this is an underestimate as many feeder pig sales were from corporations not identified as being either farrowing or non-farrowing corporations (Table 11). Corporations marketed 1.7 million feeder pigs in 1977 or about 76.0 percent of all feeder pigs marketed by

large operations. Cooperatives marketed 286,000 feeder pigs--only 12.8 percent of the total feeder pigs marketed by all corporations.

Almost 62 percent of all feeder pig sales in 1977 were in the WNC region. The 1,425,000 sold in the WNC were a surprisingly large 40.5 percent of all marketings in that region (Table 10).

More than half of the group's feeder pigs were marketed by units in the 7,000-14,999 size class while only 12.2 percent of feeder pig marketings were by units larger than 15,000 (Table 13). The average size of marketings of the 460 operations selling feeder pigs was 5,030 pigs while the average for farrowing corporations was 6,768.

Feeder pigs were also purchased by many large operations. Total feeder pig purchases of 2,489,000 head in 1977 were 29.1 percent of slaughter hog marketings, but were 38.7 percent for those operations marketing 15,000 or more head. Total purchases of feeder pigs by these large volume operations exceeded total sales by 175,000 head. Compared to the regional shares of marketing all hogs, the WNC region was a small purchaser of feeder pigs and the SE region was a large purchaser. While marketing 61.6 percent of the large group feeder pigs and 31.6 percent of all hogs, the WNC region purchased only 21.8 percent of the total feeder pigs.

The usage of marketing channels varied greatly between purchases and sales. Large operations tended to sell direct to other producers while they purchased only about 40 percent direct from other producers (Table 22). Direct placement of feeder pigs by farrowing corporations was an important part of such direct sales, of course. The largest operations (15,000 head and more) were more inclined both to purchase and to sell direct.

#### BREEDING STOCK

A total of 305,946 head of breeding stock were marketed in 1977 by 422 operations for an average of 725 head. Corporations marketed 227,240 head or almost three-fourths of all breeding stock sales; family corporations likely marketed a bit more than one-half of corporate sales (Table 12).

#### GROWTH

Any study of this type presents a somewhat incomplete picture as it provides information on survivors and not on failures and dropouts.

Most operations reported growth over time and many reported rapid growth. Almost 95 percent of the operations that existed in 1965 reported that they were larger in 1975 (Table 14). Likewise three-fourths of those existing in 1975 reported that their marketings were greater in 1977. Firms of all ages reported growth 1975-77 and projected further growth for 1978 (Table 15). The newer firms (e.g. those begun 1974-76) were apparently growing a bit faster than older ones. It also seems likely that proportionately more firms were beginning at a large size in recent years--note, for example, the firms begun in 1971-73 averaged a larger size in 1975 than those begun before 1965.

All size groups of firms reported growth 1975-77 and projected further growth in 1978 (Table 16). Rate of growth exceeded an average of 10 percent a year for those marketing more than 7,000 head in 1977. Of course, the larger groups grew faster in terms of absolute number but they also grew faster in percentage terms as well. These rates of growth were considerably faster than the growth of U.S. commercial slaughter 1975-77 (1977 slaughter was 12.5 percent more than 1975 slaughter).

The projected rates of growth for 1978 were particularly impressive. In several cases, growth in that year was projected to be almost as much, if not more, in absolute numbers than the growth of the previous two years. These projections contrast sharply with the rather flat projections being reported by all sizes of operations to the U.S. Department of Agriculture in early 1978.

#### PERCEIVED ADVANTAGES AND DISADVANTAGES OF SIZE

Operators were asked the major advantages and disadvantages to an operation of their size compared to a smaller one. Many operators gave two or more answers to each question while some did not reply; these questions were not asked the telephone sample.

One set of advantages emphasized economic efficiency. The greatest advantage was better utilization of labor and capital by the large unit (Table 17).

Another set of advantages emphasized pricing and other advantages. The most important advantage in this set was better prices in buying and/or selling. Only a tiny 2.6 percent suggested that there were no advantages to size.

The three most important disadvantages to large size were perceived to be problems of labor availability and quality, disease, and a required high level of management (Table 18).

Another question asked: Would you expect a sizeable expansion of your production to cause your profits per head to increase, decrease, or stay the same? Those answering "increase" were in effect saying that further economies of size could be exploited by expansion. On the contrary, those saying "decrease profits" were saying that the average costs per head would be pushed up by further expansion.

There are more operators who think they face economies of size than there are who think they face diseconomies. The largest size class was only a trifle less confident than the smaller classes (Table 19). A considerably larger proportion of farrowing corporations (45.6 percent) than of non-farrowing corporations (27.6 percent) felt that they faced economies of size.

#### MARKETING CHANNELS OF SLAUGHTER HOGS

About three-fourths of hogs were sold directly to the packing plant with buying points the second alternative and terminal markets a weak third (Table 20). The larger the unit the more likely that they sold direct to the packing plant.

The southern and western regions had fewer alternatives besides the packing plants. They relied more heavily on shipments direct to packing plants (SE 93.1 percent, SC 92.8 percent, W 92.5 percent contrasted to WNC 69.6 percent and ENC 55.6 percent).

#### PRICING METHODS AND HEDGING OF SLAUGHTER HOGS

Almost one-fourth of slaughter hogs were priced in 1977 by carcass weight (grade and yield). This practice was much more popular among those surveyed than among all hog producers (The Packers and Stockyards Administration of USDA reported 10.5 percent for 1976). Carcass selling was more prevalent among the smaller operations (Table 21). It was also more popular in the WNC (46.9 percent) and SC (33.4 percent) than in other regions and especially the SE (4.9 percent).

Most prices were determined at delivery rather than by a "forward contract or agreement made a month or more prior to delivery" (Table 21). The middle sized group appeared less willing to contract. Contracts were more prevalent in the W (35.3 percent) and NE (29.9 percent) than in the WNC (8.8 percent) region.

Hedging of market hogs was much less prevalent than forward contracting. Almost 17 percent of the operations reported some hedging but most of them hedged one third or less. Total volume hedged was 517,057 head or 6.0 percent of the survey group's total marketings of slaughter hogs.

#### PRODUCTION PRACTICES

Types of Facilities. More than one type of facility was found on many operations; consequently more responses than respondents were involved. The total confinement, environmentally controlled facility was reported most frequently--about two-thirds of the time in the nation and more frequently in the north (Table 23). A variety of other types were also reported.

Type of Waste Handling. Partial slats and liquid manure handling was the most prevalent system (Table 24). There were a few differences by region.

Farrowing Problems. Operators were asked to check a list as to their two worst farrowing house problems. E. coli scours was clearly the most prevalent problem (Table 25). Baby pig starvation and MMA in sows were next in importance. There were a few variations by size of operation (Table 25).

Management Practices with Purchased Feeder Pigs. Worming was a nearly universal practice, followed by spraying for lice and mange (Table 26).

Feed Grain Grown. Hog production has traditionally been tied to feed grain production by area and has usually been associated on the same farm. These large specialized units were frequently not self-sufficient in grain production and 21.6 percent did not produce any grain (Table 27).

## COMPARISONS WITH THE 1975 SURVEY

Most of these survey results are similar to those of 1975 with a few significant differences.

The number of operations and total marketings are obviously much larger than the 549 operations projected to market 5,488,000 hogs and pigs in 1975. Most, but not all, of the difference is due to entry of new firms and growth. This more inclusive survey found more firms existing in 1975 than did the previous survey.

The average size of operation and the pattern of growth is similar. Both surveys show that most operations grow after their inception, that a majority grow between any two consecutive years, and that average annual growth rates are impressive. However, there was faster growth among the largest firms in this survey but the rate was smaller than that shown by the smallest firms 1973-74.

Perceived advantages of large size were much the same. Perceived disadvantages of size were also similar except that labor availability and size moved from second to first place crowding out disease in 1977.

One striking difference is in legal organization. There is a definite trend toward incorporation with 57.9 percent incorporated in 1978 compared to 39.8 percent in 1975. However, a factor contributing to this difference as well as to several others was the rapidly rising importance of the farrowing corporation. Whereas 36 farrowing corporations (6.5 percent of all units) were identified in 1975, there were 179 (13.3 percent) identified in 1977. (Even so, state studies and popular stories suggest that 179 is a considerable underestimation of the U.S. total.)

The locational pattern is different. Whereas only 54.3 percent of the operations in the 1975 survey were in the two NC regions, 66.5 percent of this survey were located there--with reductions in the relative percentages in the two Southern regions and the West. The rapid rise of the farrowing corporation in the NC regions was a factor in this shift. The six leading states remained the same in both surveys, however.

Another striking change is the larger scale of farrowing. Farrowings in 1977 in the 15,000-plus subgroup were 70.0 percent of marketings compared to only 48.5 percent in 1974. Another measure of that shift was the increase in the average size farrowing operation in that subgroup from 16,500 in 1974 to 26,535 head in 1977. Most farrowing corporations have not yet grown into the 15,000-plus size group, so the shift described above should not be attributed to the farrowing corporations.

Feeder pig sales (and placements) by large-volume operations continued the upward trend observed in the 1975 study. Combining the coverage of the two studies, feeder pig sales as a percentage of total marketings have risen from 10.1 percent in 1973 to 20.7 percent in 1977 with a projection of 21.4 percent for 1978. Again, much, but not all, of the change can be attributed to the rapid growth of the farrowing corporations. Sales of feeder pigs by farrowing corporations rose from 4.1 to 9.7 percent of all hog and pig

marketings, 1974-77, while similar sales by operations not identified as farrowing corporations rose from 7.9 to 11.0 percent 1974-77. There was a striking change in the net purchases (excess of purchases over sales) of feeder pigs by this group. Net purchases were 886,000 head in 1974 and only 175,000 in 1977. The change results mainly from a big increase in sales (and placements by farrowing corporations) of feeder pigs.

No changes of any importance were noted in marketing channels of slaughter hogs nor in the relatively little use of hedging. The percentage of animals priced on a carcass rather than a live basis edged up from 20.1 to 24.4 percent. In contrast, the percentage contracted rose from 3.8 percent to 15.6 percent. Part of the switch was likely an artifact of a change in wording on the questionnaire, but it appears likely that there are year to year variations in the popularity of contracting.

The pattern of usage of channels in feeder pig sales remained the same but there was a small swing in purchase patterns toward buying direct from producers.

In facilities, there is a trend toward more use of environmentally controlled, total confinement buildings. The percentage of operations having one or more such buildings rose from 48 percent in the 1975 survey to 63 percent in the present one.

The liquid waste flush system rose from little usage in 1975 to 24 percent mentions in 1978. Meanwhile the use of liquid waste, total slats, declined from 41 percent to 28 percent.

Apparently problems in the farrowing house remain much the same. In the present survey there were slightly fewer (56 to 50 percent) mentions of *E. coli* scours, MMA (24 to 16 percent), and baby pig starvation (27 to 22 percent), and more mentions of ventilation problems (10 to 18 percent), and crushing baby pigs (20 to 24 percent).

There appeared to be a large change 1974 to 1977 toward more self-sufficiency in the production of feed grains. These surprising results led to a re-examination of the earlier analysis and the discovery of a computational error. It is impossible to reconstruct all of the earlier data but it appears likely that self-sufficiency in 1974 was equal to or greater than that of 1977.

## MEDIUM VOLUME HOG PRODUCERS

The data for this phase of the report pertain to operations marketing 2,500 to 4,999 hogs in any of the reporting years, 1975, 1977, or 1978. For purposes of this report, these are called medium volume producers. A total of 1,709 producers are represented although the number reporting on any given question was often smaller.

The national and regional totals presented here are incomplete because (a) the sampled population doesn't include producers who are not subscribers to Hog Farm Management and (b) the sampled population doesn't include HFM subscribers who should be listed in this size group but were listed initially at a smaller size in HFM's records. A telephone sampling of smaller size groups in HFM's records suggests that there may be more than 1,000 medium volume producers not included in this study. However, while the totals are too small, the averages, percentages, and regional relationships may be representative of national conditions.

### NUMBER AND SIZE OF MEDIUM VOLUME OPERATIONS AND TOTAL MARKETINGS

An estimated total of 1,682 producers marketed 4.7 million hogs and pigs in 1977 (3.9 million slaughter hogs, 0.7 million feeder pigs and 0.1 million breeding stock). See Table 28. The total slaughter hogs comprised about 5 percent of U. S. commercial slaughter in 1977. They planned to increase their total marketings in 1978 to 5.3 million head--an impressive increase of 600,000 head. The 1975 to 1977 growth of 890,000 head constituted an annual growth rate of 11.1 percent.

Much of the sizeable growth in marketings of this group, 1975-78, was due to the entry of more than 100 new producers (Table 29) as well as to the rapid growth of units operating in 1975 (Table 30). Note, for example, in Table 29 that the number of these units below 3,000 head in 1975 was projected to fall by half by 1978 while the number of units above 4,000 head was projected to increase by 232 percent.

### TYPES OF ORGANIZATIONS

These medium volume units were predominantly organized as individual proprietorships or partnerships. In contrast with the large volume units, only 22 percent were incorporated (Table 31).

### LOCATION

Three fourths of these units and three-fourths of their total marketings were in the NC regions (Table 32). These proportions in the NC regions were larger than for the large volume operations and were nearly as large as the national distribution of all hog production in these regions.

About 63 percent of these operations and 62 percent of their marketings were included in 1977 in the six leading states of Iowa, Illinois, Indiana, Minnesota, Kansas, and North Carolina (Table 33). State comparisons may not be accurate, however, because of the large sampling error in estimating population totals and possibly differing proportions of state producers who subscribe to Hog Farm Management. Medium volume operations were reported in 38 states.

#### FARROWING

In 1977, 81.1 percent of the units reported farrowing some or all of the hogs and pigs marketed (Table 34). Most (91 percent) of those with farrowing operations did not buy additional feeder pigs. Total farrowings at 3,672,000 head were 78.5 percent of marketings. This pattern was similar to that for the large volume operations. The major difference is that most farrowing corporations were in the large volume group rather than this one.

#### FEEDER PIG SALES AND PURCHASES

Feeder pig sales of 772,000 head projected for 1978 were 14.5 percent of projected total marketings of all hogs (Table 35). While feeder pig sales appeared to be growing in importance they were considerably smaller than the 21.4 percent projected for 1978 by the large volume hog producers. The most likely reason is that there were many (168) farrowing corporations in the large volume group and very few (15) in this group.

Feeder pigs were marketed in 1977 by 25 percent of the units. However, most operations marketed other hogs as well and average marketings of feeder pigs per unit were only 1,633 head.

Feeder pig sales were relatively most important in the WNC region--18.2 percent of marketings (Table 36). This percentage was less than half of the 40.5 percent for the large volume group (5,000 head or more marketed), reflecting again the influence of the farrowing corporations in the large volume group but not in this medium size group. Stated another way, four-fifths of feeder pig marketings were in the NC regions (Table 36).

Group purchases of feeder pigs were greater than group sales. Total feeder pig purchases of 1,006,000 head in 1977 were 26.0 percent of slaughter hog marketings. Proportionately more feeder pigs were both sold and purchased by individuals than was true of slaughter hogs and breeding stock (Tables 37 and 38). Almost three-fourths of all purchases of feeder pigs were in the NC regions.

Medium size operations were more likely to sell feeder pigs directly to other producers than they were likely to buy in that direct fashion. While direct purchase was the leading channel, more than half were purchased through channels involving intermediaries (Table 39). Only about 7 percent of purchases were via contractual agreements. On the other hand, almost two-thirds of feeder pig sales were direct to other producers and very few were sold to dealers (Table 39). Almost 21 percent of sales were via contracts. These

general patterns for medium size producers are similar to the large size group except that the large size group sold a higher proportion (87.5 percent) direct to producers (many of these were placements by farrowing corporations).

#### BREEDING STOCK

Sales of breeding stock were a supplementary enterprise for almost one-third of these operations. A total of 120,000 head of breeding stock were marketed by 551 operations in 1977 for an average of 218 head per operation. Breeding stock marketings were about the same percentage of slaughter hogs for this medium group as for large volume producers.

#### GROWTH

Most operations reported growth over time, and recent growth on the average was relatively rapid. About 94 percent of the operations that existed in both 1965 and 1975 were larger in 1975 (Table 40). Likewise two-thirds of those existing in 1975 reported that their marketings were greater in 1977. The percentages were fairly comparable to those of the large volume group.

Most firms of all ages reported growth 1975-77 and projected further growth for 1978 (Table 41). Percentage rates of growth were fairly impressive, especially for the newer firms. These rates of growth were somewhat faster than the 12.5 percent growth of U. S. commercial hog slaughter 1975-77. Moreover the projected rates of growth for 1978 contrasted sharply with the rather flat projections being reported by all sizes of operations to the USDA in early 1978. These medium volume operations were more like large volume operations than like smaller producers in their 1975-77 growth and in their projected 1978 growth.

#### PERCEIVED ADVANTAGES AND DISADVANTAGES OF SIZE

Operators were asked on the mail survey the major advantages and disadvantages of their size compared to a smaller operation. Many operators gave two or more answers while some gave none.

The two most important advantages were better utilization of labor and capital, and better prices in buying and selling (Table 42). The general pattern of responses was much the same as for the large volume group. Only 1.4 percent suggested that there were no advantages to size.

The three most important disadvantages of size were perceived as disease, labor availability and quality, and the high level of management required (Table 43). Again these three were the same as for the large volume set, although it may be significant that they placed labor availability first rather than disease.

Another question asked: Could you expect a sizeable expansion of your production to cause your profits per head to increase, decrease or stay the same? Those answering "increase" believed that further economies of size

could be obtained by expansion. On the other hand, those saying "decrease profits" believed that further expansion would increase average costs per head.

Twice as many operators indicated that expansion would increase profits per head as said decrease (Table 44). Half of the operators indicated that expansion would not change average profits. This pattern of responses is much the same as that of the large volume operators. Corporate operators were more optimistic than individual operators; those replying for non-family corporations were more optimistic than those representing family corporations (Table 44).

#### DECISION CRITERIA FOR MARKETING SLAUGHTER HOGS

How many operators try to outguess the market in selecting a day to market and how many market at set times (say every Tuesday) or whenever hogs reach a marketable weight? Our question forced a choice among those alternatives whereas it may sometimes be a matter of relative weights. Thus, these answers may reflect customary behavior rather than any ironclad rules.

Slightly more than half tried to hit the highest price by studying daily prices (Table 45). About one-fourth routinely marketed at set times, 4 percent contracted ahead and shipped when ready, and 10 percent shipped when a marketable weight was reached. Trying to outguess the market was mainly restricted to the NC regions (Table 45). The large volume producers were less inclined to try to outguess the market; 34.7 percent marketed at a set time and only 42.2 percent studied daily prices to try to obtain the high.

#### MARKETING CHANNELS OF SLAUGHTER HOGS

About 4 out of 10 hogs were sold at the packing plant door, a similar fraction was sold to buying points and about one seventh were sold through terminal markets (Table 46). These results differ considerably from the large volume producers; 77.5 percent of their hogs were sold at the packing plant door, 16.8 percent to buying points and only 5.2 percent through terminals.

On a regional basis the Northeast and the two southern regions sold least to buying points, and the Northeast, South Central and West sold least through terminals.

#### PRICING METHODS AND HEDGING OF SLAUGHTER HOGS

About 28 percent of the slaughter hogs were sold by carcass weight (grade and yield). See Table 47. Grade and yield pricing--as with the large volume group--was most prevalent (43 percent) in the WNC region, while only 7 percent and 10 percent were reported in the Southeast and West, respectively.

The medium size group was much less inclined to contract ahead ("by a forward contract or agreement made a month or more prior to delivery") than large volume operations. Only 4.7 percent on the hogs were marketed by such forward contracts compared to 18.3 percent for the large volume group (Table 47).

Hedging of the slaughter hogs in 1977 was uncommon. While 10.8 percent of the operations indicated some hedging, the typical proportion was not all of their hogs but rather about 20 percent. A total of about 112,000 hogs were reported hedged or about 2.9 percent of total slaughter hogs. Hedging was about one-half as prevalent in this group as in the large volume group.

#### PRODUCTION PRACTICES

Types of Production Facilities. More than one type of facility was found on many operations; consequently more responses than operations were recorded. The total confinement, environmentally-controlled facility was reported most frequently--54 percent for U.S. and 60 percent for a region high in the combined NE-ENC region (Table 48). Open front, concrete floors were next high, and other types were also frequently reported.

Types of Waste Handling. Partial slats and liquid manure handling was the most prevalent system with solid waste ranking second and total-slats-liquid-manure ranking third (Table 49).

Farrowing Problems. Operators were asked to check a list as to their two worst problems in the farrowing house. E.coli scours was--by far--the leading problem with baby pig starvation and MMA in sows ranking second and third (Table 50). Complaints about scours increased with size of operation while difficulties with MMA decreased with size (Table 50).

While this pattern of responses was fairly similar to that of the large volume group, this group of medium volume had relatively more complaints concerning scours, MMA, baby pig starvation, crushing baby pigs and waste disposal, while it had relatively less complaints about stillborn pigs and ventilation problems.

Management Practices with Purchased Feeder Pigs. Worming was a nearly standard practice followed by spraying for lice and mange (Table 51). Neither practice was followed quite as often as by large volume operations.

Feed Grain Grown. Almost all of these medium volume units in 1977 raised some of their hog feed and nearly half raised all of the feed grains needed (Table 52). Not surprisingly, the units in the NC tended to be most self-sufficient in feed grain production. These figures contrast with the large volume units in which only 28.6 percent raised all their feed grains and 21.6 percent did not raise any.

#### GENERAL SUMMARY AND COMPARISON OF BOTH THE LARGE AND MEDIUM VOLUME GROUP

These medium and large size operations that marketed 15.9 million hogs and pigs in 1977 are a significant part of the U.S. hog industry. Even this impressive total is likely a substantial underestimate because many medium and large size producers are likely not on the Hog Farm Management circulation list.

Type of legal organization was highly related to size; the larger the operation the more likely that it was incorporated.

The medium volume units and their marketings were mostly in the NC regions--the traditional home of most hog production--whereas nearly 46 percent of the marketings of the large volume group were outside the NC regions.

A majority of operations fed out the pigs they farrowed but some units specialized in either farrowing or feeding out (slightly less than 20 percent of each size group), while some made supplemental sales or purchases of feeder pigs. The 1975 study indicated that farrowing fell off sharply in the largest subgroup (15,000 head plus) with farrowings only 48.5 percent of marketings compared to 80.3 percent in the 7,000-14,999 group. The dramatic shift since then is shown by farrowings being 70.0 percent of marketings in the 15,000 head group in this survey as compared to 81.9 percent in the 7,000-14,999 group and 78.5 percent in the medium volume group. Clearly, farrowing is becoming as much a factory operation as is feeding out.

Selling of feeder pigs was more important in the large than in the medium volume group as the large group's sales of 2,314,000 head in 1977 were 20.7 percent of total marketings while the medium group's sales of 686,000 were only 14.7 percent of their total marketings. The 1974 Census of Agriculture indicated that 16.0 percent of marketings of hogs and pigs (by all farms with sales of \$2,500 or more) were feeder pigs. Much of this difference in the two groups stems from the new importance of farrowing corporations that were mainly in the large volume rather than the medium volume group. It is likely that more than one-half of the large group's feeder pigs were shipped by the farrowing corporations.

Operations that feed out purchased pigs were still quite important in both groups. Feeder pig purchases exceeded sales by about 175,000 for the large operations and by about 320,000 for the medium group in 1977.

These firms have continued to grow. About 72 percent of the large group and 66 percent of the medium reported larger marketings in 1977 than 1975. On an average the marketings of the medium volume group (of operations reporting for both years) grew 16.5 percent 1975-77, compared to an average growth by the large group of 18.4 percent and of U.S. commercial slaughter of 12.5 percent. Even if there were no new entrants into these two groups, such continued growth at rates faster than that of other operations would gradually change the complexion of the U.S. hog industry. In fact, however, new entrants into these groups constituted a segment of growth nearly as important as the growth of the existing firms. Thus, if present trends continue, these two groups will soon be marketing one-third rather than one-sixth of total slaughter hogs, as well as sizeable amounts of feeder pigs and breeding stock.

These operators see the advantages of size as being better utilization of resources and better prices. Only a small fraction think that expansion would reduce average profits per head.

The traditional marketing channels for smaller producers have been sales through competitive markets or direct to buying points or packing plants. There has been a gradual shift toward the buying points and deliveries direct to plants. The medium volume producers were likely ahead of this trend with 43 percent to plants and 41 percent to buying points. However large producers were sending 77 percent to plants and 17 percent to buying points. It is hardly surprising that larger producers would be more likely to go direct--the amount of the shift is impressive and perhaps surprising to some.

The medium volume group is at the forefront of grade and yield selling--28 percent of their volume in 1977 was sold by this method. The large volume group reported 24 percent while The Packers and Stockyards Administration reported that 10.5 percent of all U.S. hogs in 1976 were sold by grade and yield. Generally, both size groups took current price rather than contracting ahead. Hedging was uncommon. Slightly more than half of the medium group tried to outguess the market in selecting the day to ship slaughter hogs, while more of the large volume group routinely sold when ready.

A surprisingly large proportion of these specialized hog operations produced some or all of their grain fed, although the larger units produced less than the medium units. For example, 28.6 percent of the large units raised all of their feed grain as compared to 46.0 percent of the medium units.

A variety of physical facilities was found among these producers and even on the same operation. The total confinement, environmentally-controlled facility was reported by 63 percent of the large units and 54 percent of the medium ones. Such total confinement units were considerably more common in the NC regions than in other areas.

Partial slats and liquid manure handling was the most prevalent system of waste handling reported in both groups--63 percent and 59 percent of the large and medium units, respectively. Numerous units reported more than one system in operation, however.

E. coli scours was the worst farrowing house problem in both groups. Among the large group, 50 percent of the operations mentioned it as compared to 55 percent of the medium operations.

Worming was a nearly standard practice with newly purchased feeder pigs, and spraying for lice and mange was generally practiced.

#### IMPLICATINGS OF INCREASING PRODUCTION BY LARGER (2,500 PLUS) PRODUCERS

In their 1975 publication, Rhodes and Grimes explored the possible implications to the hog industry and to related institutions of a majority of hogs, rather than the 6 percent or so in 1974 that was produced by these large volume operations. This section largely repeats what they said in 1975.

Some of the following ideas are still speculative, but the accumulating evidence appears to be supportive.

1. Seasonality of production will be reduced.
2. Response to economic stimuli may differ. Large fixed facilities and associated fixed costs discourage output reduction in response to unfavorable prices. On the other hand, difficulties of output expansion in response to favorable prices have been overemphasized by numerous observers. Certainly, it takes time and capital to build new facilities. However, it takes time to increase a breeding herd and increase sales even in pasture operations. Moreover, the cash flow stemming from profitable prices and income tax features such as investment credits, accelerated depreciation, and cash accounting make the investment of capital in new facilities easier and more attractive than sometimes realized.
3. Possible changes in marketing and pricing patterns.
  - Reduced importance of terminals, auctions and local markets, as most sales go directly to packing plants.
  - Increased proportion of pricing on the basis of carcass grade and weight.
  - A declining percentage of prices available for public news reports.
4. Rising overcapacity of feed manufacturers as the hog feed sales shift from complete feeds to premixes. See, for example, a story in Feedstuffs, Nov. 6, 1978, on this point.
5. Financing.
  - Large, specialized units probably have greater fluctuations in cash flow and income when sharp changes occur in hog and feed prices than do traditional units.
  - Credit needs may frequently exceed those available locally.
  - Equity financing will gradually move into the hands of non-farm individuals and companies. As hog production becomes a factory system, farmers will have no inherent advantages in retaining control of it. Already, nearly 10% of the large volume units are part of agribusiness operations--typically a feed company.
6. Breeding stock. The large orders for gilts and boars for initial stocking and even for continued operation of these large units generally benefit the large corporate sellers of breeding stock.
7. Farm organizations. Large hog producers will look increasingly to their commodity organizations rather than to general farm organizations.

8. Education and consulting. Producers of the size surveyed are more likely to turn to private consultants, feed manufacturers, large breeding stock companies, researchers, state extension specialists, and to each other for information rather than depend on local extension, feed dealers and non-owner veterinarians.
9. Midwest farmers. The dropping of hog production from larger (and perhaps smaller, as well) crop farms allows more specialization, perhaps increases net incomes, likely makes year to year net income more variable, and affects the seasonal patterns of labor utilization.

To the extent that some or all of these projected effects do occur, this structural change in the hog industry is important not only to present hog producers but also to other farmers, associated agribusinesses and public institutions.

TABLE 1. NATIONAL MARKETINGS OF LARGE-VOLUME PRODUCERS

<u>Year</u>	<u>Total Marketings</u> (000 head)	<u>Number Operations Reporting</u>	<u>Average Size of Operation</u>
1978	13,666	1,340	10,192
1977	11,212	1,336	8,392
1975	8,241	1,168	7,053

TABLE 2. GROWTH IN NUMBER OF OPERATIONS BY SIZE OF OPERATION

Marketing Size Class For Each <u>Year</u>	<u>Number of Operations</u>			<u>Percent of Operations</u>		
	<u>1975</u>	<u>1977</u>	<u>1978</u>	<u>1975</u>	<u>1977</u>	<u>1978</u>
≥15,000	80	112	161	6.9%	8.3%	12.0%
7,000-14,999	333	458	623	28.5	34.3	46.5
5,000-6,999	293	424	491	25.0	31.8	36.7
< 5,000 <sup>a/</sup>	<u>462</u>	<u>342</u>	<u>65</u>	<u>39.6</u>	<u>25.6</u>	<u>4.8</u>
Total	1,168	1,336	1,340	100.0	100.0	100.0

<sup>a/</sup> An operation qualified for this group by marketing 5,000 or more head in any year of the three. Because of variations in numbers marketed, there were some firms each year that were below 5,000.

TABLE 3. GROWTH IN MARKETINGS BY SIZE OF OPERATION

Marketing Size Group For Each Year	Total Marketings (000 head)			Percent of Marketings by Size		
	<u>1975</u>	<u>1977</u>	<u>1978</u>	<u>1975</u>	<u>1977</u>	<u>1978</u>
≥15,000	2,081	3,216	4,866	25.3%	28.7%	35.6%
7,000-14,999	3,056	4,348	5,826	37.1	38.8	42.7
5,000-6,999	1,627	2,404	2,776	19.7	21.4	20.3
<5,000	<u>1,477</u>	<u>1,244</u>	<u>193</u>	<u>17.9</u>	<u>11.1</u>	<u>1.4</u>
Total	8,241	11,212	13,661 <sup>a/</sup>	100.0	100.0	100.0

a/ Total does not agree with the total in Table 1 because of incomplete data from some respondents.

TABLE 4. LEGAL-ECONOMIC ORGANIZATION, 1977

<u>Type</u>	<u>Number</u>	<u>Percentage</u>
Corporate	791	57.9%
Sub-chapter S	(293)	(21.4)
Regular	(293)	(21.4)
Cooperative	(45)	(3.4)
Undetermined	(160)	(11.7)
Individual	313	22.9
Partnership	252	18.4
Undetermined and other	<u>11</u>	<u>0.8</u>
	1,367	100.0

Note: There are usually a few who omit answers to one or more questions. Such omissions explain why total number of operations or of marketings may vary slightly from one table to another.

TABLE 5. REGIONAL DISTRIBUTION OF LARGE VOLUME OPERATIONS AND MARKETINGS, 1978

<u>Region</u>	<u>Operations</u>		<u>Marketings</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Totals (000)</u>	<u>Percentage</u>
West North Central	498	37.2%	4,259	31.2%
East North Central	393	29.3	3,156	23.1
Northeast	20	1.5	139	1.0
Southeast	217	16.2	3,335	24.4
South Central	125	9.3	1,659	12.2
West	87	6.5	1,113	8.1
Total	1,340	100.0	13,661	100.0

West North Central: North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, and Missouri.

East North Central: Wisconsin, Illinois, Indiana, and Ohio.

Northeast: Vermont, New York, Pennsylvania, West Virginia, Maine, New Hampshire, Maryland, Connecticut, New Jersey, Massachusetts, and Delaware, Rhode Island.

Southeast: Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, and Florida.

South Central: Arkansas, Louisiana, Oklahoma, and Texas.

West: Washington, Montana, Idaho, Oregon, Wyoming, California, Nevada, Utah, Arizona, Colorado, and New Mexico.

TABLE 6. ESTIMATES OF LARGE VOLUME OPERATIONS IN LEADING STATES, 1977

<u>State</u>	<u>Number of Operations</u>	<u>Total Marketings (000 head)</u>
Iowa	214	1,401
Illinois	185	1,392
North Carolina	134	2,051
Indiana	121	804
Kansas	101	748
Nebraska	98	728
Total	853	7,124

TABLE 7. FARROWING BY SIZE GROUP OF MARKETINGS, 1977

Marketing Size Group	Totals		Percentage (2) of (1)	Average Size of Operations		Percentage (4) of (3)	Percentage Doing Any Farrowing
	(1) Marketed	(2) Farrowed		(3) Marketed	(4) Farrowed		
Less than 7,000	3,648,000	2,909,000	79.7%	4,762	4,617	97.0%	82.3%
7,000 to 14,999	4,347,000	3,561,000	81.9	9,495	9,110	95.9	85.4
15,000 and more	<u>3,215,000</u>	<u>2,252,000</u>	<u>70.0</u>	<u>28,780</u>	<u>26,535</u>	<u>92.2</u>	<u>75.9</u>
Total	11,210,000	8,722,000	Avg. 77.8	Avg. 8,392	Avg. 7,888	Avg. 94.0	Avg. 82.8

Note: Farrowings are underestimated because the questionnaire equated farrowings with marketings, making no provision for death losses.

TABLE 8. COMPARISON OF MARKETINGS AND FARROWINGS BY SIZE GROUP, 1977

<u>Size Group</u>	<u>Percentage</u>	
	<u>Marketings</u>	<u>Farrowings</u>
Less than 7,000	32.5%	33.4%
7,000 to 14,999	38.8	40.8
15,000 and more	<u>28.7</u>	<u>25.8</u>
Total	100.0	100.0

TABLE 9. GROWTH IN MARKETINGS OF LARGE VOLUME PRODUCERS BY CATEGORY, 1975-78

<u>Year</u>	<u>Marketings</u> (000 head)			<u>Percentage of</u> <u>Total Marketings</u>			<u>Total</u>
	<u>Slaughter</u>	<u>Feeder</u>	<u>Breeding</u>	<u>Slaughter</u>	<u>Feeder</u>	<u>Breeding</u>	
	<u>Hogs</u>	<u>Pigs</u>	<u>Stock</u>	<u>Hogs</u>	<u>Pigs</u>	<u>Stock</u>	
1975	6,601	1,427	188	80.3%	17.4%	2.3%	100.0
1977	8,556	2,314	306	76.6	20.7	2.7	100.0
1978	10,271	2,917	424	75.5	21.4	3.1	100.0

TABLE 10. MARKETINGS OF LARGE VOLUME PRODUCERS BY REGION BY CATEGORY, 1977

<u>Region</u>	<u>Feeder</u> <u>Pigs</u>	<u>Slaughter</u> <u>Hogs</u>	<u>Breeding</u> <u>Stock</u>	<u>All Hogs</u>	<u>Feeder Pigs +</u> <u>All Hogs</u>
West North Central	1,425	1,961	134	3,520	40.5
East North Central	331	2,281	105	2,717	12.2
Northeast	47	51	18	116	40.5
Southeast	223	2,386	16	2,625	8.5
South Central	80	1,171	16	1,267	6.3
West	208	706	22	936	22.2

TABLE 11. MARKETINGS OF FEEDER PIGS BY CORPORATIONS, 1977

	<u>Number</u>	<u>Percent</u>
<u>Ownership:</u>		
Family	304,391	17.9%
Non-family	1,023,547	60.2
No response	<u>372,712</u>	<u>21.9</u>
Total	1,700,650	100.0
<u>Legal Organization:</u>		
Sub-chapter S	761,544	44.8
Regular	426,611	25.1
Cooperative	286,224	16.8
No response	<u>226,271</u>	<u>13.3</u>
Total	1,700,650	100.0
<u>Specialization:</u>		
Farrowing	1,088,601	64.0
Non-farrowing	236,127	13.9
No response	<u>375,922</u>	<u>22.1</u>
Total	1,700,650	100.0

TABLE 12. MARKETINGS OF BREEDING STOCK BY CORPORATION, 1977

	<u>Number</u>	<u>Percent</u>
<u>Ownership:</u>		
Family	82,926	36.5%
Non-family	60,226	26.5
No response	<u>84,088</u>	<u>37.0</u>
Total	227,240	100.0
<u>Legal Organization:</u>		
Sub-chapter S	56,004	24.6
Regular	132,478	58.3
Cooperative	3,644	1.6
No response	<u>35,114</u>	<u>15.5</u>
Total	227,240	100.0
<u>Specialization:</u>		
Farrowing	18,585	8.2
Non-farrowing	80,531	35.4
No response	<u>128,124</u>	<u>56.4</u>
Total	227,240	100.0

TABLE 13. DISTRIBUTION OF MARKETINGS AND PURCHASES BY SIZE CLASS, 1977

Size Class	Marketings				Purchases
	All Hogs	Slaughter Hogs	Feeder Pigs	Breeding Stock	Feeder Pigs
≥ 15,000	28.7%	33.4%	12.2%	24.9%	38.7%
7,000-14,999	38.8	33.8	56.3	42.5	31.6
< 7,000	<u>32.5</u>	<u>32.8</u>	<u>31.5</u>	<u>32.6</u>	<u>29.7</u>
	100.0	100.0	100.0	100.0	100.0

TABLE 14. PROPORTION OF OPERATIONS CHANGING SIZE OF MARKETINGS

	Larger	Same	Smaller	Total
1975 compared to 1965	94.6%	3.1%	2.3%	100.0%
1977 compared to 1975	72.4	11.7	15.9	100.0
1978 compared to 1977	72.3	18.1	9.6	100.0

Note: All marketings rounded to hundreds for comparison; 1978 marketings are plans as of early 1978.

TABLE 15. GROWTH RATE BY AGE OF OPERATION

Date Operation Began	Number of operations	Marketings						
		Average Size			Growth in Average Size			
		1975	1977	1978	1975-77	Percent Change	1977-78	Percent Change
Before 1965	433	6,751	7,963	9,348	1,212	17.9%	1,385	17.4%
1965-67	78	8,565	9,428	11,944	917	10.7	2,462	26.0
1968-70	188	8,597	9,821	10,919	1,224	14.2	1,098	11.2
1971-73	199	7,340	8,517	10,039	1,177	16.0	1,522	17.9
1974-75	165	5,187	7,150	8,651	1,963	37.7	1,501	21.0

Note: Firms marketing 50,000 or more head are omitted because of their possible distortion of the averages. Firms are omitted if they did not provide marketings for all three years.

TABLE 16. GROWTH RATE BY SIZE OF OPERATION

<u>1977 Size</u>	<u>Average Size</u>			<u>Growth in Average Size</u>			
	<u>1975</u>	<u>1977</u>	<u>1978</u>	<u>1975-77</u>		<u>1977-78</u>	
				<u>△</u>	<u>% △</u>	<u>△</u>	<u>% △</u>
< 7,0000	4,257	4,773	6,106	516	12.1%	1,333	27.9%
7,000-9,999	6,555	8,007	8,958	1,452	22.2	951	11.9
10,000-14,999	9,151	11,452	12,795	2,301	25.1	1,343	11.7
≥ 15,000	22,249	29,591	35,634	7,342	33.0	6,043	20.4
≥ 15,000 <sup>a/</sup>	17,973	21,617	23,966	3,644	20.3	2,349	10.9

a/ This category omits firms marketing 50,000 or more head while the previous row includes those firms. Firms not providing marketing data for all three years are not included in this table.

TABLE 17. ADVANTAGES OF LARGE SIZE OPERATIONS

<u>Advantages</u>	<u>Percentage of Total Units Responding</u>
I. Economic Efficiency	
Labor and capital utilization	35.4%
Specialized labor and management	15.4
Feed efficiency	6.9
Better use of breeding stock	2.0
II. Pricing and Other Advantages	
Better prices in buying and selling	27.6
Other advantages	10.0
Constant and orderly marketing	7.8
Good source of income	4.8
No advantages to size	2.6
Constant cash flow	2.4

TABLE 18. DISADVANTAGES OF LARGE SCALE OPERATIONS

<u>Disadvantages</u>	<u>Percentage of Total Units Responding</u>
Labor availability and quality	27.4%
Disease	22.2
High level of management required	18.1
Other disadvantages	11.3
Large capital requirements	7.4
Pollution controls	6.1
High fixed costs	5.9
Less attention to details	4.1
High risk	3.3
Too few days off	1.6

TABLE 19. WOULD EXPANSION OF YOUR OPERATION INCREASE OR DECREASE PROFITS PER HEAD?

<u>Responses</u>	<u>All Operations</u>	<u>Operations by Size of Marketing</u>		
		<u>&lt; 7,000</u>	<u>7,000- 14,999</u>	<u>≥15,000</u>
Increase	32.5%	31.3%	33.1%	28.6%
Decrease	20.3	21.5	19.2	19.0
No change	<u>47.2</u>	<u>47.1</u>	<u>47.7</u>	<u>52.4</u>
	100.0	100.0	100.0	100.0

TABLE 20. MARKETING CHANNELS OF SLAUGHTER HOGS

Size of Operation	Volume by Channel				
	Packing Plant	Buying Point	Terminal	Other	Total
< 7,000	63.7%	28.7%	7.2%	0.4%	100.0%
7,000-14,999	73.5	18.9	6.7	0.9	100.0
≥15,000	94.9	3.2	1.8	0.1	100.0
----- All sizes	77.5	16.8	5.2	0.5	100.0

TABLE 21. PRICING METHODS OF SLAUGHTER HOGS

Size of Operation	Percent Volume by Selling Weight Measurement			Percent Volume by Timing of Sale		
	Live	Carcass	Total	At	Previous	Total
				Delivery	Contract	
< 7,000	70.7%	29.3%	100.0%	81.7%	18.3%	100.0%
7,000-14,999	72.9	27.1	100.0	89.8	10.2	100.0
≥15,000	82.9	17.1	100.0	83.3	16.7	100.0
----- All Operations	75.6	24.4	100.0	84.4	15.6	100.0

TABLE 22. CHANNELS OF FEEDER PIG MOVEMENT

Channel	Channel Distribution by Pig Volume	
	Purchases	Sales
Producer to Producer	40.6%	87.5%
Auctions	40.3	8.4
Dealers	18.2	4.1
Other	0.9	---
	100.0	100.0

TABLE 23. TYPES OF FACILITIES UTILIZED BY LARGE VOLUME PRODUCERS

	<u>U.S.</u>	<u>W.N.C.</u>	<u>N.E. and E.N.C.</u>	<u>S.E.</u>	<u>S.C.</u>	<u>W.</u>
Total confinement, environmental control	63.3%	67.4%	75.8%	45.1%	35.9%	53.8%
Total confinement, natural ventilation	23.9	22.3	27.5	22.5	12.8	34.6
Total confinement env. control, winter; nat. vent., summer	16.5	17.1	13.4	19.7	23.1	11.5
Open front, concrete floor	37.2	36.6	35.6	36.6	46.2	38.5
Dirt lots, some shelter	26.7	24.6	20.1	42.3	33.3	26.9
Other	2.8	2.3	4.7	-0-	2.6	3.8

Note: Indicates percent of reporting operations in the U.S. or in that region utilizing that type of facility.

TABLE 24. WASTE HANDLING METHODS OF LARGE VOLUME PRODUCERS

	Percent of Reporting Operations Utilizing						
	<u>U.S.</u>	<u>W.N.C.</u>	<u>E.N.C.</u>	<u>N.E.</u>	<u>S.E.</u>	<u>S.C.</u>	<u>W.</u>
Solid waste	30.2%	29.1%	38.9%	57.1%	22.8%	28.6%	14.3%
Liquid, total slats	28.3	19.2	44.4	14.3	40.4	21.4	14.3
Liquid, partial slats	63.4	71.4	63.0	42.9	43.9	61.9	63.0
Liquid, flush system	23.6	19.8	22.2	28.6	29.8	16.7	50.0
Other	10.8	9.9	10.2	-0-	21.1	11.9	-0-

TABLE 25. WORST PROBLEMS IN FARROWING HOUSE

<u>Worst Problems</u>	<u>Percent of Reporting Operations by Size Group</u>			
	<u>U.S.</u>	<u>&lt; 7,000</u>	<u>7,000-14,999</u>	<u>≥15,000</u>
E. coli scours	49.8%	49.6%	49.7%	46.4%
MMA in sows	16.0	18.5	12.8	7.1
Stillborn pigs	12.9	13.0	12.8	14.3
Baby pig starvation	21.7	22.3	22.1	14.3
Ventilation problems	18.1	17.6	18.8	14.3
Waste disposal	7.1	6.7	8.1	3.6
Crushing baby pigs	24.0	23.5	26.2	17.9
Other	9.8	10.5	6.7	21.4

TABLE 26. ROUTINE MANAGEMENT PRACTICES WITH  
PURCHASED FEEDER PIGS

<u>Practice</u>	<u>Percent of Respondents Doing</u>
Worm	94.2%
Spray for lice, mange	82.5
Vaccinate for erysipelas	58.3
Medicate feed and/or water	22.5
Other	10.9

TABLE 27. LARGE VOLUME OPERATIONS PRODUCING FEED GRAINS

Percent of Feed Grain Needs for Hogs Grown on Operation	Percentage of Operations					
	U.S.	W.N.C.	E.N.C.	S.E.	S.E.	W.
0%	21.6%	28.6%	8.6%	17.9%	50.0%	26.7%
1 - 49	24.3	25.2	15.5	39.3	27.3	26.7
50 - 99	25.5	26.1	29.3	26.8	9.1	20.0
100	28.6	20.1	46.6	16.0	13.6	26.6
	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 28. NATIONAL MARKETINGS OF MEDIUM VOLUME HOG PRODUCERS

Year	Total Marketings	Number Operators Reporting	Average Size of Operation
1978 <sup>a/</sup>	5,307,940	1,661 <sup>b/</sup>	3,196
1977	4,678,771	1,682	2,782
1975	3,789,200	1,567	2,418

<sup>a/</sup> Projected by producers in early 1978.

<sup>b/</sup> A total of 1709 producers were represented in the survey. However, not all provided data for any given year, and some began operation after 1975.

TABLE 29. GROWTH IN NUMBER OF OPERATIONS BY SIZE OF OPERATION

Marketing Size Class for Each Year	Number of Operations			Percentage of Operations		
	1975	1977	1978	1975	1977	1978
4,000-4,999	121	194	402	7.7%	11.5%	24.2%
3,000-3,999	284	493	687	18.2	29.3	41.4
Below 3,000 <sup>a/</sup>	1,162	995	572	74.1	59.2	34.4
	1,567	1,682	1,661	100.0	100.0	100.0

<sup>a/</sup> An operation qualified for the medium volume group by marketing 2,500 to 4,999 hogs in any year of the three. Because of general growth over the period, many qualifying firms marketed less than 3,000, and even less than 2,500, hogs in 1975.

TABLE 30. GROWTH IN MARKETINGS BY SIZE OF MEDIUM VOLUME OPERATIONS

Marketing Size Class for Each Year	Total Marketings (000 head)			Percent of Marketings by Size		
	1975	1977	1978	1975	1977	1978
4,000-4,999	522	812	1,709	13.8%	17.3%	32.2%
3,000-3,999	914	1,618	2,248	24.1	34.6	42.4
Below 3,000	<u>2,353</u>	<u>2,249</u>	<u>1,351</u>	<u>62.1</u>	<u>48.1</u>	<u>25.4</u>
Totals	3,789	4,679	5,308	100.0	100.0	100.0

TABLE 31. LEGAL ECONOMIC ORGANIZATION OF MEDIUM VOLUME OPERATIONS

Type	Number	Percentage
Corporation	381	22.3
Sub-chapter S	(166)	(9.7)
Regular	(142)	(8.3)
Cooperative	(6)	(0.4)
Undisclosed	(67)	(3.9)
Individual	829	48.5
Partnership	490	28.7
Other and undisclosed	<u>9</u>	<u>0.5</u>
Totals	1,709	100.0

TABLE 32. REGIONAL DISTRIBUTION OF MEDIUM VOLUME PRODUCERS AND MARKETINGS

	<u>Operations</u>		<u>Marketings</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Totals</u> (000)	<u>Percentage</u>
West North Central	723	42.3%	2,255	42.5%
East North Central	584	34.2	1,834	34.6
Northeast	15	0.9	52	1.0
Southeast	181	10.6	572	10.8
South Central	130	7.6	375	7.0
West	<u>76</u>	<u>4.4</u>	<u>220</u>	<u>4.1</u>
Totals	1,709	100.0	5,308	100.0

Note: WNC states are the Dakotas, Nebraska, Kansas, Missouri, Iowa, and Minnesota; ENC states are Michigan, Wisconsin, Illinois, Indiana, and Ohio.

TABLE 33. ESTIMATES OF MEDIUM VOLUME OPERATIONS IN LEADING STATES, 1977

<u>State</u>	<u>Number of</u> <u>Operations</u>	<u>Total</u> <u>Marketings</u> (000 head)
Iowa	330	856
Illinois	272	754
Indiana	163	452
Minnesota	103	319
Kansas	97	293
North Carolina	<u>94</u>	<u>250</u>
Totals	1,059	2,924

TABLE 34. FARROWINGS COMPARED TO MARKETINGS, 1977

	(1) <u>Marketed</u>	(2) <u>Farrowed</u>	Percentage (2) of (1)
Totals (000 head)	4,679	3,672	78.5%
Average size of operation	2,782	2,692	96.8%
Percentage of operations doing any farrowing -----	81.1%		

TABLE 35. GROWTH IN MARKETINGS BY CATEGORY, 1975-78

<u>Year</u>	<u>Marketings (000 head)</u>				<u>Percentage of Total Marketings</u>			
	<u>Slaughter Hogs</u>	<u>Feeder Pigs</u>	<u>Breeding Stock</u>	<u>Total</u>	<u>Slaughter Hogs</u>	<u>Feeder Pigs</u>	<u>Breeding Stock</u>	<u>Total</u>
1978	4,408	772	127	5,307	83.1	14.5	2.4	100.0
1977	3,872	686	120	4,678	82.8	14.7	2.5	100.0
1975	3,270	425	94	3,789	86.3	11.2	2.5	100.0

TABLE 36. DISTRIBUTION OF MARKETINGS BY REGION AND CATEGORY, 1977

<u>Region</u>	<u>Slaughter Hogs</u>	<u>Feeder Pigs</u>	<u>Breeding Stock</u>	<u>All Hogs</u>	<u>Feeder Pigs ÷ All Hogs</u>
West North Central	41.0%	53.4%	49.5%	42.5%	18.2%
East North Central	35.9	27.3	28.9	34.6	11.7
Northeast	0.9	0.0	5.2	1.0	0.0
Southeast	10.3	11.0	8.9	10.8	15.5
South Central	7.6	5.7	5.6	7.0	11.5
West	<u>4.3</u>	<u>2.6</u>	<u>1.9</u>	<u>4.1</u>	9.7
Totals	100.0	100.0	100.0	100.0	

TABLE 37. MARKETINGS OF MEDIUM VOLUME PRODUCERS BY ORGANIZATIONAL TYPE, 1977

Organizational Type	Number of Operations Marketing			Total Marketings (000 head)		
	Slaughter	Feeder	Breeding	Slaughter	Feeder	Breeding
	<u>Hogs</u>	<u>Pigs</u>	<u>Stock</u>	<u>Hogs</u>	<u>Pigs</u>	<u>Stock</u>
Individual	741	239	245	1,732	392	45
Partnership	445	118	178	1,128	207	51
Corporate	357	60	118	992	84	23
Family corp.	(260)	(48)	(97)	(727)	(69)	(19)
Non-family corp.	(70)	(6)	(15)	(194)	(8)	(3)
Other <sup>a/</sup>	(57)	(6)	(6)	(71)	(14)	<u>b/</u>

<sup>a/</sup> Corporation lacking data as to whether family or non-family ownership.

<sup>b/</sup> Less than 1,000 head.

TABLE 38. DISTRIBUTION OF MARKETINGS AND PURCHASES OF MEDIUM VOLUME PRODUCERS BY ORGANIZATIONAL TYPE, 1977

Organizational Type	Marketings			Purchases
	Slaughter <u>Hogs</u>	Feeder <u>Pigs</u>	Breeding <u>Stock</u>	Feeder <u>Pigs</u>
Individual	44.7%	57.2%	37.4%	57.8%
Partnership	29.1	30.2	41.9	23.6
Corporate	25.6	12.2	18.9	18.6
Other	<u>0.6</u>	<u>0.4</u>	<u>1.8</u>	<u>0.0</u>
Totals	100.0	100.0	100.0	100.0

TABLE 39. CHANNELS OF FEEDER PIG MOVEMENT, MEDIUM VOLUME PRODUCERS, 1977

<u>Channel</u>	<u>Channel Distribution by Volume</u>	
	<u>Purchases</u>	<u>Sales</u>
Producer to producer	38.6%	63.5%
Auctions	25.9	33.9
Dealers	28.2	2.6
Other	<u>7.3</u>	<u>0.0</u>
Totals	100.0	100.0

TABLE 40. PROPORTION OF MEDIUM VOLUME OPERATIONS CHANGING SIZE OF MARKETINGS

	<u>Larger</u>	<u>Same</u>	<u>Smaller</u>	<u>Total</u>
1975 compared to 1965	94.0%	2.7%	3.3%	100.0%
1977 compared to 1975	66.5	12.2	21.3	100.0
1978 compared to 1977	66.3	22.0	11.7	100.0

Note: All marketings rounded to hundreds for comparisons; 1978 marketings are plans as of early 1978.

TABLE 41. GROWTH RATE OF MARKETINGS BY AGE OF OPERATION

Date Operation <u>Began</u>	Number of <u>Operations</u>	<u>Average Marketings</u>			<u>Growth in Average Size</u>			
		<u>1975</u>	<u>1977</u>	<u>1978</u>	<u>1975-77</u>	<u>Percent Change</u>	<u>1977-78</u>	<u>Percent Change</u>
Before 1965	702	2,429	2,806	3,156	377	15.5%	350	12.5%
1965-67	151	2,579	2,856	3,262	277	10.7	406	14.2
1968-70	221	2,552	2,858	3,252	306	12.0	394	13.8
1971-73	200	2,297	2,753	3,290	456	19.9	537	19.5
1974-75	127	2,095	2,829	3,220	734	35.0	391	13.8

TABLE 42. ADVANTAGES OF MEDIUM SIZE OPERATIONS COMPARED TO SMALLER OPERATIONS

<u>Advantages</u>	<u>Percentage of Total Units Responding</u>
I. Economic Efficiency:	
Labor and capital utilization	39.3%
Specialized labor and management	8.3
Feed efficiency	8.1
Better use of breeding stock	1.6
II. Pricing and Other Advantages:	
Better prices in buying and selling	24.6
Constant and orderly marketing	11.0
Good source of income	8.3
Other advantages	7.2
Constant cash flow	5.4
No advantages to size	1.4

TABLE 43. DISADVANTAGES OF MEDIUM SCALE OPERATIONS COMPARED TO SMALLER ONES

<u>Disadvantages</u>	<u>Percentage of Total Units Responding</u>
Disease	20.5%
Labor availability and quality	18.8
High level of management required	16.3
Other disadvantages	12.4
Too few days off	7.8
Large capital requirements	6.6
High fixed costs	6.2
High risk	6.2
Pollution controls	4.5
Less attention to details	4.1



TABLE 46. MARKETING CHANNELS OF SLAUGHTER HOGS FOR MEDIUM VOLUME OPERATIONS

<u>Channel</u>	Distribution of Marketings by Channel	<u>Percent of Operations Making</u>	
		<u>Sale Use of Channel</u>	<u>Zero Use of Channel</u>
Packing plant	42.7%	27.8%	49.0%
Buying point	40.7	29.0	48.4
Terminal	14.4	10.5	75.8
Other	<u>2.2</u>		
	100.0		

TABLE 47. PRICING METHODS OF SLAUGHTER HOGS BY REGION, MEDIUM VOLUME OPERATIONS

	<u>Percentage Marketings by Selling Weight Used</u>			<u>Percentage Marketings by Timing of Sale</u>		
	<u>Live</u>	<u>Carcass</u>	<u>Total</u>	<u>At Delivery</u>	<u>Previous Contract</u>	<u>Total</u>
	Nation	72.0%	28.0%	100.0%	95.3%	4.7%
W.N.C.	57.0	43.0	100.0	96.0	4.0	100.0
E.N.C.	79.6	20.4	100.0	95.8	4.2	100.0
N.E.	80.4	19.6	100.0	100.0	0.0	100.0
S.E.	93.0	7.0	100.0	91.9	8.1	100.0
S.C.	78.0	22.0	100.0	88.9	11.1	100.0
W.	90.1	9.9	100.0	100.0	0.0	100.0

TABLE 48. TYPE OF FACILITIES UTILIZED

<u>Facilities</u>	<u>U.S.</u>	<u>W.N.C.</u>	<u>N. E. and E.N.C.</u>	<u>S.E.</u>	<u>S.C.</u>	<u>W.</u>
Total confinement, environmental control	54.0%	56.1%	60.1%	34.1%	38.1%	52.6%
Total confinement, natural venti- lation	24.9	21.9	28.0	25.0	35.3	10.5
Total confinement, env. control winter, natural vent. summer	14.8	16.8	11.9	20.5	11.8	10.5
Open front, concrete floor	47.7	56.6	42.9	45.5	38.2	21.1
Dirt lots, some shelter	30.6	32.1	27.4	31.8	41.2	21.1
Other	6.1	6.1	7.7	0.0	2.9	10.5

Note: Indicates percent of reporting operations in the U.S. or in that region utilizing that type of facility; most operations reported more than one type of facility.

TABLE 49. WASTE HANDLING METHODS

<u>Method</u>	<u>Percent</u>
Solid waste	44.0%
Liquid, total slats	29.1
Liquid, partial slats	59.1
Liquid, flush system	17.7
Lagoon and other	0.4

Note: Some operations reported more than one waste handling method.



1. Your operation is an: (check one)

- Individually owned operation
- Partnership (family or otherwise)
- Corporation
- Other, please specify: \_\_\_\_\_

a. If operation is incorporated, it is:

- (1) check one:  owned entirely in a family;  owned by non-related people;
- (2) check one:  Subchapter S;  Regular corporation;  Cooperative;
- (3) check one: feeder pig farrowing corp. or coop?  yes  no.

b. If hog operation is part of an AGRIBUSINESS operation, what is the primary non-farming business? (feed company, etc.)

c. If this operation is only one unit of several owned or contracted by a larger firm, indicate the nature of the overall operation.

2. How many hogs and pigs were marketed by this operation back in 1975 and also last year; and how many do you plan to market in 1978?

	<u>Market Hogs</u>	<u>Feeder Pigs</u>	<u>Breeding Stock</u>	<u>Total Marketed</u>
1975:	_____	_____	_____	_____
(Skip 1976)	_____	_____	_____	_____
1977:	_____	_____	_____	_____
Plans for 1978:	_____	_____	_____	_____

a. How many of those hogs and pigs marketed in 1977 were farrowed on this operation?

\_\_\_\_\_

b. If you happen to be strictly a dealer in pigs and hogs, and feeding is only incidental to your trading, write dealer here.

\_\_\_\_\_

3. How many hogs did you market from this operation in 1965? \_\_\_\_\_

a. What year did this operation begin marketing hogs? (If it goes back many years, please indicate an approximate date).

\_\_\_\_\_

4. Of the feed grain fed to your hogs, what percent is grown on your operation? \_\_\_\_\_%  
If you use anything other than corn as a major feed component, please indicate what it is \_\_\_\_\_.

5. What type of facilities are used by this operation for market hogs?

- Total confinement, environmental control
- Total confinement, natural ventilation
- Total confinement, environmental control in winter, natural in summer
- Open front, concrete floor
- Dirt lots, some shelter
- Other, please specify: \_\_\_\_\_

6. What type of waste handling is employed?

- Solid waste
- Liquid manure, total slatted floors
- Liquid manure, partial slats
- Liquid manure, flush system
- Other, please specify: \_\_\_\_\_

7. What do you consider your worst farrowing house problems? (check two)

- E. Coli scours
- MMA in sows
- Stillborn pigs
- Baby pig starvation
- Ventilation problems
- Waste disposal
- Crushing baby pigs
- Other, please specify: \_\_\_\_\_

8. What are the major advantages to an operation of this size compared to a smaller operation?

\_\_\_\_\_

\_\_\_\_\_

9. What are major disadvantages?

\_\_\_\_\_

\_\_\_\_\_

10. Would you expect a sizeable expansion of your production to cause your profits per head to  increase;  decrease;  stay the same?

SLAUGHTER HOG INFORMATION (SKIP to next section if you do not sell market hogs)

1. What percent of 1977 slaughter hogs moved to market by the following methods:

- Direct to packing plant: \_\_\_\_\_%
- To local hog buyer; buying station: \_\_\_\_\_%
- To terminal market: \_\_\_\_\_%
- Other, please specify: \_\_\_\_\_%
- 100%

2. Of your 1977 slaughter marketings, what percent were priced:

- Live weight \_\_\_\_\_%
- Carcass weight \_\_\_\_\_%
- 100%

3. What percent were sold by forward contract or agreement made a month or more prior to delivery? \_\_\_\_\_%

4. What percent of your market hogs were hedged in 1977 directly on the futures market? (Do not include arrangements with packers.) \_\_\_\_\_%

5. Do you market hogs: (check one)

- at set times (say every Tuesday) without regard to daily price behavior?  
 by studying daily price behavior and trying to hit the highs?  
 by contracting ahead and shipping when they are at right weight?  
 other (specify) \_\_\_\_\_?

FEEDER PIG PURCHASES (SKIP to next section if you did not purchase feeder pigs in 1977)

1. What percent of the feeder pigs purchased in 1977 were purchased from:

Feeder pig dealers? \_\_\_\_\_ %  
 Auction market? \_\_\_\_\_ %  
 Direct from producers? \_\_\_\_\_ %  
 Other, please specify: \_\_\_\_\_ %  
 \_\_\_\_\_ 100 %

a. What percent of feeder pigs purchased were bought on contract? \_\_\_\_\_ %

2. What management practices are routinely followed when pigs arrive at your operation?

- Vaccinated for erysipelas  
 Wormed  
 Sprayed for lice, mange  
 Other, specify (vaccination, etc.): \_\_\_\_\_

FEEDER PIG SALES (OMIT this section if you did not sell feeder pigs in 1977)

1. In 1977, what percent of your feeder pigs were sold:

Feeder pig auction? \_\_\_\_\_ %  
 Feeder pig dealers? \_\_\_\_\_ %  
 Direct to feeders? \_\_\_\_\_ %

a. What percent of pigs were sold on contractual arrangement? \_\_\_\_\_ %

b. If a pig farrowing corporation, what percent of pigs were delivered to owners of the corporation or cooperative? \_\_\_\_\_ %

THANK YOU