U.S. Contract Production of Hogs

by

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Introduction

Contract production of hogs is not new. Contract production of broilers swept the industry in the 1950s, and the idea was tried in swine in the early 1950s, if not earlier.[1] In a two-day session on animal agriculture held at Purdue in 1957, there appeared to be a consensus that the hog industry would soon follow the contract integration of broilers. Some observers were also suggesting, at that session, that hog production would geographically follow broilers to the East Coast and the South.[2] Contract production of hogs has grown to a substantial size in selected areas such as North Carolina and Arkansas during the past 30-40 years. However, various attempts at contract production in the Corn Belt, the

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[1]Wallace's Farmer, "Take Gilts on Shares?" Oct. 15, 1955, p. 22; Better Farming Methods," All Signs Point to Contract Hog Farming," Apr. 1958, p. 26.

[2]Gerald Engelman's comments in R. E. Schneidau and Lawrence Duewer, eds., Symposium: Vertical Coordination in the Pork Industry. Westport, CT: The Avi Publ. Co. 1972, pp. 240-253.

heartland of hog production, were frequently short-lived during the 50s, 60s and 70s. The farm crisis of the early 1980s provided a more fertile ground for contract production in the hard-hit Corn Belt. The considerable interest shown currently in hog contracting in the industry press and by various industry groups is reminiscent of the mid-50s.

Growers (contractees) typically provide the care of animals in their own facilities using feed furnished by the contractor who provides and owns the animals. Growers are typically rewarded by fees that reflect the volume of their "production." In broilers, those fees are typically per bird, or per pound of birds, raised to slaughter size.[3] The size of fees are not dependent in the short term on market prices of the contracted poultry or hogs, so the grower is insulated from the risk of big losses in a down market or big profits in an up market.

Contract production of hogs should not be confused with contract marketing. The latter is a <u>modification</u> of the usual method of market exchange of hogs that in which participants make a deal and establish price some days or weeks before delivery. Contract production <u>replaces</u> market exchange of hogs with an agreement for a grower to furnish labor and facilities to a contractor.

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[3]Paul Aho, "Broiler Grower Contracts in the United States," <u>Broiler Industry</u>, Oct. 1988, p. 26.

A contractor can maximize his production per unit of capital because he may own few, or no, fixed facilities. In any time period when there is relative over-capacity of facilities, a contractor may be able to obtain access to additional facilities more cheaply than conventional producers. The farm crisis of the 1980s was a period in which numerous producers in the Corn Belt were not able and/or willing to finance continued hog production. Their facilities and labor may frequently have become available to contractors at bargain-basement prices. Thus, one of the pressing questions that we try to examine is the extent to which the growth of contract production in the 1980s may reflect a transitory situation in the availability of growers and their facilities.

Contract production is a personal relationship that cannot be covered adequately by the terms of a contract. Mutual satisfaction depends considerably upon the quality of the inputs provided by the contractor; the quality of the facilities, management and labor provided by the growers; and the chemistry of the personal interactions between the grower and the contractor (or his field supervisor). In the short term, a grower transfers market risk to the contractor. However, in the long term, a grower's risks may be greater. The grower who invests many thousands of dollars in modifying or building facilities is particularly vulnerable to a cessation of contractor-provided hogs before the grower recoups his investment. Thus, another pressing question is how well these relationships seem to be going.

The purpose of this research was to ascertain with reasonable accuracy the current status of contract hog production in the United States. We were able to obtain in early 1989 a sample of 4,860 usable questionnaires from hog producers in 46 states. These responses were from 11,149 producers who were mailed questionnaires by Pork 89.

Of the usable responses, 248 were from contractors: individuals and firms that place their breeding stock or pigs in other people's facilities for the production of pigs/hogs. Another 318 were from growers: people who take care of contractor-owned hogs in their own facilities for a fee, or occasionally a profit share. The five states with the most contractor responses were IA, MN, NC, PA and NE. The five states with the most grower responses were IA, NC, PA, AR, and MN. The remaining 4,294 responses were from independent producers. Each of the 3 types of producers had a questionnaire tailored to his situation. The only part of the independents' responses analyzed here are questions about their attitude toward contracting.

Summary

This research aims to provide the best publicly available information on the current status of contract production of hogs in the United States. It is based on a large sample of the thousands of medium and large size hog producers subscribing to a trade magazine, Pork 89 (a Vance publication). These producers marketed 500 or more pigs/hogs per year.

Contract production of hogs is not a new arrangement; it has been around for 30 years or more. The rather great expectations for it of 30 years ago have not been fulfilled except in selected areas outside the Corn Belt. The growth of contracting in the 1980s has aroused considerable interest again. Because we have been periodically examining the structure of the hog industry since the mid 70s[4], we thought it timely to examine carefully the status of production contracting.

The size distribution of contractors is skewed. While 1,023 contractors were estimated to be operating in early 1989, only 21 produced nearly one-half of the contract hogs. These 21 were designated as "large contractors" on the basis of each one marketing 50,000 or more hogs or feeder pigs in 1987 and/or 1988; most of the "big names" in contracting were included. The 1,002 "small contractors" included a large majority self-identified as producers (farmers) plus many in the feed business and some other agribusiness types.

About one-half of the estimated 1,900 growers were in the size categories of 500 to 1,999 head. However, about 1/4 of the grower market hogs (MH) and 1/3 of the grower feeder pigs (FP) were marketed by the larger growers that each marketed 10,000 head or more. This estimate of 1,900 is believed to be a serious under-

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[4]See, for example, the account of our 1987 survey in the October issue of Pork 87; and the summary of our 1984 survey in V. James Rhodes and Glenn Grimes, Medium Size and Larger U.S. Hog Producers, UMC Ag. Exp. Sta. Special Report 327, 1985. A few of the highlights of this study were reported in the November issue of Pork 89 and other highlights will appear in later issues.

estimate of the grower population. The typical grower is about 40 years of age, was once independent, and has been contracting for about 2 years.

Total contractor marketings of MH in 1988 were 6.8 million head from contract operations and 2.7 million from their own-production, making a total of 9.5 million head, which was 10.9% of U.S. slaughter of domestic produced hogs. It is certainly possible that there was another million head that was missed by the survey, which would suggest an upper limit of about 12% of U.S. slaughter. While 9.5 million head are lots of hogs, contracting as yet is not a major portion of hog production in the United States. Proportions higher than 12% exist in such states as North Carolina and Arkansas.

Some 87% of the contractors contracted pig finishing, 21% pig production, 15% farrow-to-finish and 3% the production of breeding stock. Obviously, several contracted for 2 or more types of production. While average contracts were bigger for pig production than finishing, total contractor volume was larger in finishing; thus, contractors purchase a sizable volume of feeder pigs.

A comparison of MH marketings of comparable contractors for 1987 and 1988 found that small contractors grew by 16% while large contractors grew by 8%. Small contractors expanded their own production by 10% and their contract production by 19% between 1987 and 1988. Large contractors apparently reduced their own production by 6% but expanded their contract production by 12%.

When asked how they expected their contract marketings to change by 1992, the large contractors were more bullish than the small, despite the fact that contract marketings of the small contractors expanded more rapidly 1987-88. None of the large contractors projected a reduction or cessation of contracting while 15% of the small ones did so. Large contractors appear to have a more permanent commitment to contract hog production than small contractors.

About 1/3 of the growers were required to build or modify facilities in order to obtain a contract. Such initial investments were more common for pig production and farrow-to-finish contracts than for finishing. Initial investments to obtain contracts were also more common for the larger contractors and for East Coast contractors (those 2 sets of contractors have considerable overlap).

Growers reported a rather large range in the lengths of their contracts but they averaged 15 months for finishing, 30 for pig production and 49 for farrow-to-finish. These averages are obviously much shorter than the time necessary for depreciating new facilities.

89% of growers said their contract income was enough to maintain adequately their hog buildings but only 36% thought it adequate to replace them. However, 47% of the strictly pig producers and 46% of the farrow-to-finishers thought they could replace compared to 24% of the finishers.

There appears to be considerable turnover among growers, although the evidence is not conclusive. Of the 1900 growers, 39% were relatively new at contracting (begun in 1987 or 1988). About 1/3 of the growers said they are now contracting with a different contractor than previously. Some 48% of the contractors reported that they had dropped one or more growers for poor performance.

Almost as many contractors (31%) as growers (39%) were relatively new at contracting. However, 3% of the contractors began in the 1960s and another 6% in the 1970s.

Contractor and grower attitudes toward contracting appeared positive. When asked to rate their satisfaction with contracting on a 6 point scale (6 = extremely satisfied and 1 = not at all satisfied) growers gave an average score of 4.5 and contractors averaged 4.0. An invitation to growers to complain about major problems with their contractors did not elicit many strong complaints. When asked if they worry about losing their contracts, 78% of the growers said no, and only 2% said they worry a lot.

Independents are much more negative toward production contracting than are the participants--the growers and contractors. When independents were asked if they would consider being growers, one-half checked the strongly negative answer of not under any circumstance. Only 1% were considering the idea but another 20% said they might consider it sometime.

Of the strongly opposed independents about 1/2 appeared opposed in principle to contract production as being bad for

farmers while the other half had more individual business reasons. Thus, about 1/4 of independents were opposed in principle to contract production of hogs.

Growers indicated a variety of reasons why they are growers rather than independents. About 25% indicated that financial conditions (lack of credit and other binds) motivated their contracting. Other reasons mainly focused on lower market risk and steadier incomes.

About 21% of the nation's growers had not operated as independents, but this percentage rose to 53 for the South Atlantic region (contains NC) and 69% for the South Central (contains AR). When asked if they wanted to become independent: 23% said they are partially independent now, 34% said yes, and 43% said no. The proportion of "no" was much higher outside the North Central region than in it. Only one in four growers expected to become independent within the next 3 years.

Most growers receive fees related to the volume of their contract production and often related also to their production efficiency as measured by pigs saved, death loss and feed conversion. Most contracts contain a base fee per head that is usually paid at time of marketing.

When asked the percentage of family income derived from contracting, grower answers varied from zero to 100 with an average of 33.5.

Contractors were asked to compare their average costs of production with efficient independents. A majority felt their costs were the same, while a few more thought their costs lower than thought them higher.

How viable and permanent is contract hog production? More of the information summarized above is positive than negative. On the positive side that supports the continued viability of contract hog production are the following:

(1) 9% of the contractors have been contracting 18 years or more,

(2) output plans of all large and most small contractors are to stay in operation at the same or a larger size,

(3) contractors expanded production strongly 1987 to 1988,

(4) the contractor-grower relationship appears healthy with lots of expressed satisfaction and few complaints, and

(5) contractors generally claim they are as efficient or more efficient than large independents.

On the questionable side is the response of 2/3 of the growers that their contract incomes won't cover the costs of replacing facilities. Are contract fees going to grow larger in the future as the current stock of grower facilities is depleted? Another question relates to possibly high turnover in the ranks of both growers and smaller contractors. Since those who exit the hog business tend to discontinue magazine subscriptions, we have no direct way of measuring exits. However, it is certainly possible that many growers, particularly, view contracting as a rather short-term episode. In sum, the positive points appear to out-

weigh the questions. Contract hog production appears to be a viable operation that will gradually increase its market share in the next few years. It's too early to tell whether contract production will eventually dominate the swine industry.

Procedures

We had learned from our 1987 survey that (1) the proportion of hog producers involved in contracting was relatively small and (2) the involved proportions rose with size of producers. Consequently, we planned for a much larger sample than would ordinarily be necessary and we sampled more heavily the larger producers.

The sample sizes were as shown in the following.

Size (Marketed Per Year)	Number of Hog Units in Magazine Classification	Sample Size
10,000 - more	903	903
5,000 - 9,999	1,909	1,909
3,000 - 4,999	3,545	2,100
2,000 - 2,999	6,500	2,100
1,000 - 1,999	18,740	2,082
500 - 999	18,500	2,055

There are pros and cons to using a trade magazine list for a national survey. Its subscribers may not include the entire population of producers and they may be more representative of some geographic areas or size groups than others. Moreover, there is no readily available way of checking such discrepancies unless they are quite large. For example, one could discover quickly if a list contained no operations on the West Coast, but there is no easy way

to check whether it contains 95 percent or only 75 percent of such operations. Thus, the population to which we project is technically the subscribing units of Pork 89 which is likely not identical to the U.S. population of hog producers.

Another problem with hog magazine lists is that the number of subscribers typically exceeds the number of operational units. One reason is illustrated by this example: the two co-owners, the assistant manager and two of the other employees of a single large unit may subscribe. Another reason is that some people associated with the industry may pretend to be producers in order to subscribe to a limited circulation magazine. A major plus in cooperating with Vance Publications is their rigorous validation of their subscription lists. An integral part of that process is to link a subscriber to a unit and his/her role in that unit (e.g., owner, manager, herdsman). The list from which we sampled was restricted to one person per operation. Of course, the on-going validation process is not completely fool-proof, so there will be a few errors. Thus, this subscription list problem is minor for this study.

The reason for using a subscription list for a national survey is very simple. Its the only method a nongovernmental agency can afford. A list and especially a list stratified by size is so much cheaper than a geographic sampling approach. There aren't many lists available and all have the shortcoming of an unknown degree of incompleteness. Pork 89 not only has a large carefully policed

list but it also has an editor, Bill Newham, who has contributed greatly to formulation of objectives, design of questionnaires, supervision of procedures and analysis of results.

The analysis projects to a national population (of the magazine). The projection is based on multipliers in the following way. If we had 500 returns from a size X category that included 2000 units, then each return is multiplied by (2000/500) and thus each return is treated as four returns. The multipliers were small for the large size units (2.33 for the 5000-9999 group) and progressively larger for the small size unit groups containing many more units (17.96 for the 1000-1999 group). We adopted one rule that undoubtedly underestimates the number and marketings of the really large producers. The rule was that any operation with marketings of 50,000 or more would have a multiplier of only one. Since we didn't obtain data from all those large operations, our totals err on the conservative side.

A projection of this sort is based on the assumption that non-respondents are just like the respondents. In some previous work we have telephoned a sample of the non-respondents and have found them reasonably similar to the respondents.

Note that a separate paper on the structure of the hog industry does not project numbers for the smallest size group of 500-999. This restriction makes our 1989 results more easily comparable with those published in 1987 which did not sample that smallest group. However, those contractors and growers in the

smallest group (500-999) are included in the contract analysis of this paper.

We asked for annual marketings for both 1987 and 1988. Most respondents gave data for both years but some gave data for one or the other. Our size classifications are based on the data given us. If size varied between the two years, we used the larger category. For example, a unit reporting 4500 market hogs in 1987 and 5000 in 1988 would be put into the 5000-9999 size group. Total output from other units and/or contract units was added to home-base output to determine size. However, contractor size was measured in terms of market hogs or feeder pigs but not both combined. This more limiting definition of contractor size was used to avoid the double counting that would occur when a contractor's market hogs were produced from feeder pigs that he had produced.

We used questionnaires color coded by the size unit reported earlier by the subscriber. Thus we could link for every questionnaire the expected size (subscription list size) and the size reported on the questionnaire for 1987 and 1988. This linkage enabled us to apply the appropriate multiplier to each schedule. We emphasize that each multiplier was based on expected size because the expected size groups generally had different sampling rates, as indicated earlier. Agreement between expected size and questionnaire size was reasonably good.

Our definition of size in terms of 1987 or 1988, whichever is greater, will yield slightly more producers and more marketings in the larger size group than would a definition based on 1988 alone. One justification is that we didn't have to throw out units that gave us only 1987 data unless, of course, they then quit production. Another justification is that a definition based on two years may be more realistic. A unit producing 6000 head in 1987 that dropped to 4500 head in 1988 because of some temporary problem (a family illness or a fire in a confinement building or a disease outbreak) is still a 5000-9999 size unit.

Insofar as possible, we tried to identify business units, not places of production. The Agricultural Census counts "places," which is one of the reasons its counts will likely exceed ours. For example, if Contractor X has growers (contractees) on 25 farms as well as farrowing on three different farms of his own, the Census is likely to count 28 "places," which are then reported as "farms." We would count one operation for Contractor X. We would count the same total marketings for our one "operation" as the Census would divide among the 28 farms, so the size structure would be very different.

Another difference between our results and the Census is that they show results for hogs and pigs combined rather than a separate market hogs category.

In order to locate a sufficient sample of people involved in contracting, we have very large samples of people not involved in

contracting. For most purposes the non-contracting operations at the national level can be treated as having very small sampling error, provided respondents and non-respondents are alike. Sampling errors for the contractor and grower data are larger, although workable for most users. We cannot guarantee against non-sampling error. People can report erroneous data -- either in good or bad faith. Various mechanical mistakes can be made in mailing, coding and analysis. Some of these errors may be offsetting. The study has been done very carefully and we believe the results are about as good as can be obtained with this approach.

Explanatory Notes

Anyone who contracts with growers to produce and/or feed his pigs is classified as a "contractor" regardless of the number of pigs/hogs that he may produce in his own facilities. Contractors were asked to indicate separately the marketings from their contract units and from their own units. Many contractors had extra units of their own production besides their contract units. Any contracting operation of more than 50,000 head was arbitrarily defined as a "large contractor" and those smaller were classed as a "small contractor." Small contractors were frequently farmers and/or feed dealers.

A "large contractor" is an agribusiness that focuses on contracting (although it may have its own production units) and is larger and more complex than a small contractor. It sometimes is a formerly small contractor now grown large. It may be a large

feed manufacturer or other large company. A "grower" (contractee) produces pigs, or more often finishes pigs, owned by a contractor. A few growers operate more than one unit.

One of our primary concerns in tabulating large contractors and producers was to avoid double counting. That error might occur if two or more different people from the same organization sent in responses. Given that such people may make slightly different estimates and may be located at different addresses, a duplication is not immediately obvious among dozens of responses. Hence we tried by means of zip codes of returned envelopes and publicly available information to identify the largest producers. Their individual answers remain confidential, of course.

Most people's lists of big names in the hog business (contractors or independents) would probably include Tyson Foods, Goldkist, Dreyfus, Benson Quinn, National Farms, Cargill, Carroll's Foods, Continental, L. L. Murphrey, Wendell Murphy, Prestage, Pennfield, Van Lunen and Hastings Pork. A more comprehensive list of large producers might include such additional names as Purina Mills, Land O' Lakes, Moultrie Farm Center (GA), JBMM Pork (IA), Growthland Companies (IA), Triple Edge Pork (IL), Tri-Que Company (IN), Yeager & Sullivan (IN), Delmarva Farms (MD), M. G. Purvis Farms (NC), Sand Livestock Systems (NE), Hershey Ag Service (PA), Keystone Mills (PA), White Oak Mills (PA), Lubbock Swine Breeders (TX), and Advanced Genetics (VA). Of those 30, we believe we had at least 25.

Our interest in contracting was strictly in production contracts in which the contractor provided pigs and/or other inputs to a grower and paid some sort of fixed or variable fee (rarely a share of profits) for the grower's efforts. We excluded any marketing or forward delivery contracts that independent producers used to sell their own feeder pigs or slaughter hogs to a buyer.

Magnitude of Contract Production

The numbers of contractors and growers in 1988 were projected to be: growers 1900 and contractors 1023. Both figures are larger than the estimates in a related paper on structure because this analysis includes operations in the 500-999 market size while the other paper did not. We regard the projection of 1900 growers as much too low for reasons that are given later.

There were 21 contractors that met the "large" definition of 50,000 or more market hogs (MH) or feeder pigs (FP) marketed from contracts plus their own production. Note that the definition requires 50,000 MH or FP rather than summing both. Since it is possible that own-produced FP might appear again as the operation's contract MH, we didn't count both FP and MH in assigning this large size classification.

We estimate that about 10 percent of the domestic slaughter hogs in 1988 were produced under contract. Here are the numbers of MH provided by the surveyed contractors:

Contract	6,807,000
Own production by contractors	2,657,000
	9,464,000

The strictly contract hogs are 7.8 percent of the 86,959,000 slaughter of U.S. produced hogs in 1988. Hogs produced by contractors in their own facilities were 3.1 percent of U.S. slaughter. The two groups of hogs total 10.9 percent of slaughter. However, since 1,764,000 of the "own-produced" hogs were marketed by small contractors including many by farmers, it may be argued that these hogs were hardly contract production. Removing that 2.0 percent leaves a total of 8.9 percent. Finally, we know that we missed a few of the large contractors whose combined production was probably 0.5 to 1.0 percent of U.S. slaughter. Thus, contracting was about 8.4 to 12 percent of U.S. slaughter depending on how inclusive is one's definition of production contracting. Contracting is important but it still has a relatively small share of hog production.

Grower and contractor estimated marketings for 1988 of <u>contract</u> MH and FP were as follows:

	Contractors	Growers
MH	6,807,000	3,003,000
FP	910,000	2,234,000
Total MH & FP	7,717,000	5,237,000

These are striking differences. Growers' total MH are 3.8 million head less than the contractor MH while grower FP are 1.3 million greater than the contractor FP. Part of the difference is readily explained. A grower pig producer <u>transfers</u> FP to the contractor regardless of whether the contractor feeds them out or sells them as FP. Usually the former occurs. Thus, the 1.3 million "extra" grower FP were likely marketed as contractor MH.

Ideally the contractor total of contract MH & FP should equal the grower total of those two. In this survey the grower total falls about 2.5 million head short. Why would the grower total be only 68% of the contractor total?

This sizable discrepancy may reflect several possibilities:

1. the grower population on the magazine list is much smaller because many growers feel less of an entrepreneurial role and thus ignore trade magazines;
2. a larger proportion of growers than contractors failed to respond to our survey;
3. by not sampling growers that produce less than 500 MH a year we may have missed many growers although likely not many thousand MH & FP; and
4. sampling errors may lead to over-estimating the contractors' total numbers and marketings and/or under-estimating the growers' totals.

We would expect an average contractor to deal with several growers. That there were only 28 percent more growers than contractors responding to our survey supports the idea of a large under-counting of growers. Thus, we proceed on the assumption that the contractor total MH is a good estimate of contract MH while the grower total MH is a major under-estimation of MH, and the grower total FP is also probably too small but not by as large a margin.

Growth in Marketings of Contractors

The best measure of average growth is to use those firms reporting marketings for each of two years. A comparison of 1987

and 1988 MH marketings for large and small contractors who each reported marketings for both years shows that MH marketings of small contractors grew by 16 percent while their marketings of FP grew by 4 percent. In contrast, the MH marketings of large contractors grew at only 8 percent from 1987 to 1988 while their marketings of FP grew at a hefty 22 percent rate (table 1).

Growth by regions from 1987 to 1988 of those contractors reporting marketings both years is reasonably similar on a percentage basis with a few exceptions (see Appendix B for a list of states by region). The following shows regional growth as a percentage increase above 1987 marketings:

Regions	Contract MH	Own-Produced MH	All-FP
WNC	19	4	12
ENC	12	17	12
EC	17	1	17
RON	4	2	(11)
Nation	16	4	13

This general similarity (excluding the RON) of regional growth frequently resulted from offsetting differences between large and small contractors within a region. The following are percentage increases above 1987 marketings:

	Large Contractors			Small Contractors		
Regions	Contract MH	Own MH	All FP	Contract MH	Own MH	All FP
WNC	10	(13)	29	24	11	6
ENC	43	(2)	18	3	21	9
EC	17	(2)	19	18	4	3
RON	1	0	50	383	4	(27)
Nation	12	(6)	22	19	10	4

Thus, it appears that the WNC's large (19 percent) growth 1987-88 in contract MH (first exhibit above) was chiefly due to small contractor expansion (second exhibit), although the bigs have

gotten the greater publicity there. On the other hand, their (WNC) growth in FP was led by the large contractors. The EC had fairly consistent growth patterns of large and small contractors except for FP while the RON and ENC had quite divergent patterns. (See table 2 for details behind the above two tables.)

Most of the contractor growth, 1987-1988, in marketings of contract MH and in all FP was in firms of 10,000 head or more (table 3). As already noted, the data show a reduction in own-produced MH in the large contractor group, so there was more growth of those MH in operations below 10,000 head than in operations above that mark.

Net entry into contracting in recent years would be another source of growth. There has been considerable entry recently into contracting (table 4). However, we have no measure of exits so we cannot estimate a rate of net exit or net entry. See Appendix A for data suggesting the net entry is likely quite small.

Output Plans for Contractors

Contractors were asked how they expected their number of hogs raised on contract to change by 1992. These were the results:

Output Plans by 1992	Percent of Contractors	Percent of '88 Contract MH	Percent of '88 Contract FP
More hogs contracted	42	78	65
About the same number	43	17	29
Less contracted	8	4	4
Out of contracting by 1992	7	1	2

Few contractors projected a decline in contract numbers or a termination of contracting. Those few were obviously mostly smaller contractors because their shares of contract hogs and pigs were so small. This last point is reinforced by a tabulation of output plans by small versus large contractors. The results as a percentage of contractors were:

	Small	Large
More	41	81
Same	44	19
Less	8	0
Quit	7	0
	100	100

A majority of the small contractors are farmers. Hence, it would follow that their plans would be much like the small group listed above. In fact, the other types of small contractors were more expansion minded than the farmer contractors. Only 31 percent of the farmer contractors planned to expand versus 61 percent of the feed related, and 75 percent of the other agribusiness contractors (table 5).

The WNC region, reflecting its numerous farmer contractors, was a bit less expansion minded than the other regions (table 6).

Output plans were less expensive for those contracting FF or pig production than for those involved in finishing (table 7).

Components of Contractor and Grower Marketings, 1988

The 21 large contractors in 1988 marketed 77 percent as many MH as the 1002 small contractors (table 8). Specifically, the

large contractors marketed 47 percent of the contract MH and 63 percent of the contract FP, while their own-production was 34 percent of contractors' own-produced MH and 46 percent of own-produced FP (tables 8 and 9).

The large contractors marketed 3/4 of the contract MH in the combined SA & RON regions but only 30% in the N. Central regions (table 8). The SA and RON regions were the only ones where large contractors' own produced MH exceeded small contractors' own-produced MH (table 8). Among the small contractors the WNC region had the leading shares in MH and FP. The reader should be aware that the division of a contractor's volume among regions was simply on the basis of the list of states provided by that contractor -- a fairly rough approximation.

An examination of contractor volume by size groups offers further confirmation that contracting is mainly large scale. Fully 89 percent of both contract MH and contract FP were in contractor operations of 5000 head or more (table 10). While their own-production was not quite as concentrated, 76 percent of their own-produced MH and 81 percent of their own-produced FP were in contractor operations of 5000 head or more (table 10).

On a check-list for self-description, 68 percent of the contractors described themselves as farmers. Farmer contracting generally was much smaller than that of average contractors as shown by their 18 percent share of contract MH and their 25 percent share of contract FP (table 11). These farmer contractors were a little larger as own-producers with shares of 52 percent of the own-produced MH and 35 percent of the own-produced FP (table 11).

Feed-related contractors (feed dealers and/or feed manufacturers), not surprisingly, had a much higher share of contract MH than their share of own-produced MH.

Note that the "big" contractors included 28 whereas our "large" operations included only 21. While the totals are not greatly different, the self-described big contractors should not be confused with the large contractors as defined by size in this paper.

Grower Marketings

Of the 1900 growers in 1988, 1187 or 62% provided 1988 contract MH data, and 732 or 38% provided 1988 contract FP data. In addition, 325 or 17% reported 1988 own-produced MH and 212 or 11% reported 1988 own-produced FP (table 12). Growers reported marketings of 2,703,000 contract MH for a mean of 2,277 and also 300,000 own-produced MH for a mean of 929. Likewise, they reported marketings of 2,234,000 contract FP for a mean of 3,052 and 304,000 own-produced FP for a mean of 1,433.

Contract growers generally averaged larger contract marketings of both MH and FP in the SA region (table 13). Growers in the RON region had the largest average marketings of MH from their own-production but they had relatively few such operations. The average operation in the WNC region marketed about 1,900 contract MH and/or 2,400 contract FP; these averages are associated with the many smaller farmer contractors in the WNC.

Growers, of course, were not nearly as concentrated in the larger sizes as were contractors. As indicated in table 14, 43

percent of growers' contract MH and 66 percent of their contract FP were in sizes 5000 head and above. Since we believe growers to be greatly under-estimated, it is certainly possible that the regional and size breakdowns are quite approximate.

Grower's size of operation was related to the type of contracting. Strictly finishers had a smaller than average distribution of sizes, while strictly F-F had a much larger than average distribution, and the strictly pig producers were close to the average distribution for all growers (table 15).

Growers under 40 years of age produced nearly three-fifths of the contract FP but only slightly more than two-fifths of the contract MH (table 16). In terms of who contracted what, age was related to the percent of growers contracting MH or FP as follows:

Age	Number in Age Group	Percent of Age Group Contracting MH	Percent of Age Group Contracting FP	Total Percent
Under 40	940	58	44	102
40 and over	930	69	34	103

Note: percentages exceed 100 because some growers contracted for both pig production and pig finishing.

Types of Contract Production

Contractors may contract to produce FP, to finish FP, to farrow-to-finish MH, or to farrow-to-finish breeding stock. A few contractors may do all those activities but a majority of contractors reported specialization in a single type of production contracting. Finishing was the most common activity. Of the 1023 contractors, on an opening question, the following contract activities were reported:

214 or 21% involved in contract pig production,

892 or 87% involved in contract pig finishing,

152 or 15% involved in contract farrow-to-finish,

33 or 3% involved in contract breeding stock production.

Of the 1900 growers, on an opening question, the following contract activities were reported:

697 or 37% produced contract pigs,

1175 or 62% finished contract pigs,

169 or 9% did contract farrow-to-finish,

78 or 4% produced contract breeding stock.

The percentages exceed 100 percent because several growers contract for two or more activities.

There is no reason why the growers and contractors should be more than roughly similar in their activities because the number of growers per contractor varies considerably among contractors. For example a recent account reports that Murphy Farms acquired 190 grower contracts when it purchased Plainview Hogs in Iowa.[5]

Pig Finishing

Placing pigs with growers to be finished is currently the core of production contracting. We will examine some characteristics of this activity and of its participating contractors and growers.

Contractors were asked to describe their typical grower in terms of age and experience. The following picture emerged of the

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[5]Kathy Hohmann, "Murphy Moves into the Midwest," Hog Farm Management, Jan. 1987.

contractors' perceptions. The typical finisher was said to be 40 years of age which is a few years older than other growers. He has had 12.5 years experience as a producer and has been contracting with this contractor for 2.7 years.

Grower finishers, on the other hand, described themselves on average as 44 years old, which averaged a few years older than the other growers. There was, of course, a considerable range in age of growers -- from 21 to 76. Grower finishers reported that on average they had begun contracting in 1985; beginning dates ranged from 1968 to 1988. Since many growers have changed contractors one or more times, it is not inconsistent that their term of contracting would be longer than the 2.7 years described by the contractors.

Growers reported that their finisher contract arrangements had an average length of 15 months; the range was three months to 10 years. Other growers typically had average contracts two or three times as long as the finishers.

Contractor finishers, on average, began their own hog production in 1975 and began contracting in 1985. Clearly the typical contractor did not begin production as a contractor. These average dates are within the ranges of other types of contractors.

We can estimate roughly how many pigs were contracted to be finished. It should be the total contract MH minus those contract MH that were farrow-to-finish. Since some contractors had contracts for both finishing and F-F, their F-F marketings can only

be guessed. It appears that the overall F-F proportion of MH was about 20% leaving about 80 percent or about 5.4 million MH to the finishers. The roughly 5,400,000 contract MH divided by 892 contractor finishers yields a mean of 6,054 MH.

The numbers on the more specialized grower side are consistent with the proportions arrived at from contractors. Growers who finish-only accounted for 70 percent of total contract MH while growers engaged in a combination of activities (often involving finishing) accounted for another 14 percent of contract MH. The finish-only grower averaged 2,245 hogs/pigs per operation in 1988 and the maximum operation marketed 18,000 head (table 16a).

Farrow-to-Finish

We found 152 contractors (15 percent) who were involved in contracting for farrow-to-finish (F-F).

Contractors described their typical F-F grower, on average, as being 30.5 years old, which is the youngest group among growers. They report that he has an average of 7.5 years experience as a grower and has been contracting with this contractor an average of 3.4 years.

F-F growers reported their average age as 40 -- a big deviation from the contractor perception. They reported that, on average, they began contracting in 1985 with a range of 1977-1988.

Growers reported their F-F contract arrangements averaged 49 months in length with a range of 10 months to 15 years.

As already indicated, the F-F contractors produced about 20 percent of the market hogs of the contractor group or about one million head. The average F-F contractor contracted an average of about 6,600 MH. The F-F specialized growers averaged almost 4,700 head marketed in 1988 (table 16a).

Pig Producers

We found 68 contractors (6.7 percent) involved solely in pig production but another 146 (14.2 percent) were involved in pig production as well as other types of contracting. We cannot estimate their total output of FP because contractors often fed them out and reported MH numbers rather than FP numbers.

Contractors described their typical pig-producer-grower as having 13 years experience and being 39 years old. They report the average grower as having contracted with them for 3.3 years.

Growers who were solely pig producers reported an average age of 43 (a range of 21-76). They reported that on average they began contracting in 1983 (a range of 1960 to 1988). Their average length of contract to produce pigs was 30 months (a range of four months to 10 years was reported). These specialized pig producers averaged marketings of 3,150 head in 1988 but the largest one marketed 39,000 head (table 16a).

Facilities

A new producer will have to invest in facilities -- an investment that rises with size and for operations that farrow or farrow-to-finish rather than simply finishing. Even existing

producers sometimes have to renovate or build one or more buildings to obtain a contract. A recent trade magazine reported on a grower that was the largest and most productive of Cargill's many growers in AR.[6] That unit had invested $300,000 in a facility turning out 10,700 pigs a year from almost 500 sows. The grower reported an expected payout in less than 7 years. On the other hand, Gene Futrell, extension economist at Iowa State has felt that many contracts offer too little to pay both decent wages and an adequate return on buildings.[7]

Our 1987 survey found that growers in the SA region were much more likely than growers in the NC regions to have built facilities in order to receive a contract. Midwestern growers most often used existing facilities.

About 34 percent of the growers reported in 1989 that they had built or changed facilities in order to obtain a contract. Growers reported the specific types of facility construction or remodeling that they did to obtain a contract. New buildings were reported slightly more frequently than remodeling (table 17).

Their frequency of building or remodeling was related to the growers' type of contract. Only 21 percent of those hundreds of strictly finishers made any changes while 40 percent of those who were strictly F-F and 52 percent of those who were exclusively pig

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[6]Steve Marbery, "Razorbacks on a Roll," Hog Farm Management. March 1988,, pp. 24-32.

[7]William Robbins, "Farmers Turn to Hog Raising for a Fee," NY Times. May 29, 1988.

producers made changes. In total, about one-fourth the finishers of market hogs producing two-fifths of the MH had made changes while about one-half the pig producers with two-thirds of the FP had made changes in facilities. Likewise, there was an association of type of contractor and proportion of growers who changed facilities. The high percentages of change were with big contractors (57 percent) and feed manufacturers (51 percent) while only 22 percent of those growers contracting with farmers made facility changes.

There were other interesting relationships to facility changes. Those growers not expecting to become independent within three years were more than three times as likely to have made facility changes than those who did expect to become independent. The percent of growers reporting changes were as follows: WNC 25, ENC 23, NE 40, SA 59, SC 90, and W 13. Those who said that their contract income was sufficient to replace their hog buildings, when it became necessary, were more than twice as likely to have made facility changes as those who said their income was insufficient.

The question to contractors asked how much their typical feeder pig producer spent on remodeling or building to obtain a contract. The question was answered by 647 -- many more than the number of FP producers but 377 less than the total number of contractors. Some 62 percent of those contractor responses said something was spent by growers to change or build facilities. Perhaps the much higher percentage reported by contractors is because the contractor question was disproportionality answered by

pig producers who were the most likely to have to build or modify. However, there is probably some unexplained inconsistency between growers and contractors on this point.

This survey again confirms that contractors on the East Coast obtained more changes in facilities, or new facilities, of their growers compared to contractors elsewhere (table 18). This difference is associated with the greater presence of big contractors on the East Coast and the fact that they more frequently start new producers in contracting there. As shown in table 19, big contractors were greatly different from other types of contractors concerning their initial requirements for facilities.

Contractors were asked to score on a 6-point scale the condition of the facilities of their average grower. Means were mainly around 4 (6 is excellent and 1 is poor) but they averaged 5 for those big contractors requiring the most modification or building of facilities.

Maintenance and Replacement of Facilities

Growers were asked, "Is your contract income enough that you can afford to adequately maintain your hog buildings?" They were later asked, "Is your contract income enough to replace your hog buildings, if necessary?" Of those answering, 89 percent said they could maintain but only 36 percent thought they could replace. The North Central region was most positive about maintenance while the RON was most positive about replacement (table 20). Replies about maintenance were not related to size of grower, but replies about

replacement tended to be more frequently positive at larger sizes.

The percentages saying they could replace were related to the type of production activity as follows: strictly finishers 24%, strictly F-F 48%, strictly pig production 47%, and strictly breeding stock production 75%.

Those 89 percent who said that they could maintain their facilities had a higher average level of satisfaction (4.7 on a 6 point scale) than those 11 percent who said that contract income was inadequate (average satisfaction of 3.1).

Changes in Contracting Parties

Contractors were asked if they had ever dropped a grower due to poor performance. Those 48% giving affirmative replies were asked what percent of their contractees on January 1, 1988, had been dropped since then (a period of 15-16 months). The average percentage dropped by those dropping was 13 percent since January 1, 1988, so the average grower turnover through this type of contractor drops for the whole group was about 6.5 percent for a 15 to 16 month period.

The likelihood of having dropped someone is related to the type of contractor (partly a matter of size and tenure) with 37 percent of the farm contractors, 70 percent of the feed related, 75 percent of other agribusiness and 89 percent of the big contractors reporting drops. The frequency of contractors who had ever dropped a grower quite naturally rose with the length of their contracting experience: 38 percent for those contractors beginning

in 1986-88, 56 percent for those in 1983-85 and 69 percent for those beginning contracting before 1983.

Growers were asked a somewhat related question: have you previously produced for a different contractor? Of 1630 responses, 532 or 33 percent said yes. The yes percentages by region were East Coast 29, North Central 38 and remainder 11. Given the longer experience with contracting on the East Coast, one might have expected a higher percentage there. Probably the much greater number of smaller, competing contractors in the NC region is the explanation for a higher turnover. Thus far, contract production has been of a shorter run and more transitory nature in the NC region.

The percentage of growers who had produced previously for another contractor varied a bit by size of grower: 47% for size 2000-2999, 39% for size 1000-1999, 35% for size 3000-4999, 26% for size 5000-9999, 23% for size 10,000+ and 22% for size 500-1000. Likewise there appeared to be a slight relation to the type of contractor with growers for feed manufacturers high at 42%, growers for big contractors at 31%, growers for area feed dealers at 28% and growers for full-time farmers at 23%.

Contractor and Grower Attitudes

Contractors were asked to rate several characteristics of their average grower. Ratings were grouped as high (ratings of 4, 5 or 6 on a 6-point scale) and low (ratings of 1, 2 or 3). The percentages of contractors rating their average growers in the high

group were as follows:

66% Condition of facilities

74% Production management ability

86% Capacity to improve production management under your training

50% Financial management abilities

45% Financial status.

The larger contractors were more satisfied with their growers' facilities than were the smaller contractors. Consequently, 88 percent of the contract MH and 90 percent of the contract FP were associated with high ratings of facilities. The average contractor giving a "high" rating to his grower facilities contracted for 10,285 MH in 1988 while the average contractor giving a "low" rating contracted for only 2,400 MH. By contractor type, the percentages giving high ratings to facilities were farmers 62 percent, feed related 74 percent, other agribusiness 81 percent, and big contractors 100 percent.

Contractors were also asked to rate "your degree of satisfaction with contract production." Their median and mean scores were 4.0 on a 6-point scale where 6 equals extremely satisfied and 1 equals not at all satisfied. About 72 percent of the contractors gave a "high" rating of 4 or higher.

Contractor satisfaction with contracting was more highly related to contractor appraisal of growers' production management abilities, capacity to improve production management under

contractor training, and condition of facilities than to the other factors: growers' financial management abilities and growers' financial status.

Grower Attitudes. Growers were asked to use a 6-point scale to show their "level of satisfaction with contract production and payment arrangement." Their mean score was 4.5 and about 74 percent gave a high rating of 4 points or higher. Thus, grower and contractor satisfaction ratings were quite similar. Mean ratings of grower satisfaction did not differ substantially by region, age of growers, or type of major problems experienced with contractors.

Growers were asked to "describe any major problems experienced with your contractor." Thirty percent replied no problems and another 44 percent didn't answer. Some respondents may have been hesitant to voice criticisms, but it appears that a majority may have experienced no major problems. The regional percentages were:

EC	NC	RON	
33%	49%	37%	No Answer
32	28	38	No Problems
35	23	25	One or More Problems
100	100	100	

Those saying "no problem" had average satisfaction ratings of more than one point higher than those listing a problem.

The most frequent problem (9 percent mentioned) was receipt of diseased livestock or poor quality inputs (table 21). The three next most frequent problems were: contractor won't keep my

facilities full, insufficient or slow payments, and communication hassles with contractor or his fieldman (includes changing personnel, cumbersome records, changing procedures, etc.). Other problems mentioned included: contractor won't provide medicine or vet, meager technical assistance, and lack of long term contract. Specialized breeding stock producers most emphasized the communication hassle. F-F producers most complained about poor livestock. The number and type of problems appeared to be somewhat related to the type of contractor (table 21).

Growers were asked, "Do you worry about losing your contract?" Generally, they didn't; 78 percent said no, 29 percent checked "yes, I worry a little," and 2 percent checked "yes, I worry a lot."

Growers were asked, "Why do you contract rather than producing strictly for yourself?" About 23 percent did not reply while 12 percent gave two reasons. The most frequent reasons were: financial (lack of capital and credit to be independent) at 25 percent and less market risk at 18 percent. Other reasons, in declining order of mention, were: better and/or more steady income, assured market (simplifies life not to worry about marketing), better cash flow, a way to get started, less burden to work with someone, and better livestock. Those in the NC region more frequently cited financial reasons than did those in other regions (table 22). In some communities, contract production has been perceived as the last stop before bankruptcy. Note that most

of the above reasons are much more positive.

Growers rated their contractor on helpfulness in improving their production efficiency through better records and training in new techniques, etc. The modal and median score was 4 (on the usual 6-point scale with 6 extremely helpful and 1 not at all helpful). However, there was great dispersion with 15 percent rating 1 and 18 percent rating 6. Those older operations (began hog production before 1950) had a lower opinion than other groups of contractor helpfulness. Consistent with that, 33 percent of growers 40 years of age, or older, gave a rating of 5 or 6 on helpfulness compared to 43 percent of the younger growers giving those high ratings. There was some association of higher satisfaction with more helpful ratings but even 52 percent of those rating helpfulness at 1 (not at all helpful) gave "high" satisfaction ratings. It is quite possible to be satisfied with contracting even while finding contractors to be unhelpful in a technical sense. Medium sized growers (3000 to 9999) more frequently gave high ratings while the smallest operations gave a majority of low ratings. Ratings of helpfulness were also related to the production activity of the growers: specialized finishers gave a mean rating of 3.4 compared to 3.9 for F-F growers, 4.0 for pig producers and 5.1 for breeding stock producers. Ratings of helpfulness appeared related to the type of contractor: large contractors had a higher mean rating of 4.4 than the other three groups that had means ranging from 3.3 to 3.7.

Grower Independence and Related Attitudes.

About 79 percent of the growers reported they operated an independent hog operation before they began contracting while 330 or 21 percent had not. On average, those independents had operated 14.5 years as independents. The previously independent averaged almost four years older than the never independent. The percentage of independents was related to the size of the grower operation. While 89, 91 and 87 percent of growers in the three smallest sizes had been independent, only 61, 60 and 57 percent of the three largest sizes had been independent. In other words, when contractors take the trouble to set up new producers as growers, they tend to work with larger operations.

The percentage of independents was definitely related to region. The percentages that had been independent were: WNC 95 percent, ENC 72 percent, NE 76 percent, SA 47 percent, SC 31 percent, and W 90 percent. The perception of problems didn't appear to be related to whether previously independent. Likewise, satisfaction ratings of contracting were not related to whether previously independent. Those who had been independent more frequently stressed finances and less market risk as their reasons for contracting.

The proportion of previously independent varied by the type of specialized production activity. The percent who had been independent was 90 for pig finishers, 84 for F-F, 61 for pig producers and 50 for breeding stock producers.

The type of contractor was related to the percentage of previously independent growers as follows: large contractors 68 percent, farmers 84 percent, feed related 80 percent, and other agribusiness 94 percent.

Thus the grower who begins hog production and contracting simultaneously tends to: be younger, live outside the Cornbelt, operate a larger unit, and produce pigs or breeding stock for a large contractor.

Would growers like to become independent? Thirty-four percent of growers replied that they want to become independent, 43 percent said they did not and 23 percent say they still are partially independent as they produce some hogs of their own. The proportions differ by regions with 34 percent "no" in the NC, 55 percent "no" in the RON, and 62 percent "no" in the EC. That Cornbelt independence shows up again. Those saying no averaged 45 years of age versus age 37 for the yes growers saying they want independence and age 45 for those also independent now. The percent wanting independence was a little larger at the three smaller sizes (39, 47 and 40 percent) versus at the three larger sizes (18, 40 and 24 percent) of operations.

Attitude toward independence shows some relation to reasons for contracting. Those <u>not</u> wanting to become independent showed more concern about market risk and liked working with someone else. Those wanting to be independent put more emphasis on current financial problems and/or viewed contracting as a way to get started.

Growers were asked if they expect to become fully independent within the next three years. Their expectation was related, of course, to their attitude toward independence. Here were the results:

		Expect independence in 3 years?		
		Yes	No	Total
Want Independence?	Yes	49%	51%	100%
	No	1	99	100
	Still Also	23	77	100
	Total	23	77	100

It surprises that only 23 percent of those now also independent expect to be within three years while 49 percent of those not independent (but wanting to be) expect to be independent in three years. Perhaps the partially independent have the least interest in becoming totally independent. Note that, in total, only one grower in four expects to be independent in three years.

By size the highest proportions expecting independence were 27 and 28 percent in sizes 1000 to 2999 while the lowest proportions were 16 and 14 percent in sizes 3000 to 9999. Expectation had a regional dimension with these percentages of yes: WNC 34, ENC 5, East Coast 28, and RON 11.

Independents' Attitudes Toward Contracting

Independent producers with no experience in contracting were asked a question (with a check list of answers) reading: Would you consider raising hogs or pigs on contract for another party? One out of every two of the several thousand respondents gave the strongly negative answer of "I would not consider contract raising

under any circumstance" -- the "no way" answer of table 23. It should be noted, however, that 1% were considering becoming a grower and another 20% were willing to consider the idea. Thus, there is a significant pool of independent producers who might be recruited as growers. Not surprisingly, those independents that had begun production since 1984 were significantly less negative about contracting than older operations. There was not much difference in attitude by size of unit except that the largest units (10,000+) were a trifle less negative than the smaller sizes. Independents in the N. Central region were more negative toward contracting than those in other regions (table 23).

That one-half who gave the strongly negative "no way" answers were asked "Why." About 2/3 of them answered, representing more than 12,000 producers. Of these strongly negative producers about 1/2 were opposed to contracting in general and/or saw it as a threat to their independence (table 24). Other reasons were generally more operational in nature, such as contracts pay poorly or the respondent's age or health would hinder, or his facilities weren't adequate. While there were a few regional differences they were not large (table 24).

Independent producer's were next asked if they would consider becoming a contractor. Most (69%) said they were not interested in having someone produce hogs on contract for them, while 1% were considering contracting and 30% said they might consider it in the future (table 25). Growers in the rest of the nation were more interested than growers in the N. Central and East Coast regions.

Larger operations more frequently than smaller ones were interested in becoming contractors: 72% not interested for sizes 500-1999 compared to only 60% not interested for sizes 5000 and up. Likewise, smaller proportions of the older operations than of the newer were interested in becoming contractors: 76% not interested of those operations begun before 1970 compared to 55% for those begin after 1984.

Those respondents indicating no interest in becoming contractors were asked to explain why. Only 8% gave personal opposition to contracting as their reason. However the most commonly reply of "personal preference" often may have been motivated by opposition (table 26). Another 8% gave workmanship reasons -- "a grower wouldn't do it the right way that I do it." Another 17% felt that contracting wouldn't pay. There were some small regional differences (table 26).

Outlets for MH

"How do you usually market your slaughter hogs?" The 959 contractors answers to a specific list were as follows:

Number	Percent of Those Answering	Market Outlet
399	42	Shop around nearly every time I sell
383	40	Sell regularly at same outlet for going price
157	16	Have a standing agreement at a price premium
20	2	Other or sell only FP
959	100	

These results indicate most contractors used regular market channels with only one in six having negotiated a standing

agreement with a specific packer at a price premium. However, a comparison of contractor type by market outlet showed that 82 percent of the big contractors had negotiated such agreements. Likewise, the use of standing agreements was related positively to size of contractor as follows: sizes 500-2999 had 8% usage, sizes 3000-9999 had 19% and sizes 10,000 plus had 32%. Hence, about 28% of contractors' MH were probably covered by such formula pricing type agreements that bypass the regular price discovery markets. As shown in table 27 the use of market outlets varied by regions with the least shopping around on the East Coast and the most in the North Central. There were the most standing agreements at a premium price on the East Coast and the least in the North Central.

Resources Provided by Contractors

Contractors were asked to indicate the percentages of certain resources (inputs) provided by themselves and by growers. Generally the contractors provided almost all of the breeding stock, feed, and medicines and almost none of the facilities, labor (and day to day management), and utilities. There were perhaps a few more deviations from this all or nothing pattern in farrow-to-finish than in finishing (table 28).

Contractor Production Costs

Contractors were asked to compare their average cost of production with the average costs of "a really efficient, large-scale independent operator in your area." These estimates may be expected to be quite crude for area costs and even for some

contractors' costs. Generally, a majority of the contractors answering felt their average costs of production were the same as independent competitors while a few more contractors thought their costs lower than thought them higher, except for F-F (table 29).

Contractor Self-Description and Feed Source

All but 32 of the 1023 contractors answered a check-list description of their business. The results were:

	Number	Percent of Those Answering
Full-time farmer	604	61
Part-time farmer	94	10
Feed manufacturer	55	5
Feed dealer	159	16
Big contractor	28	3
Other agribusiness	51	5
	991	100

Obviously very few of these contractors described themselves as purely contractors. As noted earlier, seven more classified themselves as big contractors than fitted our 50,000 head definition of large contractors. Farmers and feed businesses comprise most of the contractors. Recall, however, that those two major groups marketed only 45 percent of the contract MH and 34 percent of the contract FP while big contractors marketed 51 percent and 63 percent of those contract MH and FP (table 11). Descriptive lists often force simplification. It appears from the feed source data given below that numerous farmers had feed dealer ties and certainly the typical big contractor makes much of his own feed. Hence, these descriptions should not be taken too literally as mutually exclusive definitions of contractors.

As indicated previously in table 19, the big contractors typically required much greater initial investments of growers in facilities.

The NC region had a high proportion of farmers and feed dealers but lower proportions of big contractors and other agribusinesses (table 30).

The comparison of type contractor with feed source shows that 17 percent of the "farmers" were also feed dealers or feed manufacturers. However, 52 percent of the farmer-contractors have a deal with a single feed source (table 31). Not surprisingly most feed dealers and feed manufacturers supply their contract hogs with their own feed. Note that 86 percent of the big contractors had a feed dealer or feed manufacturer connection. Overall, taking bids had a very low proportion of users while a majority of contractors (54 percent) used some type of continuous contracting with one or several feed sources. Obviously, the large majority of feed for contract production of hogs came from captive sources.

Grower Descriptions of Contractors and of Selves

Growers were given a list to describe their contractors that was identical to the list given to contractors for their self-description. Generally, the growers perceived their contractors more frequently as feed-related or big contractors or other agribusiness than the contractors had reported (table 32). This result would be expected to the extent that those categories contract, on average, with more growers than farmer contractors do. It is also possible that growers were a little less likely to

perceive their contractors as farmers than contractors were.

There were some interesting variations by region (table 32). In every region except the RON, the feed dealer or manufacturer is perceived as contractor more frequently than any other group.

The average marketings of growers were related to the kind of contractor with whom they associated. Not surprisingly, the contract means of both FP and MH were larger for those growers associated with big contractors (table 33).

About 16 percent of the growers contracting with farmers had never been independent versus 20 percent of those contracting with feed folks and 32 percent of those contracting with big contractors. Thus, it appears that big contractors were twice as likely as farmers to start out growers with no previous experience in hog production. R. H. Mohesky, director of Cargill's hog contracting has been quoted as saying: "We are looking for people who have been successful, not necessarily those with hog production experience. If a person has been successful, regardless of the endeavor, chances are he will make an excellent producer."[8]

As indicated earlier in table 21, those growers associated with the big contractors or feed-related contractors appeared to have a few less problems than those growers associated with farmers or other agribusiness contractors.

Growers were asked to describe themselves in terms of a list. The results were as follows: part-time farmer 28 percent, full-time farmer 59 percent, feed dealer related (owner or employee) 2

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[8]Hog Farm Management, March 1988, p. 28.

percent, owner or employee of hog contractor 3 percent, other 2 percent, and combinations of above 6 percent. These answers reflect the self-descriptions of growers and there was no room on the questionnaire to define terms such as part-time versus full-time farmer. The shares of marketings--especially of contract MH--were reasonably similar to the percentages of growers by type (table 34).

The age groups by decades of the 1675 growers who provided their ages were as follows:

Ages	Percent
20-29	10
30-39	35
40-49	25
50-59	19
60-69	10
70-79	1
	100

With 89 percent of growers under 60 years of age, the turnover of growers associated with aging would not be expected to be very fast.

Growers: Length of Contract and Time Began Production and Contracting

Growers were asked the length of their typical contract. Answers ranged from three months to 240 months with strictly F-F growers having the largest mean of 49 months, strictly pig producers next at 30, strictly breeding stock producers at 26 and strictly pig finishers at 15. The overall mean contract for the 1453 growers providing that data was 26.5 months.

Those growers who gave the higher ratings (scores 4-6) on the

helpfulness of their contractors had longer contracts on average (32 months) while those growers who gave the lower ratings (scores 1-3) had average contracts of 17.5 months. However, as noted above, longer contracts are associated with F-F and pig production activities which tended to give higher ratings on helpfulness. Likewise, there was a positive association between ratings of overall satisfaction with contracting and the length of contract.

Those growers reporting contracts shorter than 36 months produced 68 percent of the contract MH and 52 percent of the contract FP in 1988. However, these same growers marketed fewer contract MH and contract FP per grower than those with longer contracts. The means per grower were 2,581 contract MH versus 3,794 contract MH and 1,976 contract FP versus 3,351 contract FP. Seventy-eight percent of the growers with contract MH and 61 percent of the growers with contract FP reported contracts shorter than 36 months.

Contract periods averaged longer in the EC than in the NC region. The percent of contracts shorter than 36 months were: WNC 87 percent, ENC 79 percent, EC 45 percent, RON 64 percent, and nation 74 percent. These regional averages are probably affected by the different mixes of production activities by regions.

Contracts averaged roughly 10 months longer when growers contracted with big contractors or feed-related contractors than when they contracted with farmers or other agribusiness contractors.

Contracts averaged 33 months when facilities were initially built or altered to obtain the contract and averaged only 22 months when they were not.

Growers were asked, "What year did you begin producing hogs?" Answers ranged back as far as the 1930s and were distributed as follows:

In 1980s	39%
In 1970s	36%
In 1960s	12%
Before 1960	13%
	100

The percentages of growers who had started production as independents or growers were related to the period they began production. The percentages of growers beginning as independents or growers by time periods were:

No dates given	Independents	Growers
In 1980s	56%	44%
In 1970s	88	12
In 1960s	97	3
Before 1960	100	0
No dates given	87	13

Growers were asked, "What year did you begin contracting?" Answers ranged back as far as 1960 and were distributed as follows:

1988	26%
1987	15
1986	17
1984-85	29
Before 1984	22
	100

It appears that some growers were quite large when they began contracting; table 35 indicates that 9 percent of 1988 sign-ups and 17 percent of those beginning in 1987 had a 1987-88 size of 5000

head or more marketed. That table also indicates that the highest proportion of large growers was in the group that contracted before 1984 and had had some years to grow.

Table 36 indicates that mean size of contract marketings was largest for the group of growers beginning before 1983. Not surprisingly, the average age of that same group was about seven years greater than the groups beginning contracting later.

The percentages of growers who once were independent is related to the period they began contracting as follows:

Period Began	Percent of Growers Initially Independent
1986-88	83
1983-85	82
Before 1983	64

The smaller percent of initially independent growers in the before 1983 period may be related to either or both of the following hypotheses: (1) the initially never independent stay longer as growers, and (2) the spread of contracting to the North Central region after 1982 recruited heavily among former independents. Table 37 indicates larger proportions of the early recruits to contracting were in the East Coast region.

Grower attitudes toward independence were related to the period they began contracting, as follows:

Period Began	Want Independence	Percent Expect to Gain Independence
1986-88	40	27
1983-85	36	22
Before 1983	16	13

The belief that their contract income is enough to replace their hog buildings was held more frequently by those growers beginning after 1982 than by those beginning contracting earlier.

Grower Reported Resource Shares

Growers who produced FP reported shares of resources (inputs) provided by themselves and by their contractors. Growers said they provided virtually all facilities (99 percent), most (87.4 percent) of the utilities, but only 31 percent of the medicines and vet care, 30 percent of the feed, and 27 percent of the breeding stock. The grower reported averages are consistent with those reported by contractors for facilities and labor but are considerably higher for the grower shares on medicines, feed and breeding stock. Perhaps some contractors purchase some feed and breeding stock from their growers causing the two groups to report differently.

Growers who produced farrow-to-finish reported shares of resources (inputs) provided by themselves. On average, growers provided virtually all (99 percent) of the facilities, 94 percent of the labor, 92 percent of the utilities, but only 31 percent of the breeding stock, 34 percent of the medicines and vet care, and 26 percent of the feed. The major disagreements with the averages reported by contractors were again in feed, breeding stock and medicines. As shown in table 38, growers usually reported zero or 100 percent shares with very few reporting anything in between. There is no way of knowing if some growers may have carelessly gone down the resource list reporting the contractor share for their

own. But their accuracy on facilities and labor suggests there weren't too many errors on the other resources. Thus, there seems to be some difference in grower and contractor reports of the resource shares provided for feed, medicines and breeding stock.

Fees Growers Report for Finishing Pigs

There is no simple way to cover the diversity of payment plans reported by growers who finished pigs for contractors. Generally, most (88 percent) grower-finishers reported receiving set fees (often including performance incentives or penalties) rather than profit shares (or even fees plus profit shares).

The most common fee was in dollars per head when hogs are marketed; the next most common was a fee per head when the pigs arrived and the next was a payment of cents per head per day. About 50 percent of the finishers reported a fee at marketing, 33 percent a fee on arrival, and 20 percent a daily fee. A fee on arrival was almost always combined with a fee at marketing or (less often) a fee per pound of gain. In addition, 3 percent reported no set fees but profit-sharing. These percentages total 106 percent because a few reported two types of fees. There were 9 percent who reported fees plus profit-shares; these 9 percent are included in the percentages reported above. The reported finishing fees were:

	Mean	Most Common	Range	Percent Receiving Extra
At marketing	$5.39	$4	$1-$10	61
At arrival	$4.34	$4	$2-$8	83
Daily	7¢	7¢	7¢-10¢	31

Per head fees typically totaled $7 to $9 (besides any special incentives). One grower claimed to receive only a $2 fee per head at time of marketing. Presumably there were special circumstances for so low a fee, or it was simply inaccurate. The highest grower payoffs appeared to be one of the following:

(1) per head fees of $6 on arrival plus $6 at time of marketing,

(2) $4.50 per head on arrival plus 2 1/2 cents per pound of gain plus up to $3 per head extra for high feed efficiency.

Several growers reported their contracts relied mainly on fees per pound of gain; the range in cents per pound was from 2 1/2 to 4 1/2. About 1/2 of all the yardage fees were 7 cents per day. Yardage fees were rarely reported by growers working with the large contractors. About 3/4 of those growers working with large contractors relied on fees per head. No fees below $6 per head were observed in that group and there was a considerable number in the $8 to $10 range.

The lowest fees were associated with a second fee or profit-sharing and/or a sizable incentive program. For example, 93 percent of those reporting arrival fees in the range of $2-$4.50 said they also had an incentive program while only 47 percent of those reporting higher arrival fees reported receiving incentives. As shown above, 83 percent of the total finishers receiving arrival fees also reported receiving extra incentives (and possible penalties), while 52 percent of all finishers reported receiving extra incentives.

The types of other arrangements (than the three fees specified above) spelled out by 234 finishers were as follows:

Percent of 234 Answering	Percent of All Finishers	Other Arrangements (fees)
49	9.6	Set fee per pound weight gain or weight sold
13	2.5	Fee related to feed conversion
14	2.7	Profit share
14	2.9	Fee per month or per building used per month
10	2.0	Fee per head or per head per day
100	19.7	

There were 300-grower-finishers who gave 442 answers describing their incentives/penalty program. They were as follows:

Percent of 234 Answering	Percent of All Finishers	Other Arrangements (fees)
30.0	7.1	Feed conversion
37.0	8.6	Feed conversion and livability
32.0	7.4	Livability
0.5	0.1	Livability and leanness
0.5	0.1	Feed conversion and even market weights
100.0	23.3	

In summary, we did not ask for grower estimates of the total payment per head to grower-finishers. However, payments in the range of $7 to $9 per head were typical. There is a great diversity of payment plans. Almost all plans contain a base fee per head (sometimes per head per day). Overall, it appears 3 percent solely had profit sharing while 9 to 12 percent had profit-sharing in addition. Beyond that base fee, about 12 percent of the finishers received some sort of fee related to weight gain or weight sold or feed conversion. Beyond all that, 23 percent of the grower-finishers had incentive/penalty provisions based on feed conversion, livability or both.

Fees Growers Report for Producing Pigs

Growers who are pig producers reported the following distribution of their payments:

65%	-	fee per head when pigs marketed
12%	-	cents per pound when pigs marketed
11%	-	formula fee related to current market prices
7%	-	fee per sow
3%	-	one pig per litter
1%	-	set percent of gross sales
1%	-	set percent of profits
100%		

In a few cases, there was a combination of fees such as fee per pig marketed and fee per sow.

In addition to those fees, 52 percent of the pig producers reported they received incentives/penalties. Most of these related to farrowing efficiency -- stated in various ways. For the 266 operations providing answers about incentives, the replies were:

Percent of 226	
44	pigs saved per year
27	pigs weaned per litter
8	pigs marketed per sow weaned
17	average weight over 40 pounds
13	sow death loss
9	percent crates filled
118	

The total percentage exceeds 100 because of multiple replies.

The sizes of individual payments were:

Mean	Range	Type Payment
$12.67	$4-$40	Dollars per pig marketed
70¢	20-97	Cents per pound of pigs marketed
$9.71	0-22	Fee per month per sow handled
23%	0-37	Percent of sales

Most large contractors had a base payment per head of pigs marketed plus incentive payments for productivity (usually pigs per

litter or pigs per sow in inventory). Growers of one large contractor identified their base as $9.50 per pig while growers of another large contractor identified their base payment as $14.50 per head. Most other growers for large contractors identified their payments as being within that $9.50 to $14.50 range. Since the details of the incentive payments aren't clear, we don't know how similar that total payments were among the large contractors.

Small contractors tended to rely on slightly larger payments per pig (more in the range of $12 to $18) than paid by large contractors but only a minority provided extra productivity incentives. The extreme payment of $40 per pig noted above in the summary range was an exceptional case in which the grower provided everything and received a fixed price from an investor group.

In summary, a large majority of pig producers reported they were rewarded by fees per pig marketed (or per cwt. of pigs marketed). In addition, about half apparently received some additional incentives of which a majority are tied to pigs saved.

Fees Growers Report for Farrow-to-Finish

Farrow-to-finish growers reported the following distribution of their payments:

73%	-	dollars per head when pigs marketed
18%	-	cents per pound of hogs marketed
4%	-	combination of the two above
5%	-	profit share
100%		

In addition to those fees, 42 percent reported that they received performance incentives of penalties, but only a few spelled out their nature. Generally they involved feed conversion

and/or death loss and/or pigs saved or pigs weaned per litter, and/or percent crates filled.

We have the average fees reported for only 97 F-F growers. The answers are distributed as follows:

Mean	Range	
$17.17	$9.25-$27.00	dollars per head marketed
12.3	12.0-12.5¢	cents per pound marketed
64%	9-75%	share of profits

Given the small number of replies, they should be treated with caution. The lower fees were associated with incentive premiums which may have added significantly to the total pay. The 12 1/2 cents per pound would amount to $30 for a 240 pound hog - a payment that appeared somewhat better than the other fees. About 30% of the F-F growers claimed they provided the breeding stock, so they would expect higher pay than those who didn't. One producer of breeding stock reported a fee of $18 per head of slaughter hogs with premiums for the breeding animals and a share of "profits." Another grower that was producing F-F for an EC feed dealer reported his contract in detail. He received $15 to $19.25 per head depending on pigs weaned per litter plus a premium of up to $1.25 per head for percent crates filled, plus 4 1/2 cents per pound gain over the 45 pound feeder pig. For example:

$17.75	for 9.5 pigs weaned per litter
1.00	for 110% crates filled
8.77	per head 4 1/2¢ for adding 195 lb. (240 lb. market)
$27.52	

Contract Share of Growers' Family Income and Hired Labor

Growers were asked, "What percent of your family income is derived from your contracting arrangements?" Answers varied from zero to 100 percent with a mean of 33.5 percent for the 1715 answers. The mean answers by size group were positively associated as follows:

Size Group	Mean Percent Family Income
500-999	18.5
1000-1999	25.0
2000-2999	37.0
3000-4999	51.5
5000-9999	56.5
10,000 +	67.0

Those growers who were also in independent production had a mean percent family income from contracting of 25.5 percent versus 32.5 percent for those wanting to become independent versus 43.5 percent for those not wanting to become independent.

The mean percentage of family income from contracting appeared to be related inversely to the age of the operation, as follows:

Period Begun Production	Mean Percent Family Income
1940s	17
1950s	20
1960s	41
1970s	36
1980s	46

Growers were asked, "How many hours per week of hired labor do you use in your hog contracting operation?" The answers of 813 units ranged widely from one to 110 hours with a mean of 45 hours. As expected, there was a positive association between amount of

hired labor and the size unit (table 39). Only those units marketing more than 5000 head averaged one or more full-time employees.

Appendix A

Estimation Difficulties

Our 1987 study of structure excluded large contractors but estimated a volume of 4,956,000 MH in 1986 by 1009 farm contractors (the group called small contractors here). Since our current estimate for 1988 is 5,354,000 MH for 1002 small contractors, a growth of 398,000 or 8 percent is indicated. That growth rate appears too low. Probably the 1986 numbers were over-estimated -- they were based on a much smaller sample of contractors than in the present study.

For the 1986 to 1988 growth rate of 8 percent by small contractors to be reconciled with their higher 1987 to 1988 growth rates of 16 percent, either there was high negative growth 1986 to 1987, or there was a sizable net exit of operations from 1986 to 1988. Since the estimated number of small contractor firms is about the same in 1988 as 1986, there was not a sizable net exit. Forced to choose between a high negative growth rate 1986 to 1987 or an over-estimation of small contractor numbers and marketings in 1986, we chose the latter as more likely. An over-estimate of 600,000 contract MH in the 1986 study seems plausible.

Our current study estimated 1002 small contractors while our 1987 study estimated 1009 -- likely an over-estimate. While that comparison might suggest great stability in contracting, further analysis suggests that there has been a considerable amount of entry since 1986 balanced by a somewhat smaller amount of exit from

contracting. Of the 903 contractors providing the year they began contracting, 381 or 31 percent began in 1987 or later, that is, after the 1987 study (table 4).

Our grower responses were about six times as numerous in the 1989 sample as in the 1987 survey. While our estimated population of growers is still too low, it is much larger at 1900 than the 829 estimated in 1987. What was the source of 1071 more growers? Two major sources were (1) 748 "entrants" in 1987-88 (growers in the 1989 survey who said they began contracting in 1987 or 1988) and (2) much greater numbers of small sizes (500-1999) of growers. Much of the second source results from our sampling the 500-999 expected size group for the first time in our 1989 survey. We estimated 241 and 287 "non-entrant" operations in the two smallest size groups in 1989 versus only six in the 1987 survey (table 40).

Our survey sample was too small in 1987 to have much accuracy by size groups, so the 1989 numbers in table 40 should be a considerably more reliable picture. The sizable proportion of grower entrants in 1987-88 into contracting (748 out of 1900) suggests a fairly rapid growth. However, that large entry is likely partially counter-balanced by exits, of which we have no survey estimates. See, however, the data on contractor drops of growers.

It was surprising to find the estimated number of growers rising from 849 to 1900 while the estimated number of MH rose only from 2,663,000 to 3,003,000 from the 1987 survey to the 1989

survey. The explanation has two parts: (1) as already noted, a large part of the increased number of growers were in the two smallest sizes and they added only 540,000 to the MH estimates, and (2) a much higher proportion of grower output in the 1989 survey is in FP production. Thus, the grower output of MH was up 341,000 or 13 percent from 1987 to 1989 while their output of FP was up 1,953,000 or 332 percent (table 41). It would appear that there has been only a slow growth in grower output of MH but a much faster growth in grower output of FP. However, we would urge caution in using these numbers as any sort of precise measurements of those two trends.

Appendix B

List of States by Region

The regional analyses uses a fairly common set of regions. The Northeast (NE) includes the states of CT, MA, ME, NH, NJ, NY, PA, RI, VT. The East North Central (ENC) includes the states of IL, IN, MI, OH, WI. The West North Central (WNC) includes IA, KS, MN, MO, ND, NE, SD. The South Atlantic (SA) includes DE, FL, GA, MD, NC, SC, VA, WV. The South Central (SC) includes AL, AR, KY, LA, MS, OK, TN, TX. The West (W) includes AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY. The consolidated regions are the NC or North Central (ENC and WNC), the EC or East Coast (NE and SA) and the RON or rest of the nation (SC and W). We had responses from all the 50 states except NH, VT, CT and AK.

Table 1

Growth in Marketings of MH & FP, 1987 to 1988,
by Size of Contractor*

Size	Contract MH87	87-88 MH**	% 87-88	MH 87 Own-Prod	87-88 MH	% 87-88	Total MH 87	% 87-88
	(000 head)			(000 head)			(000 head)	
Small	2874	554	19%	1466	148	+10%	4340	16%
Large	2658	331	12%	949	-56	-6%	3607	8%
Total	5532	885	16%	2415	92	4%	7947	12%
	Contract FP87	FP 87-88	% 87-88	FP 87 Own-Prod	87-88 FP	% 87-88	Total FP 87	% 87-88
	(000 head)			(000 head)			(000 head)	
Small	280	33	12%	686	8	1%	966	4%
Large	378	194	51%	580	18	3%	958	22%
Total	658	227	34%	1266	26	2%	1924	13%

*Table is restricted to comparing those who reported numbers marketed of MH and/or FP in both 87 & 88, so totals are smaller than for the unrestricted marketings.

** 87-88 indicates the change in reported marketings from 1987 to 1988.

Table 2

Growth in Marketings of MH & FP,
1987 to 1988 by Region & Size of Contractor

Region	Size Contractor	Contract MH			Own-Produced MH			Total FP		
		87 No.	Chg. 87-88	% Chg.	87 No.	Chg. 87-88	% Chg.	87 No.	Chg. 87-88	% Chg.
WNC	Small	1627	383	24%	830	91	11%	646	37	6%
	Large	777	78	10	360	(46)	(13)	264	75	29
	Total	2404	461	19	1190	45	4	910	112	12
ENC	Small	475	13	3	184	39	21	194	18	9
	Large	152	65	43	46	(-1)	(2)	95	17	18
	Total	627	78	12	230	38	17	289	35	12
EC	Small	767	135	18	344	14	4	67	2	3
	Large	1098	183	17	425	(9)	(2)	583	110	19
	Total	1815	318	17	769	5	1	650	112	17
RON	Small	6	23	383	107	4	4	59	(16)	(27)
	Large	680	6	1	117	0	0	16	8	50
	Total	686	29	4	224	4	2	75	(8)	(11)
Grand Total		5532	886	16	2413	92	4	1924	251	13

Note: The rough way the large contractors' marketings were distributed among regions, as described in the text, should be considered in interpreting this table. Because of rounding, totals may vary between tables by 1 or 2 thousand head.

Table 3

Growth in Marketings, 1987 to 1988
by Size of Contractor

(87 marketing numbers & changes in 000 head)

	Contract MH			Own-Produced MH			All FP		
Size Group	87 No.	Chg 87-88	% Chg	87 No.	Chg 87-89	% Chg	87 No.	Chg 87-88	% Chg
500-1999	88	30	34	100	15	15	83	(39)	(47)
2000-4999	497	66	13	453	52	11	238	12	5
5000-9999	532	35	7	411	11	3	119	23	19
10,000-49,999	1757	423	24	502	70	14	526	29	6
50,000 up	2658	331	12	949	(56)	(6)	958	212	22
Total	5532	885	16	2415	92	4	1924	237	12

Table 4

Number of Contractors by Year of Entry into Contracting

Entry Period	Number	%
None Given	121	-
1960s	26	3
1970s	49	6
1980-82	101	11
1983-84	189	21
1985-86	256	28
1987-88	281	31
	1023	100

Table 5

Output Plans by Type of Contractor

Output Plan by 1992	Contractor Type			
	Farmer	Feed Related	"Big" Contractor	Other Agbusiness
Larger	31%	61%	86%	75%
Same	50	33	14	15
Smaller	9	4	0	10
Out of Contracting	10	2	0	0
	100	100	100	100

Table 6

Output Plans of Contractors by Region

	Region			
Output Plan by 1992	WNC	ENC	EC	RON
Larger	39%	48%	42%	58%
Same	44	39	45	33
Smaller	7	11	8	9
Out of Contracting	10	2	5	0
	100%	100%	100%	100%

Table 7

Type of Contractor Contracting
by Output Plans

Type of Contracting	Output by '92				
	Up	Same	Down	Out	Total
Strictly Finishing	43.5%	41.0%	7.4%	8.1%	100.0%
Finishing Plus One or More Other Types	53.6	34.4	10.4	1.6	100.0
Pig Production & F-F & Their Combination	15.1	67.7	8.3	8.9	100.0

Table 8

Market Hogs Marketed by Contractors in 1988 by Class & Region

	Contract MH				Own-Produced MH				Total MH			
	Small*		Large*		Small*		Large*		Small*		Large*	
Region	(000 head)	%	(000 head)	%	(000 head)	%	(000 head)	%	(000 head)	%	(000 head)	%
WNC	2,064	58	855	27	982	56	315	35	3,046	57	1,170	28
ENC	512	14	217	7	223	13	45	5	735	14	262	6
NE	581	16	274	8	184	10	14	2	765	14	288	7
SA	405	1	1,185	37	264	15	402	45	669	12	1,587	39
RON	28	1	686	21	111	6	117	13	139	3	803	20
	3,590	100	3,217	100	1,764	100	893	100	5,354	100	4,110	100

*Indicates class size of contractor.

Table 9

1988 Contractor FP by Class & Region

	Contract FP				Own-Produced FP			
	Small*		Large*		Small*		Large*	
Region	(000 head)	%	(000 head)	%	(000 head)	%	(000 head)	%
WNC	169	50	209	37	537	75	130	22
ENC	74	22	57	10	140	20	55	9
EC	86	25	281	49	-	-	412	69
RON	9	3	24	4	34	5	-	-
	338	100	572	100	711	100	597	100

*Indicates class size of contractor.

Warning: these numbers probably overestimate the sales of FP by contractors while the contract FP grossly underestimates the numbers of pigs produced for contractor feeding out. See "Magnitude of Contract Production" in the text.

Table 10

Market Hogs & Feeder Pigs Marketed
by Contractors in 1988 by Size*

Size	Contract MH (000)	Contract MH %	Own-Produced MH (000)	Own-Produced MH %	Contract FP (000)	Contract FP %	Own-Produced FP (000)	Own-Produced FP %
500-1000	16	0.2	4	0.2	20	2	0	0
1000-1999	137	2	113	4	6	1	46	4
2000-2999	234	3	182	7	25	3	57	4
3000-4999	370	5	328	12	43	5	139	11
5000-9999	581	9	459	17	86	9	72	5
10,000-49,999	2,252	33	678	25	158	17	397	30
50,000 +	3,217	47	893	34	572	63	597	46
	6,807	100	2,657	100	910	100	1,308	100

*All "large contractors" are in the 50,000+ size.

See the warning in Table B concerning FP.

Table 11

1988 Contractor MH & FP by Type of Contractor

Type Contractor	Contract MH (000)	%	Own-Produced MH (000)	%	Contract FP (000)	%	Own-Produced FP (000)	%	Number of Operations II	%
Farmer	1,221	18	1,367	52	226	25	465	35	698	68
Feed Dealer or Mfg.	1,854	27	251	9	82	9	116	9	214	21
"Big" Contractor	3,435	51	912	34	572	63	543	42	28	3
Other Agbusiness	298	4	128	5	30	3	184	14	83	8
	6,808	100	2,658	100	910	100	1,308	100	1,023	100

Note: It is important to note that these are self-descriptions. Especially note that 28 people/firms called themselves and are included as "big contractors," while only 21 were classed as "large contractors" based on marketings. Thus, the big contractor volume of contract MH at 3,435,000 was 218,000 more than the large contractor volume of contract MH in 1988.

See the warning in Table B concerning FP numbers.

Table 12

Numbers and Percentages of Growers Reporting
MH and FP Marketings for 1988

# Growers	% of 1900 Growers	
1013	53%	Contract MH > 0 but Own MH = 0
174	9%	Contract MH > 0 and Own MH > 0
151	8%	Contract MH = 0 but Own MH > 0
Sub-totals 1187	62%	Contract MH > 0
Sub-totals 325	17%	Own MH > 0
649	34%	Contract FP > 0 but own FP = 0
83	4%	Contract FP > 0 and Own FP > 0
129	7%	Contract FP = 0 but Own FP > 0
Sub-totals 732	38%	Contract FP > 0
Sub-totals 212	11%	Own FP > 0

Note: These percentages appear slightly inconsistent with the percentage of growers reporting their activities on the opening question of the schedule because people may occasionally err and/or they may have been involved in an activity in 87 but report no marketings in 88.

Table 13

Average Grower Marketings of
MH and FP by Region, 1988

Region	Contract MH	Contract FP	Own-Prod. MH	Own-Prod. FP
WNC	1860	2399	770	1330
ENC	1917	3335	969	3161
NE	3219	2294	374	978
SA	4033	5591	841	1234
RON	1798	2846	5275	2299
Nation	2277	3052	929	1433

Note: Means are computed on the basis of those reporting each type of production.

Table 14

Grower Marketings of MH and FP
by Size of Operation, 1988

Size	Contract MH (000)	Contract MH %	Contract FP (000)	Contract FP %	Own-Prod. MH (000)	Own-Prod. MH %	Own-Prod. FP (000)	Own-Prod. FP %
500-1000	107	4	96	4	28	10	14	5
1000-1999	456	17	126	6	49	16	76	25
2000-2999	435	16	176	8	12	4	17	5
3000-4999	545	20	372	16	91	30	19	6
5000-9999	520	19	774	35	34	11	42	14
10,000 +	640	24	690	31	86	29	139	45
	2703	100	2234	100	300	100	307	100

Table 15

Distribution of Numbers of Grower Operations
by Type of Contracting & Size of Operation

Contracting Type	500-1999	2000-4999	5000-9999	10,000 +	Total
Strictly Finisher	57.5	33.5	6.5	2.7	100.0
Strictly Pig Production	51.6	26.9	14.5	7.0	100.0
Strictly Farrow to Finish	36.6	25.8	25.1	12.5	100.0
All Growers	52.1	30.8	11.0	6.1	100.0

Table 16

1988 Grower Contract Marketings by Age-Group

Grower Age-Group	N	Contract MH # growers	Contract MH Marketings (000 head)	Contract MH %	Contract FP # growers	Contract FP Marketings (000 head)	Contract FP %
Under 40	940	547	1,163	43	418	1,295	58
40 and over	930	639	1,540	57	315	939	42
	1,870*	1,186	2,703	100	733	2,234	100

*30 didn't give age.

Table 16a

Grower Marketing of Total Hogs & Pigs 1988
by Type of Contract Production

Finishing Only	2,324	2,245	18,000
Pig Production Only	1,718	3,150	39,000
F-F Only	500	4,687	26,000
Breeding Stock Only	237	8,602	15,000
Combinations of Above	765	4,142	21,800
	5,544	2,918	

Table 17

Facility Changes Reported by Growers
to Obtain a Contract

	Type of Facility			
Facility Changes	Farrowing	Nursery/ Grower	Finishing	Breeding or Gestation
Built new	12	10	8	11
Leased/Purchased	2	2	3	2
Modified/Upgraded	9	8	11	5

*Numbers are % of all 1900 growers

Table 18

Contractor Responses by Region
Concerning Typical Grower Expense to Build
or Change Facilities to Obtain a Contract

Average Grower Expenditure	Combined Regions		
	North Central	East Coast	Rest of Nation
None	39%	21%	72%
$1-4,999	53	30	12
$5000-49,999	6	27	12
$50,000 +	2	22	4
	100	100	100

Table 19

Contractor Responses by Contractor Type
Concerning Typical Grower Expense to Build
or Change Facilities to Obtain a Contract

Average Grower Expenditure	Contractor Type: Farmer	Feed Related	Big Contractor	Other Agribusiness	Total
None	39	39	4	46	38
$1-4,999	51	50	12	25	48
$5,000-49,999	8	8	31	17	9
$50,000 +	2	3	53	12	5
	100	100	100	100	100

Table 20

Distribution by Region of Grower Answers on
Maintaining or Replacing Facilities from Contract Income

Reply on Facilities	North Central	East Coast	RON	Nation
Yes, can maintain	91%	88%	86%	89%
Yes, can replace	30	37	53	34

Table 21

Grower Problems with Contractor
by Type of Contractor

	Type of Contractor				
Problem	Farmers	Feed-Related	Big Contractors	Other Agribusiness	Total
No answer	39%	47%	42%	48%	44
No problem	29	31	36	18	30
Poor livestock	14	6	10	5	9
Facilities not kept full	5	6	1	10	5
Insufficient or slow pay	4	7	2	17	5
Communication hassels	3	3	6	2	4

Note: Columns would add to 100% if other problems & combination answers were included. Those given include the main problems listed.

Table 22

More Frequent Reasons Why Growers
Contract by Region

Reasons	Combined Regions			
	N. Central	East Coast	Rest of Nation	Total
Financial	37	25	26	32
Less market risk	20	30	25	23
Better &/or more steady income	9	12	10	9
Assured market	9	5	4	7
Other and Combination of reasons	25	28	35	29
	100	100	100	100

Note: percentages are of the 1475 growers giving reasons.

Table 23

Independents' Willingness to be a Grower by Region

	Combined Regions			
Be a Grower?	N. Central	East Coast	RON	Nation
Am considering it	1%	2%	2%	1%
Might consider it	19	24	33	20
Would only if financially forced	29	32	25	29
No way	51	42	40	50
	100%	100%	100%	100%

Table 24

Reasons Given by Independents for Their Strong Opposition to Being a Grower by Region

	Combined Regions			
Reasons for Opposition	N. Central	East Coast	RON	Nation
I want to keep my independence	33%	37%	16%	32%
Opposed to contracting	16	17	23	16
Contracting is poor pay	14	10	20	14
My age or health prevents	6	5	1	6
Inadequate facilities	5	2	7	5
Fear of disease	3	3	7	4
Generally not interested	22	25	20	22
Other	1	1	6	1
	100%	100%	100%	100%

Table 25

Independents' Willingness to Become a Farm Contractor by Region

	Combined Regions			
Be a Contractor	N. Central	East Coast	RON	Nation
Am considering it	1%	2%	1	1%
Might consider it	29	30	38	30
Not interested	70	68	61	69
	100%	100%	100%	100%

Table 26

Reasons Given by Independents for Their Lack of Any Interest in Becoming a Contractor by Region

Reasons	Combined Regions			
	N. Central	East Coast	RON	Nation
Opposition to contracting	7%	12%	8%	8%
Personal preference	32	22	25	31
Workmanship	8	12	11	8
Contracting doesn't pay	16	18	27	17
Prefer status quo	25	18	20	25
Am cutting back efforts	6	1	4	5
Generally not interested and Other	6	17	5	6
	100%	100%	100%	100%

Table 27

Market Outlets of Contractors by Region

Outlet	Region		
	N. Central	E. Coast	Remainder
Shop around every sale	47%	7	42
Same outlet at going price	39	53	40
Standing agreement & premium price	12	36	16
Other	2	4	2
	100	100	100

Table 28

Average Percentage of Resources Provided
by Contractor by Type of Activity

	Pig Prod.	F-F	Finishing
Breeding Stock	90	97	N/A
Feed	92	98	98
Medications & Vet Care	89	99	96
Facilities	2	7	1
Utilities	N/A	N/A	3
Labor & day to day mgmt.	4	11	7

Note: N/A is not applicable or not asked. These data were provided by contractors.

Table 29

Contractor Comparison of Production Costs

Production Costs*	Finishing Pigs	F-F	Pig Production
Costs Same	57%	64%	70%
Own Costs Less	25	15	22
Own Costs Higher	18	21	8
	100	100	100

*Note: Contractor compares own average costs to those of an efficient, large scale independent in the same area.

Table 30

Description of Type of Contractor
by Region, 1988

Self-Description	North Central	East Coast	RON	Total
Farmer	87%	11%	2%	100%
Feed related	82	15	3	100
Big contractor	31	64	5	100
Other Agribusiness	55	5	40	100

Table 31

Type of Contractor by Feed Source
for Contract Hog Production

Type	Relation to Feed Source						
	We are a dealer	We are a Com'l Feed Mfgr	Take bids	Contract With Several	Contract With One	Have own Mill or other	Total
Farmer	14	3	5	19	52	7	100
Feed mfg	11	89	-	-	-	-	100
Feed dealer	97	-	2	-	1	-	100
Big contractor	33	53	-	7	-	7	100
Other Agbus.	5	2	5	22	66	0	100
All Types	28	9	4	15	39	5	100

Table 32

Grower Description of Contractors by Region

Description of Contractor	NC	EC	RON	Nation
Farmer	29	20	23	27
Feed-related	40	48	12	39
Big Contractor	18	24	61	23
Other Agbus.	13	8	4	11
	100	100	100	100

Table 33

Average Size Grower Marketings
by Type Contractor, 1988

Perceived Type	Contract MH 88	Contract FP 88
Farmer	1814	2044
Feed-Related	2179	2929
Big Contractor	3233	5183
Agbusiness & Combination	1757	2021

Note: Contractor type as perceived by growers. Average are computed for those marketing contract MH or those marketing contract FP.

Table 34

Frequency of Growers & Their Marketings by Type Grower

Type Grower	% of Growers	% of Contract MH	% of Contract FP	% Own-Produced MH	% Own-Produced FP
Part-time farmer	28	26	10	9	13
Full-time farmer	59	56	67	75	83
Feed dealer related	2	1	-	1	-
Contractor related	3	4	6	3	-
Combination of above	6	9	14	12	4
Other	2	4	3	-	-
	100	100	100	100	100

Table 35

Period Growers Began Contracting
by 1987-88 Size

	Size Groups				
Date Contracting Began	500-1999	2000-4999	5000-9999	10,000 +	Total
1988	74%	17%	6%	3%	100%
1987	41	42	9	8	100
1986	51	39	10	1	100
1984-85	48	29	15	8	100
Before 1984	40	45	16	9	100

Table 36

Grower 1988 Contract Marketings
by Period Began Contracting

Date Contracting Began	MH % Number Growers	MH % Marketings	MH Average Size	FP % Number Growers	FP % Marketings	FP Average Size
1986-88	55%	40%	1,632	51%	49%	2,987
1983-85	28	37	3,022	25	25	2,996
Before 1983	17	23	3,042	24	26	3,337
	100	100	2,262	100	100	3,070

Table 37

Period Growers Began Contracting by Region

Date Contracting Began	WNC	ENC	EC	RON	Total
1986-88	56%	16%	20%	8%	100%
1983-85	57	5	26	11	100
Before 1983	37	20	33	10	100

Table 38

Distribution of F-F Growers by Share of Resources They Claimed to Provide

Resource Provided	No. Growers	% Shares Provided by Grower					
		Zero	1-40	41-60	61-99	100	Total
Breeding Stock	197	69%	-	-	1%	30%	100%
Facilities	197	1	-	-	-	99	100
Utilities	197	7	-	1	1	91	100
Feed	210	66	4	8	-	22	100
Medicines	204	66	1	-	-	33	100
Labor	201	5	2	-	-	93	100

Table 39

Average Hours Per Week of Labor
Hired by Contract Growers by Size Operation

No. Units Reporting	Size of Marketings	Average Hours Hired Labor
142	500-999	16
148	1000-1999	17
130	2000-2999	21
145	3000-4999	29
151	5000-9999	61
97	10,000 +	164

Table 40

Comparison of Estimates of Number of Growers
in the 1987 and 1989 Surveys

	Size Group						
Surveys	500-999	1000-1999	2000-2999	3000-4999	5000-9999	10,000 & more	Sum
1987	N/A	6	318	189	210	107	829
1989	462	528	295	291	209	115	1900
Entrants 1987-88	221	241	94	102	54	36	748

Table 41

Comparison of Estimates of Grower Marketings
in the 1987 & 1989 Surveys

Surveys	Size Group 500-999	1000-1999	2000-2999	3000-4999	5000-9999	10,000 & more	Sum
			Total MH (000 head)				
1987	N/A	-	537	439	774	913	2,662
1989	135	505	446	636	554	727	3,003
			Total FP (000 head)				
1987	N/A	-	35	138	235	179	588
1989	111	202	193	391	815	828	2,541