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HOG AND PIG REPORTS:

A Handbook on Surveying and Estimating Procedures

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U.S. Department of Agriculture

Economics, Statistics, and Cooperatives Service

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Crop
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The Crop Reporting Board of the U.S. Department of Agriculture's Economics, Statistics, and Cooperatives Service regularly publishes estimates of hog and pig inventories and births. This handbook, directed at producers, analysts, and economists who regularly use these estimates, explains how data for these estimates are collected, discusses how the estimates are made, comments on their accuracy, and suggests ways the estimates can be used.

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HOG AND PIG REPORTS:
A Handbook on Surveying and Estimating Procedures

INTRODUCTION

The ESCS Crop Reporting Board publishes quarterly estimates of hog and pig inventories and births, using the most advanced statistical survey techniques available. 1/ This handbook provides producers, analysts, and other data users background on how ESCS hog and pig estimates are made and how they can be used. It focuses on data collection methods and the accuracy of the estimates.

The quarterly hog and pig reports provide data users with basic statistics on pork production. The reports relating to March 1, June 1, September 1, and December 1 data are issued between the 20th and the 23rd of the month. The basic items estimated are inventories, number of sows farrowed, number of sows to farrow, and the pig crop. The March and September reports include data for only the 14 major hog producing States (fig. 1). 2/ These States account for approximately 85 percent of U.S. hog population. The June and December reports include data for all States. The December report also includes value of inventory, number of hog operations, and size group data.

The ESCS estimates represent the combined efforts of both the State ESCS statistical offices and the Washington, D.C. office. The State offices follow prescribed procedures to select the sample; collect, review, and edit the data; summarize to the State level; and submit recommendations and comments pertaining to them to Washington. In Washington, the State data are summarized into major regions and national totals. The ESCS Crop Reporting Board members review the various data and establish national and regional estimates.

State and national estimates are released to the public in Washington, D.C. at 3 p.m. on scheduled dates; the State offices then issue reports and press releases for distribution. Strict security measures are employed in the State statistical offices and the Crop Reporting Board to prevent premature disclosure of the estimates before scheduled release time.

1/ For example, see Hogs and Pigs (MtAn 4 (12-78), released Dec. 21, 1978, 3 p.m. e.t., Crop Reporting Board; Economics, Statistics, and Cooperatives Service (ESCS); U.S. Department of Agriculture.

2/ Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Minnesota, Missouri, Nebraska, North Carolina, Ohio, South Dakota, Texas, and Wisconsin.

U.S. Hog and Pig Estimating Program, Frequency of Estimates, and Percent of Total, U.S. Inventory on December 1, 1978

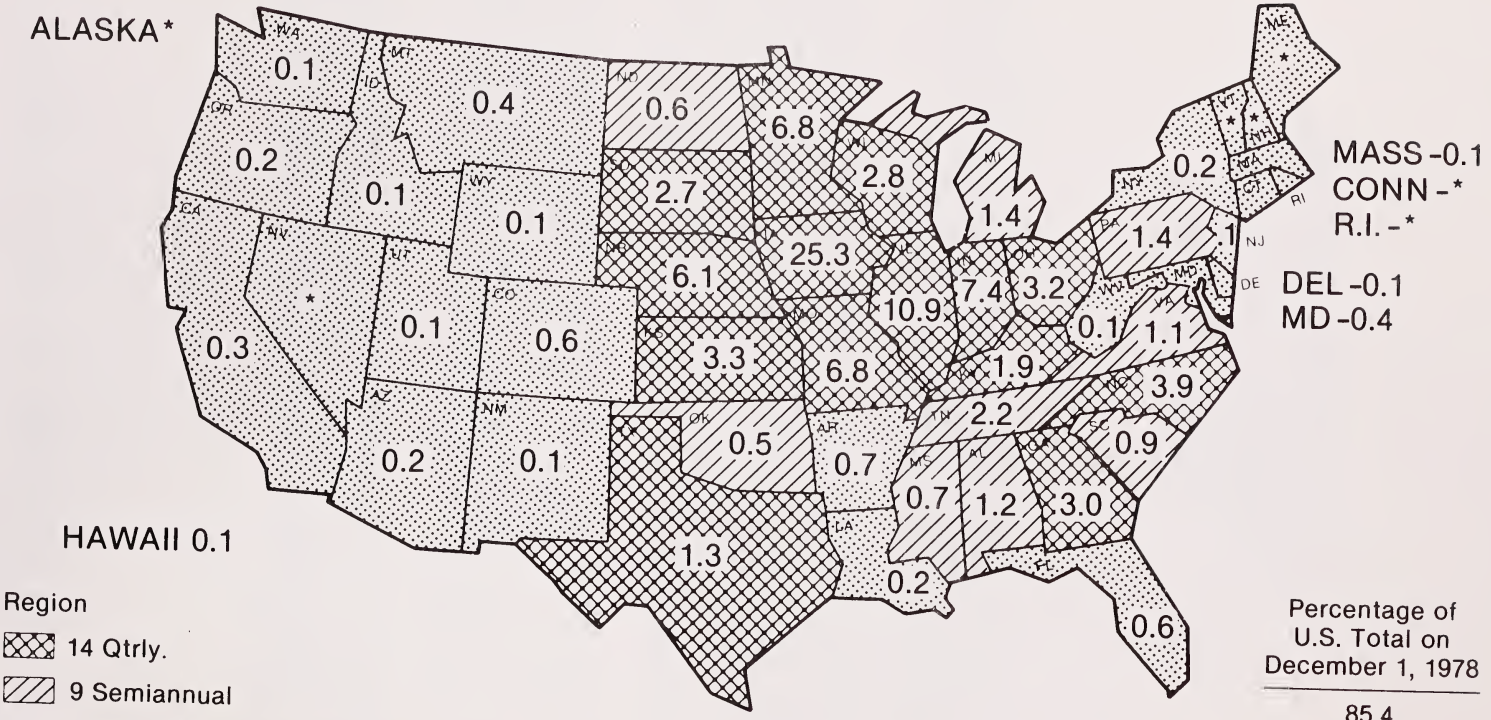


Figure 1

DATA COLLECTION

Estimates of hogs and pigs are based on multiple frame probability surveys. Two sampling frames are used: a list frame and an area frame. This method is an efficient method of compiling reliable agricultural statistics. The sampling frames provide the basic sample for the probability surveys. Probability theory indicates each individual in the universe has a positive chance of being selected in the sample. This technique permits the Crop Reporting Board to arrive at an unbiased estimate for all hogs and pigs with an accompanying measure of reliability or accuracy.

State offices construct a list frame from various sources consisting of producers who may raise hogs. A random stratified hog sample is selected from this list by the State offices for each survey. The area frame represents those hog producers not on the list. Used together, these two frames complement each other and the total sample is representative of all hog producers. The multiple frame sampling is used in the 14 major hog producing States in March and September and in all States in June and December. Use of the multiple frame combines the desirable attributes of both frames.

The area sampling frame is an exhaustive listing of small partitioned units of land (segments) which can be sampled. Area frame surveys gather data for hog and pig estimates in June and December in the 48 contiguous States. These survey segments include about one-half of 1 percent of the U.S. land area. The sample of land segments is supplemented by lists of large hog producers in each State. These large operators are sampled at a high rate to reflect their relative importance in the industry for their area.

For the list frame to be efficient, it should be reasonably complete with reliable control data--a measure of size--for purposes of stratification. In the 14 major hog producing States, list frame samples for each hog survey usually consist of about 1,500-2,000 farm operators per State. About one-fourth of the hog data are collected by mail questionnaire, one-half by telephone interviews, and the remainder by personal interview.

Listed below are size group data for a State that reflect list control and sampling information. For example, the population of strata 83 consists of all known farm operations on the list in this particular State having approximately 100-199 hogs. The list population is 10,480, in this case. The sample is the number of farm operations sampled from the population for this particular survey. The sample count for strata 83 is 414 and the sampling interval is 25.314. This means each hog item reported by the 414 sampled producers will be multipled by 25.314 to obtain the survey indication for that strata. The 175 area frame operators (strata 98) represent those farm operations reporting hogs on the most recent area frame survey who are not on the list at the time the sample is drawn. The sum of all the strata is the State survey indication.

	Population		Sample	
Strata	Range	Count	Count	Interval
81	0	89,072	469	189.919
82	1-99 hogs	16,618	328	50.665
83	100-199 hogs	10,480	414	25.314
84	200-399 hogs	3,417	162	21.093
85	400-999 hogs	3,764	260	14.477
86	1,000-2,499 hogs	500	125	4.000
87	2,500+ hogs	10	10	1.000
	List totals	123,861	1,768	
98	Area frame	92,398	175	

The sample size of 1,943 producers (1,768 selected from the list and 175 from the area frame) represents 1.4 percent of the producers on the list. The sampling rate is close to 5 percent of the producers at the U.S. level. The average survey will collect sample data equal to about 10 percent of the estimated population, because the sample rate increases as size of operations increases.

The size of the sample will depend on available resources, the level of detail required in the statistical estimates, the precision desired, the variability of data being sampled, and the size of the universe or population.

FORMING THE ESTIMATES

Each State statistical office collects and reviews the survey data for its State and prepares State recommendations which are forwarded to Washington. States also submit comments on interpretation of survey data, circumstances concerning survey data collection and occurrences of weather, disease, and other factors affecting hog production.

In Washington, the Crop Reporting Board meets to review the current survey data and to establish national and regional estimates. It also reviews estimates set and published previously. Maximum use is made of survey data and other information available at the national and regional levels. Individual State recommendations prepared in the field offices are reviewed and changed, if necessary, to bring them to the level of the established national and regional estimates.

Check data, along with the original survey results, are used by statisticians as a basis for reviewing preliminary estimates and making revisions when necessary. Check data include the number of hogs slaughtered in commercial packing plants, available on a State and national basis. U.S. Census of Agriculture information, available every 5 years, provides additional check data.

The Crop Reporting Board constructs a U.S. balance sheet using estimates of the supply and the disappearance of hogs and pigs. The balance sheet used to review the December 1, 1978, estimates was as follows:

Item	1976	1977	1978
		Million head	
Previous Dec. 1 inventory	49.3	54.9	56.5
Pig crop and imports	84.4	86.2	88.3
Total supply	133.7	141.1	144.8
Slaughter	73.9	78.7	78.4
Exports and deaths	6.0	6.8	7.2
Total disappearance	79.9	85.5	85.6
Residual (see text)	1.1	.9	.7
Current Dec. 1 inventory	54.9	56.5	59.9

The balance sheet provides an additional check on survey inventory estimates. The residual figure represents the amount needed to bring the balance sheet into complete agreement. This residual, whether positive or negative, is a measure of completeness for the balance sheet items. The Crop Reporting Board makes the maximum

use of the survey data for setting the estimates of inventory and pig crop and still maintain the residual at a minimum level. Estimates of the balance sheet components of inventory, births, and deaths are subject to sampling variability. The component estimates also include nonsampling errors such as omissions, duplications, and mistakes in reporting, recording, and processing. These nonsampling errors are minimized through quality controls in the data collection process.

Another balance sheet is used to analyze the current inventory estimates and slaughter levels. This involves the market hog estimates and calculating a remaining balance. Tables 1 and 2 show June 1 and December 1 estimates of U.S. market hogs and a monthly balance of market hogs. A monthly commercial barrow and gilt slaughter indication is derived by dividing the federally inspected (FI) barrow and gilt slaughter by the percent that the FI data are of the total commercial slaughter.

Each month's adjusted commercial barrow and gilt slaughter are subtracted from the remaining market hog balance. The beginning inventory is shown as a percentage of the previous year. Each month's balance can be compared to the same month a year earlier and expressed as a percent change. When the percent change from the previous year is increasing, a slowdown in marketing is occurring and when the change from the previous year is decreasing, marketings are increasing.

The rate at which producers move gilts into the breeding herd can also influence the data in these tables. For example, when a gilt buildup is extremely heavy, marketings would drop percentagewise from the year earlier, but in reality it may be that the available market hogs are moving to market at the same rate as a year ago.

One type of approach for projecting the number of gilts added to the breeding inventory is shown in table 3. The federally inspected sow slaughter is adjusted to a commercial level and subtracted from a beginning breeding inventory. The residual needed to reach the level of breeding inventory shown for the next survey period is indicative of the gilts added for that 6-month period.

DATA RELATIONSHIPS

When setting hog inventory estimates on a consistent and repetitive basis, inventory levels should reflect the biological progression of the weight and age characteristics.

During the data review process, survey indications are reviewed using the relationships below:

1. Total market hogs versus previous 6-month pig crop.

2. Market hogs less than 60 pounds versus previous quarterly pig crop.

3. Market hogs 60-179 pounds versus quarterly pig crop from 4-6 months earlier.

4. Sows farrowed past 2 quarters versus breeding inventory 6 months earlier.

These relationships are reviewed in all States during the December and June surveys and in March and September in the 14 quarterly States.

Tables 4 and 5 show the relationships of market hogs to previous 6-month pig crop for the United States and 14 quarterly States. These comparisons remain fairly consistent over a period of time with changes reflecting different rates of gain and changes in rate at which gilts move into the breeding herd.

Table 1--Market hogs for June 1 and adjusted monthly commercial slaughter of barrows and gilts, United States 1/

Item	1970	1971	1972	1973	1974	1975	1976	1977	1978
					1,000 head				
Hogs for market	54,009	55,970	51,479	50,583	50,055	40,502	45,542	45,772	46,266
					Percent				
Percentage of previous year	109	104	92	98	99	81	112	101	101
					1,000 head				
Barrows and gilts:									
June --									
Slaughter	5,746	6,938	6,283	5,661	5,798	5,004	5,076	5,512	5,637
Balance	48,263	49,032	45,196	44,922	44,257	35,498	40,466	40,260	40,629
July--									
Slaughter	5,715	6,311	5,224	4,832	5,504	4,564	4,804	4,710	5,249
Balance	42,548	42,721	39,972	40,090	38,753	30,934	35,662	35,550	35,380
August--									
Slaughter	5,985	6,871	6,417	5,394	5,996	4,504	5,829	5,953	6,042
Balance	36,563	35,850	33,555	34,695	32,757	26,427	29,833	29,597	29,338
September--									
Slaughter	7,042	7,387	6,315	5,255	6,200	5,080	6,241	6,340	6,047
Balance	29,521	28,463	27,240	29,440	26,557	21,347	23,592	23,257	23,291
October--									
Slaughter	7,764	7,255	6,980	6,590	6,799	5,288	6,793	6,352	6,415
Balance	21,757	21,208	20,260	22,850	19,758	16,059	16,799	16,905	16,876
November--									
Slaughter	7,499	7,621	6,867	6,442	6,192	4,947	6,994	6,725	6,606
Balance	14,258	13,587	13,393	16,408	13,566	11,112	9,805	10,180	10,270
					Percent				
Percentage previous year	--	95	99	123	83	82	88	104	101
Percentage market hogs slaughter	73.6	75.7	74.0	67.7	72.9	72.6	78.5	77.8	77.8

-- = Not available.

1/ Commercial barrow and gilt slaughter is derived by dividing the federally inspected barrow and gilt slaughter by the federally inspected percentage of total commercial slaughter.

Table 2--Market hogs for December 1 and adjusted monthly commercial slaughter of barrows and gilts, United States 1/

Item	1972	1973	1974	1975	1976	1977	1978	1979
				1,000 head				
Hogs for market (Previous December estimate)	53,937	50,367	52,009	47,304	41,693	46,923	47,935	50,302
				Percent				
Percentage of previous year	93	93	104	91	88	112	102	105
				1,000 head				
Barrows and gilts:								
December 2/--								
Slaughter	7,636	6,109	5,810	6,132	5,424	6,426	6,056	--
Balance	46,301	44,258	46,199	41,172	36,269	40,498	41,879	--
January--								
Slaughter	6,590	6,602	6,745	6,345	5,390	5,737	5,855	--
Balance	39,711	37,656	39,454	34,827	30,879	34,761	36,024	--
February--								
Slaughter	6,457	5,711	5,576	5,579	4,886	5,662	5,687	--
Balance	33,254	31,945	33,878	29,248	25,993	29,099	30,337	--
March--								
Slaughter	7,993	6,635	6,566	5,788	6,334	7,124	6,659	--
Balance	25,261	25,310	27,312	23,460	19,659	21,975	23,678	--
April--								
Slaughter	6,898	5,998	6,854	6,340	5,819	6,317	6,100	--
Balance	18,363	19,312	20,458	17,120	13,840	15,658	17,578	--
May--								
Slaughter	6,888	6,613	7,007	5,362	5,064	5,764	6,186	--
Balance	11,475	12,699	13,451	11,758	8,776	9,894	11,392	--
				Percent				
Percentage previous year	98	111	106	87	75	113	115	--
Percentage market hogs slaughter	78.7	74.8	74.1	75.1	79.0	78.9	76.2	--

-- = Not available.

1/ Commercial barrow and gilt slaughter is derived by dividing the federally inspected barrow and gilt slaughter by the federally inspected percentage of total commercial slaughter. 2/ December of previous year.

Table 3--Breeding inventory for hogs and pigs in June and December with sow slaughter and gilts added, United States

Item	1972	1973	1974	1975	1976	1977	1978
				1,000 head			
December 1 breeding 1/	8,475	8,650	8,605	7,389	7,574	8,011	8,604
December-May:							
Commercial sow slaughter 2/	2,303	2,239	2,257	1,977	1,505	2,019	2,007
Gilts added (residual)	2,975	2,577	2,475	1,946	2,319	2,696	2,247
June 1 breeding	9,147	8,988	8,823	7,358	8,388	8,688	8,844
June-November:							
Commercial sow slaughter 2/	2,765	2,304	3,316	1,946	2,018	2,224	2,075
Gilts added (residual)	2,268	1,921	1,882	2,162	1,641	2,296	2,789

1/ December previous year.
2/ Federally inspected sow slaughter adjusted to a commercial total.

Table 4--Hogs and pigs: Relationship of market hogs to previous 6-month pig crop, United States

Year	June 1 market hogs	December-May pig crop, 1/	Market hogs as a percentage of pig crop
	- - - 1,000 head - - -		Percent
1968	51,279	49,077	104
1969	49,522	46,521	106
1970	54,009	52,126	104
1971	55,970	51,918	108
1972	51,479	47,523	108
1973	50,583	46,125	110
1974	50,055	44,792	112
1975	40,502	35,530	114
1976	45,542	42,177	108
1977	45,772	42,960	107
1978	46,266	42,341	109

	December 1 market hogs	June-November pig crop	Market hogs as a percentage of pig crop
	- - - 1,000 head - - -		Percent
1968	51,357	45,078	114
1969	47,857	42,155	114
1970	57,640	49,588	116
1971	53,937	46,006	117
1972	50,367	43,051	117
1973	52,009	41,998	124
1974	47,304	38,952	121
1975	41,693	35,656	117
1976	46,923	42,218	111
1977	47,935	43,202	111
1978	50,302	45,840	110

1/ December previous year.

Table 5--Relationships of market hogs to pig crop in the 14 States, by quarters

Survey period and year	Market hogs under 60 pounds compared with pig crop of previous quarter			Market hogs 60-179 pounds compared with pig crop of 4-6 months ago		
	Market hogs, March 1	Pig crop, December-February	Market hogs as a percentage of pig crop	Market hogs, March 1	Pig crop, September-November	Market hogs as a percentage of pig crop
	1,000 head		Percent	1,000 head		Percent
March 1 survey:						
1973	15,053	16,112	93	18,485	18,554	100
1974	14,792	15,767	94	19,094	18,295	104
1975	12,191	12,701	96	16,192	16,247	100
1976	13,617	14,696	98	15,050	15,168	99
1977	14,199	15,586	91	16,972	17,970	94
1978	14,590	15,626	93	17,296	18,421	94
1979	16,665	18,260	91	19,160	20,027	96

Survey period and year	Market hogs under 60 pounds compared with pig crop of previous quarter			Market hogs 60-179 pounds compared with pig crop of 4-6 months ago		
	Market hogs, June 1	Pig crop, March-May	Market hogs as a percentage of pig crop	Market hogs, June 1	Pig crop, December-February	Market hogs as a percentage of pig crop
	1,000 head		Percent	1,000 head		Percent
June 1 survey:						
1973	21,266	23,813	89	17,390	16,112	108
1974	20,673	23,243	89	17,082	15,767	108
1975	15,797	17,539	90	14,368	12,701	113
1976	18,825	21,525	88	15,731	14,696	107
1977	18,660	21,386	87	15,872	15,586	102
1978	18,041	20,716	86	16,533	15,626	106

Survey period and year	Market hogs under 60 pounds compared with pig crop of previous quarter			Market hogs 60-179 pounds compared with pig crop of 4-6 months ago		
	Market hogs, September 1	Pig crop, June-August	Market hogs as a percentage of pig crop	Market hogs, September 1	Pig crop, March-May	Market hogs as a percentage of pig crop
	1,000 head		Percent	1,000 head		Percent
September 1 survey:						
1973	17,865	18,063	99	20,878	23,913	87
1974	16,597	17,133	96	20,632	23,243	89
1975	14,380	15,068	95	16,178	17,539	92
1976	17,097	18,389	93	19,129	12,525	89
1977	17,500	18,768	93	18,624	21,386	87
1978	17,631	19,195	92	18,368	20,716	89

Survey period and year	Market hogs under 60 pounds compared with pig crop of previous quarter			Market hogs 60-179 pounds compared with pig crop of 4-6 months ago		
	Market hogs, December 1	Pig crop, September-November	Market hogs as a percentage of pig crop	Market hogs, December 1	Pig crop, June-August	Market hogs as a percentage of pig crop
	1,000 head		Percent	1,000 head		Percent
December 1 survey:						
1973	17,632	18,295	96	20,870	18,063	116
1974	15,308	16,247	94	19,243	17,133	112
1975	13,761	15,168	91	16,392	15,068	109
1976	16,118	17,970	90	18,258	18,389	99
1977	16,702	18,421	91	18,371	18,768	98
1978	17,988	20,027	90	19,144	19,195	100

The second relationship reviewed is market hogs less than 60 pounds compared with previous quarterly pig crop. This relationship indicates about 80-85 percent of the previous quarterly pig crop will normally be in the less than 60 pound weight group of market hogs. Ratios can vary quite widely from State to State due primarily to in-shipments and outshipments of feeder pigs. Table 5 shows the ratios for all quarters 1973 to March 1979 in the 14 States ranged from 86 to 99 percent. Figures 2-5 reflect data shown in table 5 for this relationship.

The next relationship reviewed is market hogs 60-179 pounds compared with the quarterly pig crop from 4-6 months earlier. This relationship is affected by changes in rate of gain, number of gilts being withheld for breeding, and death loss. As table 5 shows, the relationship historically has been consistent within quarters.

Table 6 shows comparison between breeding inventory and subsequent farrowings. When historic data are used to compare breeding inventory to actual sow farrowings for subsequent quarters, a consistent relationship is found. This is particularly true of the immediate quarter following the breeding inventory estimate. The second quarter after each of the inventory estimates shows a wider variation. The 6-month farrowings are usually 65-85 percent of the breeding stock inventory.

Another relationship considered in the data review process is the under 60 pounds market group of the previous quarter compared to the 60-179 pounds market group for the current quarter. This comparison is only possible for the 14 quarterly States and is shown in table 7.

Range of the ratios, under 60 pounds as percentage of 60-179 pounds, is small, reflecting a fairly stable and consistent relationship. These ratios will vary more from quarter to quarter due to time of year, weather, and rate of gain. These and other factors will all vary the rate pigs move from one weight group to the next group in the 3-month time period. Figures 6-9 depict these relationships since 1973.

FARROWING INTENTIONS

Estimates are made of the number of sows expected to farrow within the next 3 months (second intentions), and the period of 4 to 6 months away (first intentions). Intentions are estimated and published quarterly for the 14 quarterly hog States. Six-month sow farrowing intentions estimates are made for the United States in June and December. The data variability of intentions estimates as shown in tables 8 and 9 are larger than that for inventories. More importantly, estimates of actual farrowing may differ significantly from reported intentions due to unexpected economic, biological, and environmental conditions.

Tables 8 and 9 show data on 6-month intentions estimates and the resulting actual farrowings for December-May and June-November. For the 22 time periods shown, 12 intentions were not realized by an average change of 4.8 percent. In the remaining 10 cases, the actual farrowings were higher than the intentions by an average of 3.3 percent. The maximum deviations from intentions to actual farrowings were +8.2 percent and -9.7 percent. These variations from intentions to actual for the farrowing period emphasize how important it is for the data user to realize the level of accuracy available in intentions. These estimates reflect the intent of the pork producer at the time of the survey. But their intentions change, often on a short interval basis. There are many factors that change the producer plans. The hog and pig report itself can have an effect on the future plans of the hog producer, as do outlook and situation reports produced by the Government, private agribusiness firms, commodity brokers, the State extension services, and other private sector analysts.

Figure 2--December 1 market hogs under 60 pounds versus previous September-November pig crop, 14 States

Year	December 1 market hogs under 60 pounds X axis	September-November pig crop Y axis
	- - 1,000 head - -	
1973	17,632	18,295
1974	15,308	16,247
1975	13,761	15,168
1976	16,118	17,970
1977	16,702	18,421
1978	17,988	20,027

NOTE: The above values are plotted on the accompanying chart. For example, 7 X 5 in the chart represents the plotting point for 1975.

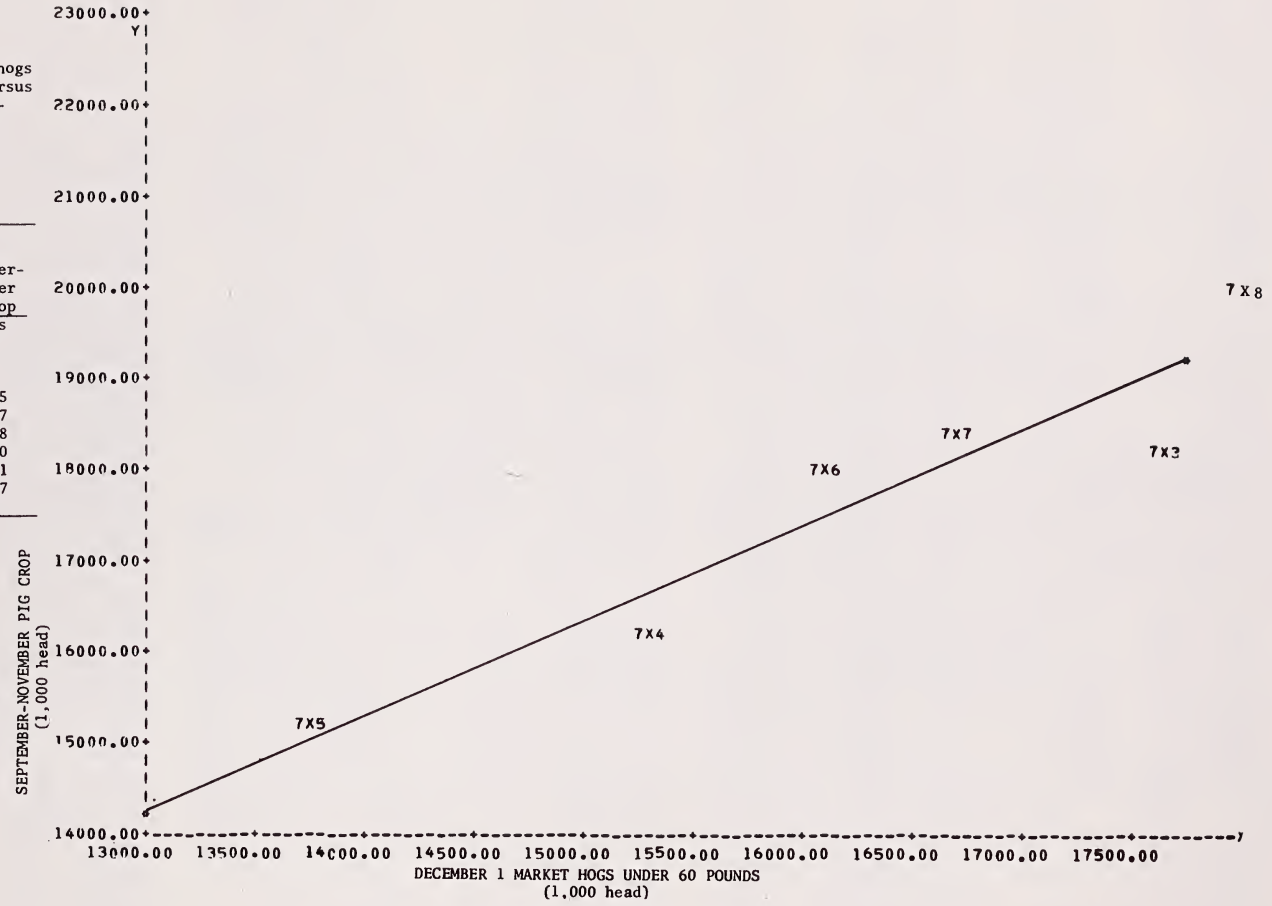


Figure 3--March 1 market hogs under 60 pounds versus previous December-February pig crop, 14 States

Year	March 1 market hogs under 60 pounds X axis	December-February pig crop Y axis
	- - 1,000 head - -	
1973	15,053	16,112
1974	14,792	15,767
1975	12,191	12,701
1976	13,617	14,696
1977	14,199	15,586
1978	14,590	15,626
1979	16,665	18,260

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

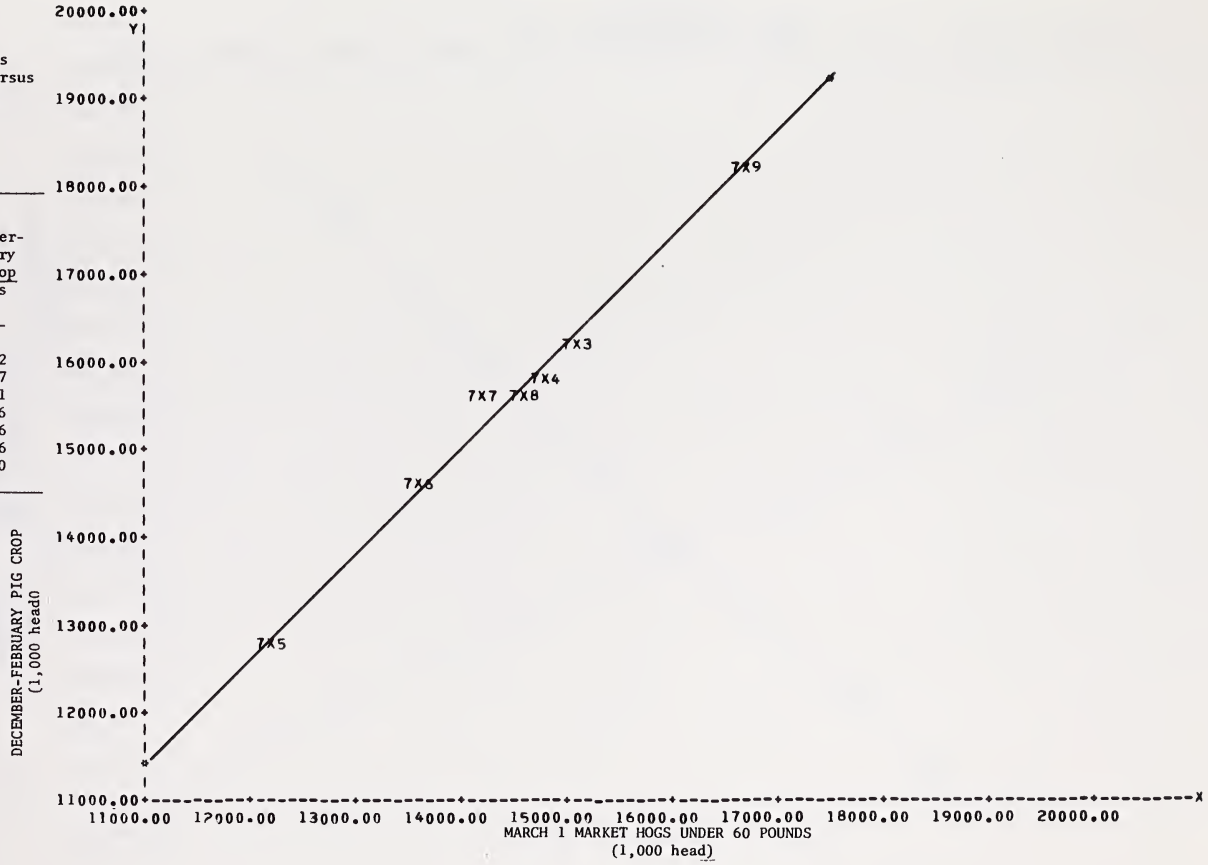


Figure 4--June 1 market hogs under 60 pounds versus March-May pig crop, 14 States

Year	June 1 market hogs under 60 pounds X axis	March-May pig crop Y axis
	- - 1,000 head - -	
1973	21,266	23,913
1974	20,673	23,243
1975	15,797	17,539
1976	18,825	21,525
1977	18,660	21,386
1978	18,041	20,716

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

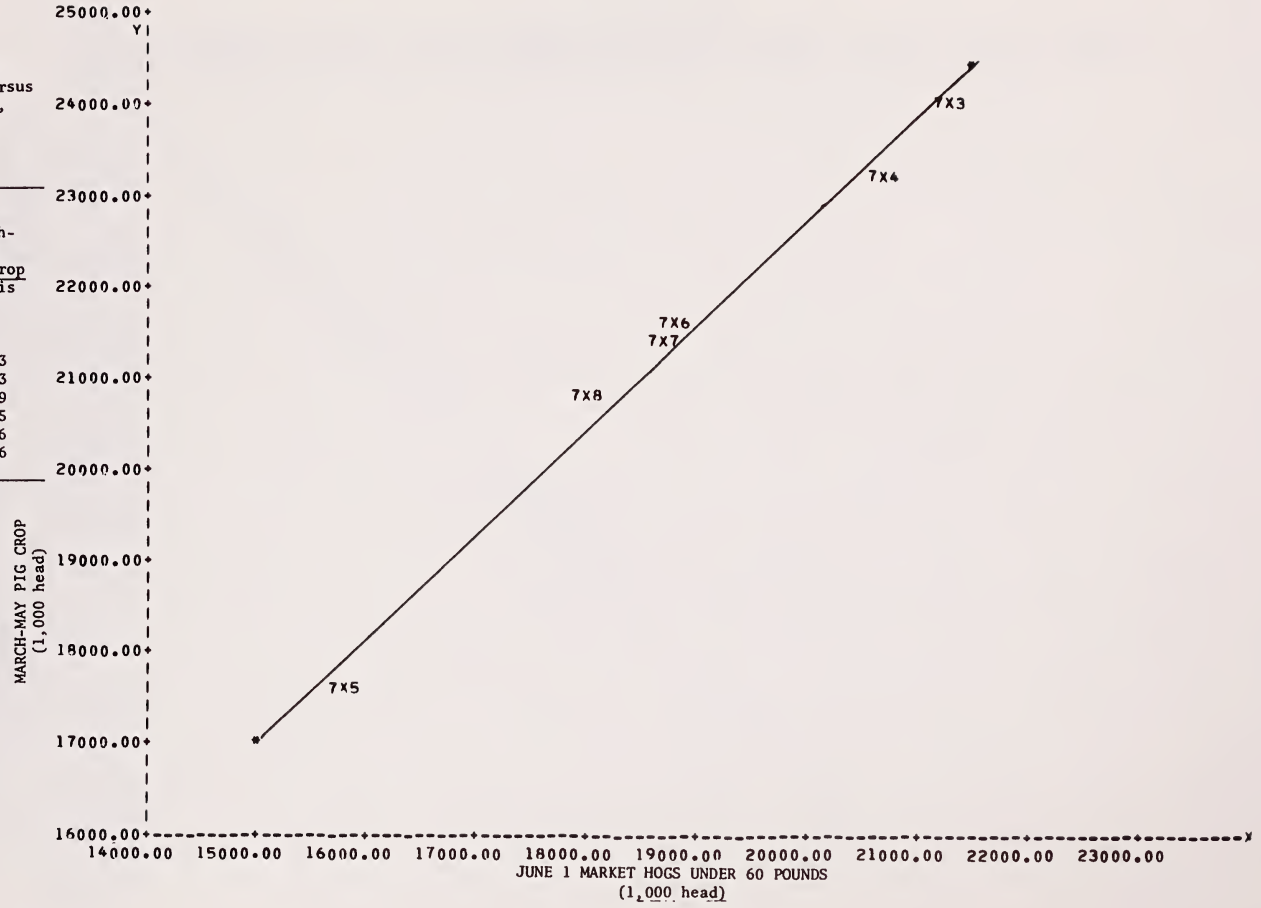


Figure 5--September 1 market hogs under 60 pounds versus June-August pig crop, 14 States

Year	September 1 market hogs under 60 pounds X axis	June-August pig crop Y axis
	- - 1,000 head - -	
1973	17,865	18,063
1974	16,597	17,133
1975	14,380	15,068
1976	17,097	18,389
1977	17,500	18,768
1978	17,631	19,195

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

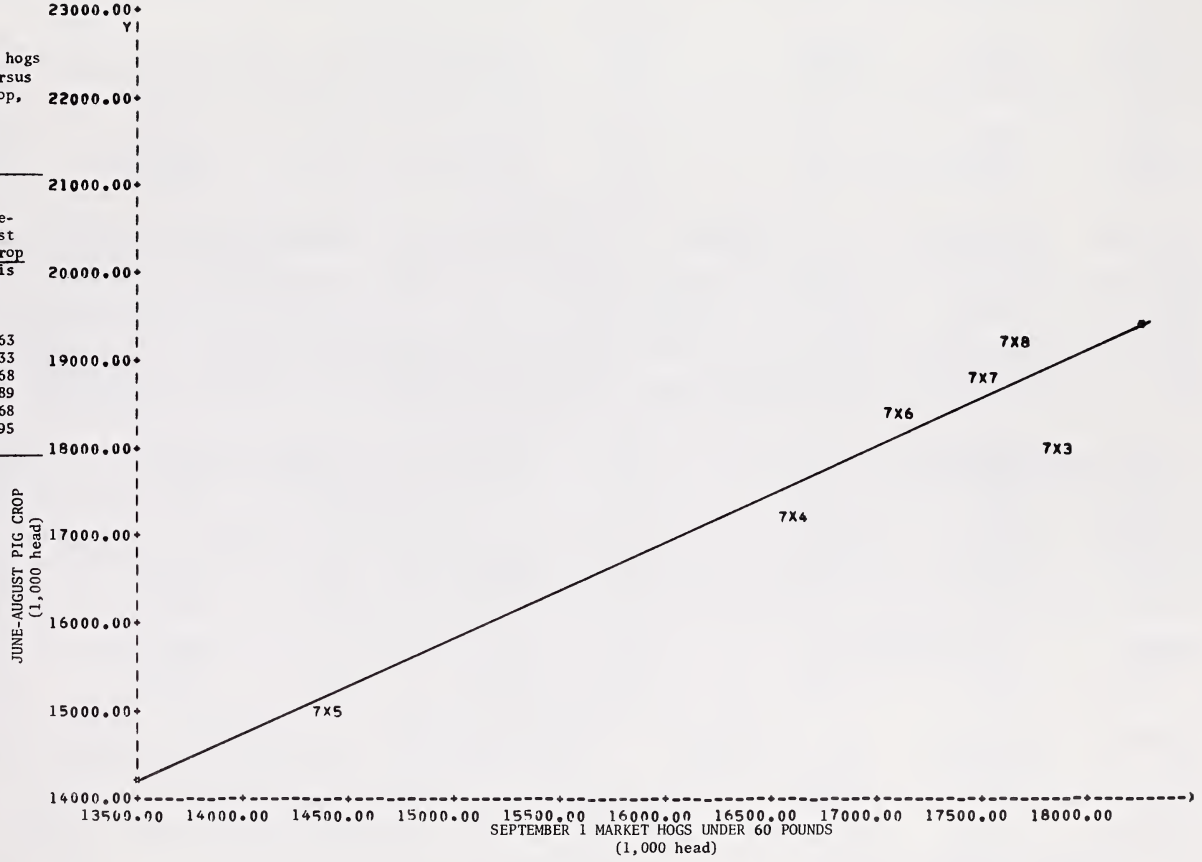


Table 6--Breeding inventory, June 1 and December 1, and sow farrowing, by quarter, United States

Year	Breeding inventory, June 1		Sows farrowed					
			June-August			September-November		
	Percentage of previous year	Number	Percentage of previous year	Number	Percentage of June 1 breeding	Percentage of previous year	Number	Percentage of June 1 breeding
	Percent	1,000 head	Percent	1,000 head	- - - Percent - - -		1,000 head	Percent
1970	115	10,630	119	3,476	32.7	121	3,400	32.0
1971	92	9,748	92	3,211	32.9	92	3,128	32.1
1972	94	9,147	93	3,001	32.8	95	2,972	32.5
1973	98	8,988	99	2,957	32.9	98	2,912	32.4
1974	98	8,823	97	2,859	32.4	90	2,617	29.7
1975	83	7,358	88	2,507	34.1	93	2,445	33.2
1976	114	8,388	118	2,965	35.3	118	2,885	34.4
1977	104	8,688	104	3,087	35.5	101	2,922	33.6
1978	102	8,844	102	3,158	35.7	110	3,217	36.4

Year	Breeding inventory, December 1 1/		Sows farrowed					
			December-February 1/			March-May		
	Percentage of previous year	Number	Percentage of previous year	Number	Percentage of December 1 breeding	Percentage of previous year	Number	Percentage of December 1 breeding
	Percent	1,000 head	Percent	1,000 head	- - - Percent - - -		1,000 head	Percent
1970	97	9,189	107	2,718	29.6	116	4,389	47.8
1971	105	9,645	110	2,984	30.9	97	4,253	44.1
1972	88	8,475	88	2,627	31.0	91	3,871	45.7
1973	102	8,650	102	2,678	31.0	97	3,760	43.5
1974	99	8,605	99	2,652	30.8	97	3,663	42.6
1975	86	7,389	81	2,159	29.2	77	2,814	38.1
1976	103	7,574	114	2,456	32.4	118	3,321	43.8
1977	106	8,011	112	2,742	34.2	100	3,308	41.3
1978	107	8,604	100	2,740	31.8	99	3,275	38.1

1/ Previous year.

Table 7--Relationship of market hogs under 60 pounds to market hogs 60-179 pounds in the 14 States, by quarters

Survey period and year	Market hogs: Under 60 pounds, December 1 1/	Market hogs: 60-179 pounds, March 1	Market hogs: Under 60 pounds as a percentage of 60-179 pounds
	- - 1,000 head - -		Percent
March 1 survey:			
1973	16,564	18,485	90
1974	17,632	19,094	92
1975	15,308	16,192	95
1976	13,761	15,050	91
1977	16,118	16,972	95
1978	16,702	17,296	97
1979	17,988	19,160	94

Survey period and year	Market hogs: Under 60 pounds, March 1	Market hogs: 60-179 pounds, June 1	Market hogs: Under 60 pounds as a percentage of 60-179 pounds
	- - 1,000 head - -		Percent
June 1 survey:			
1973	15,053	17,390	87
1974	14,792	17,082	87
1975	12,191	14,368	85
1976	13,617	15,731	87
1977	14,199	15,872	89
1978	14,590	16,533	88

Survey period and year	Market hogs: Under 60 pounds, June 1	Market hogs: 60-179 pounds, September 1	Market hogs: Under 60 pounds as a percentage of 60-179 pounds
	- - 1,000 head - -		Percent
September 1 survey:			
1973	21,266	20,878	102
1974	20,673	20,632	100
1975	15,797	16,178	98
1976	18,825	19,129	98
1977	18,660	18,624	100
1978	18,041	18,041	98

Survey period and year	Market hogs: Under 60 pounds, September 1	Market hogs: 60-179 pounds, December 1	Market hogs: Under 60 pounds as a percentage of 60-179 pounds
	- - 1,000 head - -		Percent
December 1 survey:			
1973	17,865	20,870	86
1974	16,597	19,243	86
1975	14,380	16,392	88
1976	17,097	18,258	94
1977	17,500	18,371	95
1978	17,631	19,144	92

1/ Previous year.

Figure 6--December 1 market hogs under 60 pounds versus March 1 market hogs 60-179 pounds, 14 States

Year	December 1 market hogs under 60 pounds X axis	March 1 market hogs 60-179 pounds Y axis
	- - 1,000 head - -	
1973	16,564	18,485
1974	17,632	19,094
1975	15,308	16,192
1976	13,761	15,050
1977	16,118	16,972
1978	16,702	17,296

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

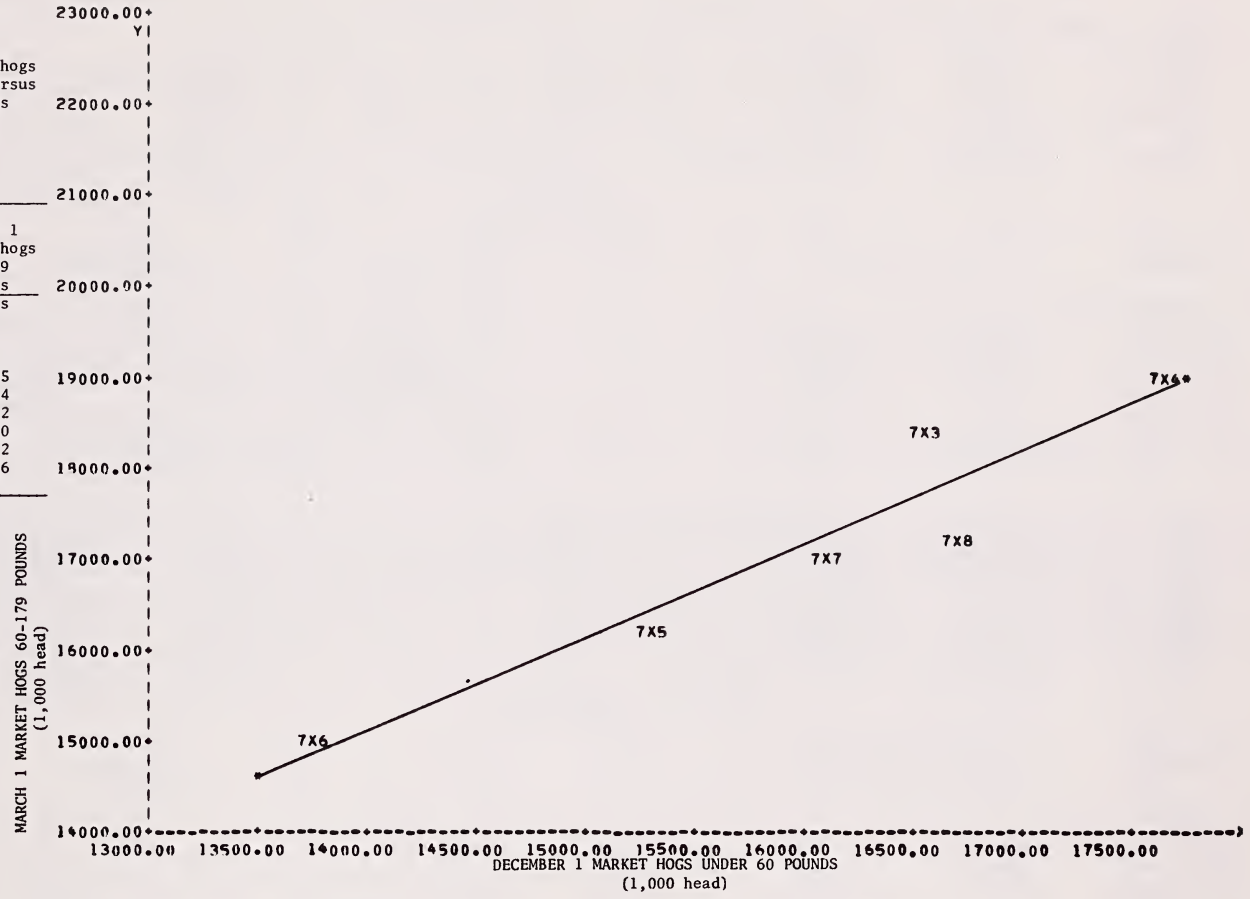


Figure 7--March 1 market hogs under 60 pounds versus June 1 market hogs 60-179 pounds, 14 States

Year	March 1 market hogs under 60 pounds X axis	June 1 market hogs 60-179 pounds Y axis
	- - 1,000 head - -	
1973	15,053	17,390
1974	14,792	17,082
1975	12,191	14,368
1976	13,617	15,731
1977	14,199	15,872
1978	14,590	16,533

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

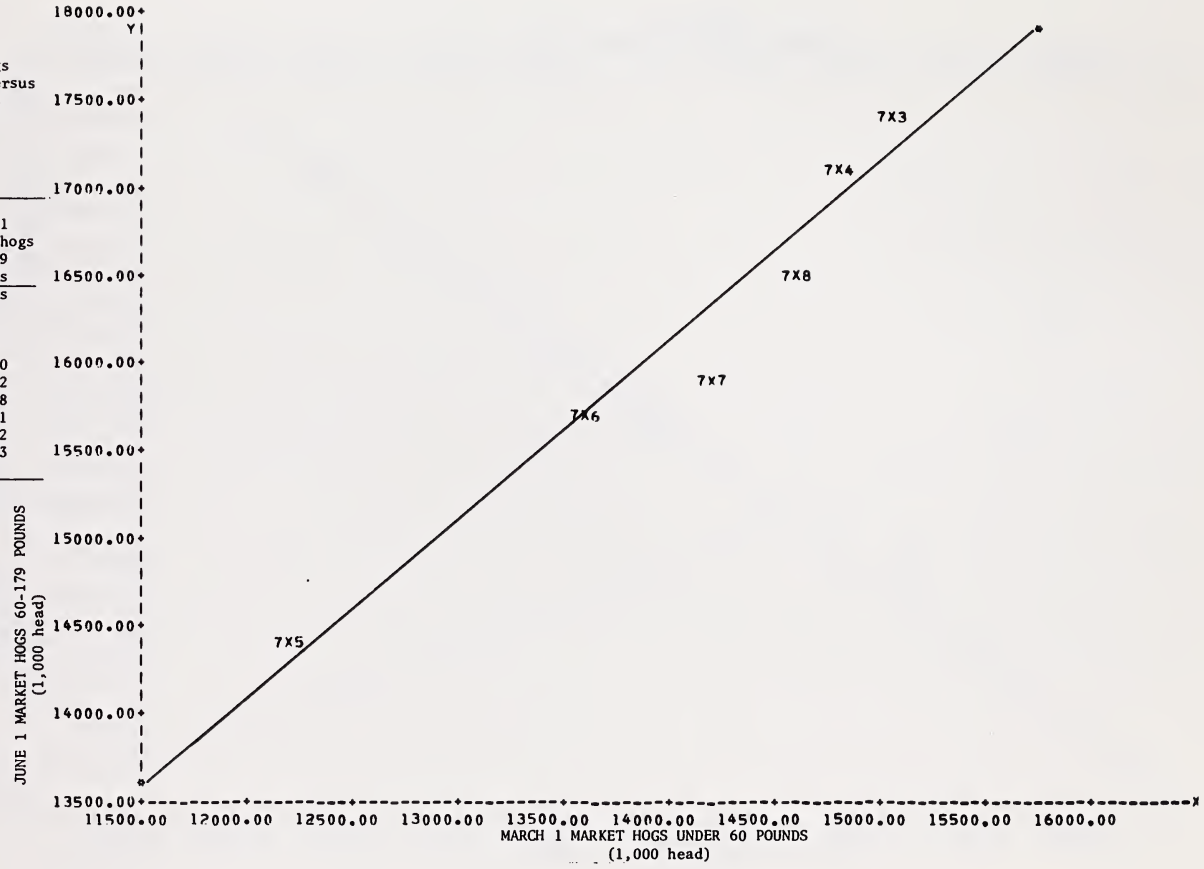


Figure 8--June 1 market hogs under 60 pounds versus September 1 market hogs 60-179 pounds, 14 States

Year	June 1 market hogs under 60 pounds X axis	September 1 market hogs 60-179 pounds Y axis
	- - 1,000 head - -	
1973	21,266	20,878
1974	20,673	20,632
1975	15,797	16,178
1976	18,825	19,129
1977	18,660	18,624
1978	18,041	18,368

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

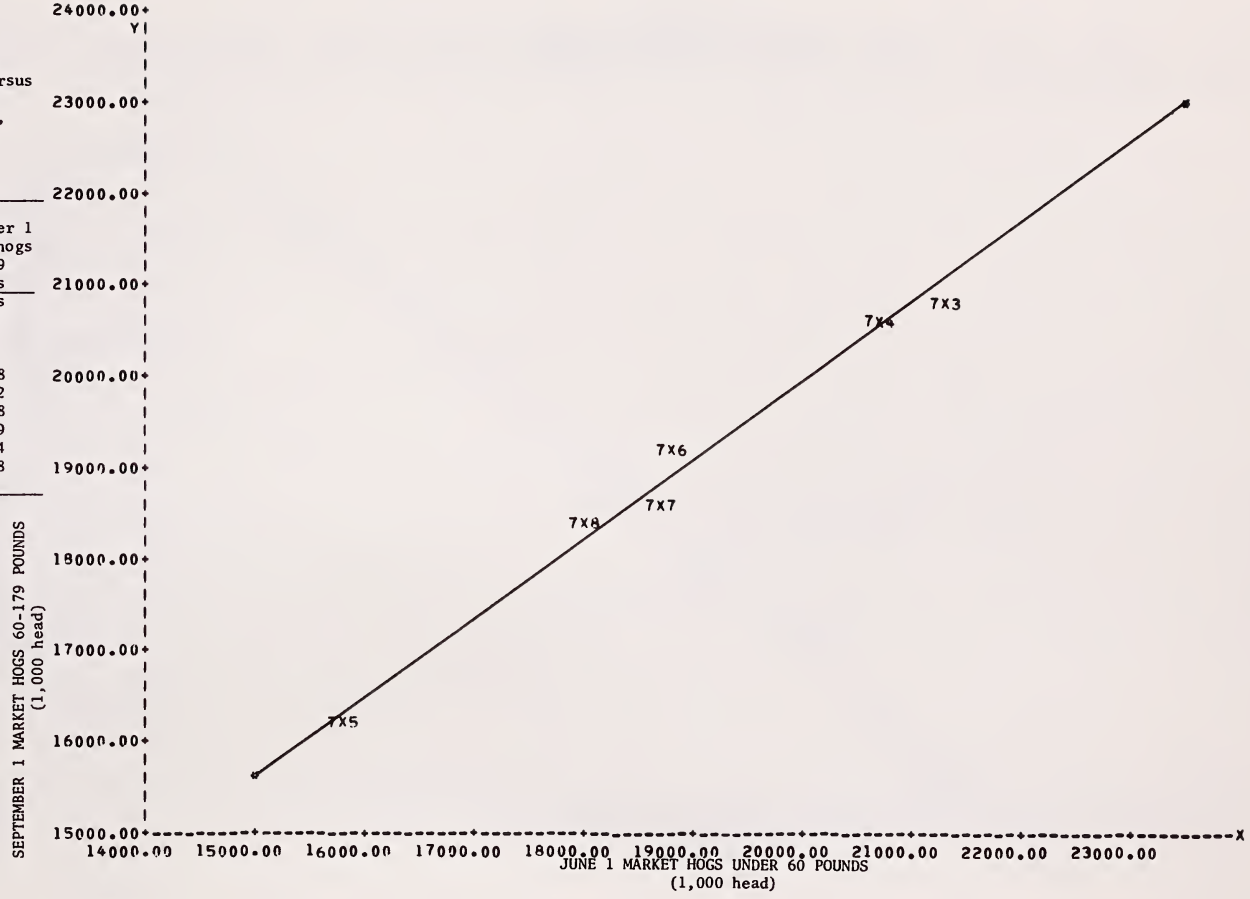


Figure 9--September 1 market hogs under 60 pounds versus December 1 market hogs 60-179 pounds, 14 States

Year	September 1 market hogs under 60 pounds X axis	December 1 market hogs 60-179 pounds Y axis
	- - 1,000 head - -	
1973	17,865	20,870
1974	16,597	19,243
1975	14,380	16,392
1976	17,097	18,258
1977	17,500	18,371
1978	17,631	19,144

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

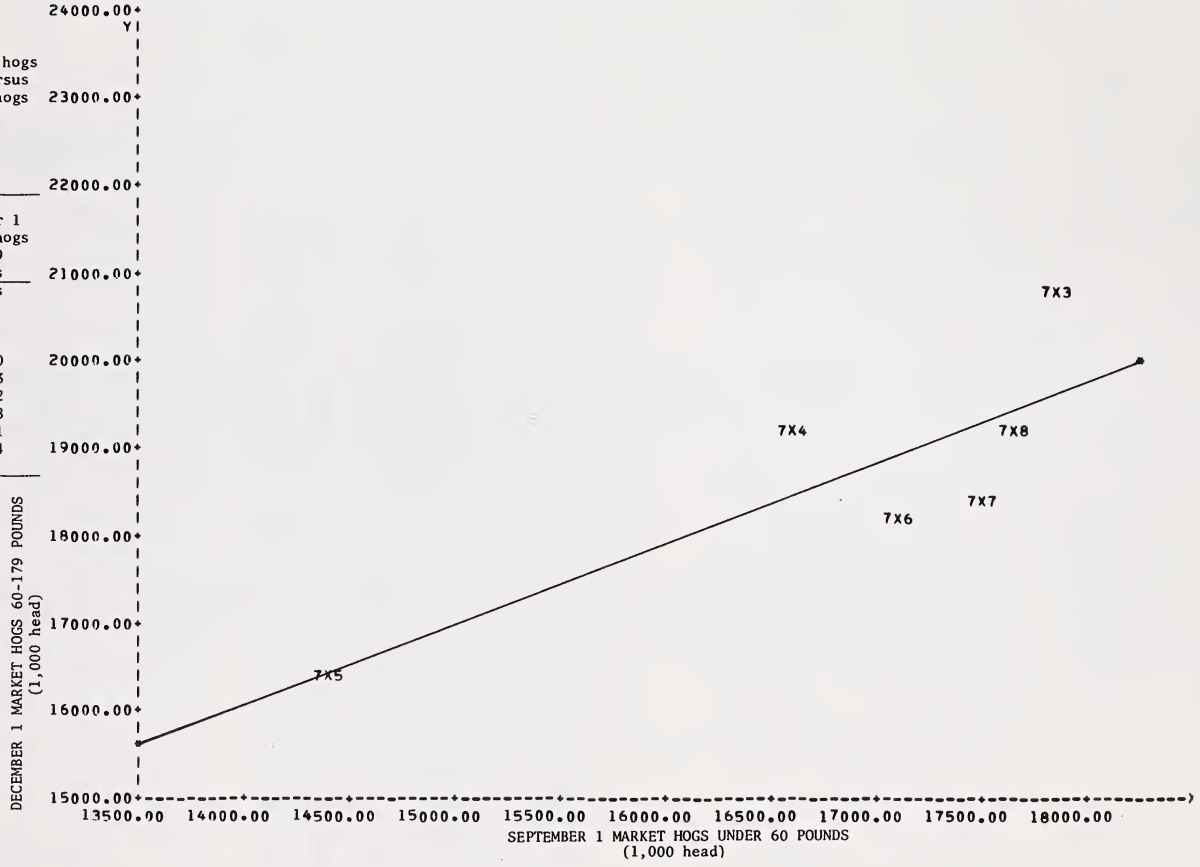


Table 8--Farrowings: Intentions and actual, December-May, United States 1/

Year	Intention	Actual	Deviation from intention	
	- - - - - 1,000 head - - - - -			Percent
1968	6,522	6,659	+137	+2.1
1969	6,981	6,323	-658	-9.4
1970	6,568	7,107	+539	+8.2
1971	7,222	7,237	+15	+.2
1972	6,544	6,498	-46	-.7
1973	6,980	6,438	-542	-7.8
1974	6,491	6,315	-176	-2.7
1975	5,385	4,973	-412	-7.7
1976	5,353	5,777	+424	+7.9
1977	6,109	6,050	-59	-1.0
1978	6,620	6,015	-605	-9.1

1/ December previous year.

Table 9--Farrowings: Intentions and actual, June-November, United States

Year	Intention	Actual	Deviation from intention	
	- - - - - 1,000 head - - - - -			Percent
1968	5,962	6,130	+168	+2.8
1969	6,362	5,745	-617	-9.7
1970	6,697	6,876	+179	+2.7
1971	6,265	6,339	+74	+1.2
1972	6,005	5,973	-32	-.5
1973	5,979	5,869	-110	-1.8
1974	5,760	5,476	-284	-4.9
1975	4,730	4,952	+222	+4.7
1976	5,811	5,850	+39	+.7
1977	6,144	6,009	-135	-2.2
1978	6,247	6,375	+128	+2.0

Table 10 shows quarterly data for the 14 States from 1974 to the latest estimates available. The second intentions report is much more predictive than the first intentions report. This is expected since the time period is 3 months closer and the sows and gilts are bred at the time of the second intentions estimate. However, when the second intentions are compared to the actual farrowings, using percentage change from previous year, about one out of three exceeded 4 percentage points. In 13 of the 21 cases, the change was a decrease. On the first intentions versus actual farrowings, one out of two estimates exceeded a change of 4 percentage points.

Within the last 5 years, the largest deviation from intentions to actual farrowings was the December 1977-February 1978 quarter. The first intentions estimate made in September 1977 forecast a December 1977-February 1978 increase over the previous year by 12 percent. Then, in December, when the second intentions estimate was published, the producers reported that they intended to farrow 13 percent more sows and gilts than a year earlier for this quarterly period. December 1977 and January and February 1978 were months of significant activity in the hog and pig industry. The weather was extremely cold with large amounts of snow and ice, the forecast price outlook was pessimistic, and Government regulations on the nitrite in bacon problem were announced, with uncertain consumer reaction. These factors, along with conception and disease problems, depressed the large expected-intentions-to-farrow estimate to an actual farrowings estimate that was 1 percent below the previous year.

ACCURACY OF THE ESTIMATES

Estimates based on a sample survey are subject to sampling variability. This variability, as measured by the relative standard error, is about 2 percent at the U.S. level for hog inventory. This means that chances are approximately 95 out of 100 that survey estimates will be within 4 percent of the complete coverage value if the same procedures were used to survey all producers. Survey estimates are also subject to nonsampling errors such as omissions, duplications, and mistakes in reporting, recording, and processing the data. These errors cannot be measured directly, but they are minimized through comprehensive instructions on collection of data and a careful review of all reported data for consistency and reasonableness.

The accuracy of the hog inventory and pig crop estimates is measured by the level of slaughter in subsequent time periods. If the level of the original estimate is outside reasonable limits, estimates are revised. This provides a more accurate historical base to measure change in future estimating periods.

After the June 1 estimates are made, subsequent slaughter for the June-December period is used as check data to verify the accuracy of the estimates. Similarly, after the December 1 estimates, the subsequent slaughter for the December-June period is used as a check on those estimates. The average change for these estimates is from 1.0 to 1.2 percent as shown in tables 11-14. This is well within the 2-percent sampling error. The changes for 3 of the 42 estimates are 4 percent or more, with 2 of these 3 changes occurring in the same year, 1972.

Tables 15-18 compare total market hogs and 6-month pig crop estimates to the subsequent slaughter. Changes from the previous year are also listed. The percentage changes for market hogs and pig crop normally show very similar movement. The final column in tables 15 and 16 shows the subsequent 7-month slaughter as a percentage of the market hogs and tables 17 and 18 show the subsequent 6-month slaughter compared with the pig crop. Table 16 indicates that June-December slaughter will average about 95 percent of the June 1 market hogs on hand. Note the large deviation from the average for 1973. This occurred because meat prices were "frozen," and

Table 10--Farrowings: First and second intentions and actual, 14 States, by quarters.

Year and quarter	Intention		Actual	Percentage of previous year actual			Percentage change from intention to actual	
				Intention		Actual		
	First	Second		First	Second		First	Second
	1,000 head			Percent				
1974:								
December-February 1/	2,311	2,294	2,258	102	101	100	-2	-1
March-May	3,334	3,327	3,245	100	100	98	-2	-2
June-August	2,475	2,468	2,424	98	98	96	-2	-2
September-November	2,513	2,308	2,280	98	90	89	-9	-1
1975:								
December-February 1/	2,021	1,949	1,788	90	86	79	-11	-7
March-May	2,669	2,573	2,437	82	79	75	-7	-4
June-August	2,014	2,019	2,091	83	83	86	+3	+3
September-November	2,015	2,120	2,101	88	93	92	+4	-1
1976:								
December-February 1/	1,881	1,956	2,052	105	109	115	+10	+6
March-May	2,547	2,675	2,907	105	110	119	+14	+9
June-August	2,312	2,415	2,513	111	115	120	+9	+5
September-November	2,506	2,448	2,524	119	117	120	+1	+3
1977:								
December-February 1/	2,240	2,244	2,304	109	109	112	+3	+3
March-May	3,039	2,999	2,893	105	103	100	-5	-3
June-August	2,637	2,649	2,600	105	105	103	-2	-2
September-November	2,631	2,771	2,565	104	110	102	-2	-8
1978:								
December-February 1/	2,579	2,602	2,285	112	113	99	-13	-14
March-May	3,117	2,935	2,880	108	101	100	-8	-1
June-August	2,675	2,685	2,658	103	103	102	-1	-1
September-November	2,635	2,644	2,796	103	103	109	+6	+6
1979:								
December-February 1/	2,354	2,564	2,659	103	112	116	+13	+4
March-May	3,322	3,548	--	116	124	--	--	--
June-August	3,163	--	--	119	--	--	--	--
September-November	--	--	--	--	--	--	--	--

-- = Not available.

1/ December previous year.

Table 11--All hogs and pigs: Comparison of preliminary and latest estimates, June 1, United States

Year	Preliminary estimate	Latest estimate	Deviation from preliminary estimate	
	1,000 head			Percent
1968	59,014	60,531	+1,517	+2.6
1969	59,257	58,727	-530	-.9
1970	64,734	64,639	-95	-.1
1971	66,070	65,718	-352	-.5
1972	61,556	60,626	-930	-1.5
1973	60,271	59,571	-700	-1.2
1974	59,437	58,878	-559	-.9
1975	48,165	47,860	-305	-.6
1976	52,643	53,930	+1,287	+2.4
1977	54,100	54,460	+360	+.7
1978	54,930	55,110	+180	+.3

Table 12--All hogs and pigs: Comparison of preliminary and latest estimates, December 1, United States

Year	Preliminary estimate	Latest estimate	Deviation from preliminary estimate	
	1,000 head			Percent
1968	61,025	60,829	-196	-0.3
1969	56,743	57,046	+303	+.5
1970	67,540	67,285	-255	-.4
1971	62,972	62,412	-560	-.9
1972	61,502	59,017	-2,485	-4.0
1973	61,022	60,614	-408	-.7
1974	55,062	54,693	-369	-.7
1975	49,602	49,267	-335	-.7
1976	55,085	54,934	-151	-.3
1977	57,587	56,539	-1,048	-1.8
1978	59,860			

Table 13--Sows farrowed: Comparison of preliminary and latest estimates, December-May, United States

Year	Preliminary estimate	Latest estimate	Deviation from preliminary estimate	
	1,000 head			Percent
1968	6,481	6,659	+178	+2.7
1969	6,411	6,323	-88	-1.4
1970	7,174	7,107	-67	-.9
1971	7,231	7,237	+6	+.1
1972	6,585	6,498	-87	-1.4
1973	6,535	6,438	-97	-1.5
1974	6,380	6,315	-65	-1.0
1975	4,935	4,973	+38	+.8
1976	5,689	5,777	+88	+1.5
1977	6,063	6,050	-13	-.2
1978	6,014	6,015	+1	0

Table 14--Sows farrowed: Comparison of preliminary and latest estimates, June-November, United States

Year	Preliminary estimate	Latest estimate	Deviation from preliminary estimate	
	1,000 head			Percent
1968	6,156	6,130	-26	-0.4
1969	5,735	5,745	+10	+.2
1970	6,905	6,876	-29	-.4
1971	6,298	6,339	+41	+.7
1972	6,288	5,973	-315	-5.0
1973	5,856	5,869	+13	+.2
1974	5,466	5,476	+10	+.2
1975	4,959	4,952	-7	-.1
1976	5,867	5,850	-17	-.3
1977	6,295	6,009	-286	-4.5
1978	6,375			

Table 15--Market hogs December 1 and commercial hog slaughter December-June, with comparisons, United States

Year	Market hogs, December 1 1/		Commercial hog slaughter, December-June		Hog slaughter as a percentage of market hogs
	Number	Percentage change from previous year	Number	Percentage change from previous year	
	1,000 head	Percent	1,000 head	Percent	
1970	47,857	-7	47,041	-6	98.3
1971	57,640	+20	56,721	+21	98.4
1972	53,937	-4	51,949	-8	96.3
1973	50,367	-7	46,371	-11	92.1
1974	52,009	+3	47,451	+2	91.2
1975	47,304	-9	43,241	-9	91.4
1976	41,693	-12	40,092	-7	96.2
1977	46,923	+13	45,393	+13	96.7
1978	47,935	+2	44,963	-1	93.8

1/ December 1 previous year.

Table 16--Market hogs for June 1 and commercial hog slaughter June-December, with comparisons, United States

Year	Market hogs, June 1		Commercial hog slaughter, June-December		Hog slaughter as a percentage of market hogs
	Number	Percentage change from previous year	Number	Percentage change from previous year	
	1,000 head	Percent	1,000 head	Percent	
1970	54,009	+9	52,183	+10	96.6
1971	55,970	+4	54,206	+4	96.9
1972	51,479	-8	47,899	-12	93.1
1973	50,583	-2	43,167	-10	85.3
1974	50,055	-1	46,867	+9	93.6
1975	40,502	-19	37,506	-20	92.6
1976	45,542	+12	44,932	+20	98.7
1977	45,772	+1	44,748	0	97.8
1978	46,266	+1	44,868	0	97.0

Table 17--Pig crop June-November and commercial hog slaughter January-June, with comparisons, United States

Year	Pig crop, June-November 1/		Commercial hog slaughter, January-June		Hog slaughter as a percentage of market hogs
	Number	Percentage change from previous year	Number	Percentage change from previous year	
	1,000 head	Percent	1,000 head	Percent	
1970	42,155	-6	39,951	-6	94.8
1971	49,588	+18	47,890	+20	96.6
1972	46,006	-7	43,676	-9	94.9
1973	43,051	-6	39,702	-9	92.2
1974	41,998	-2	41,163	+4	98.0
1975	38,952	-7	36,568	-11	93.9
1976	35,656	-8	34,253	-6	96.1
1977	42,218	+18	38,513	+12	91.2
1978	43,202	+2	38,435	0	89.0

1/ Previous year.

Table 18--Pig crop for December-May and commercial hog slaughter July-December, with comparisons, United States

Year	Pig crop, December-May 1/		Commercial hog slaughter, July-December		Hog slaughter as a percentage of market hogs
	Number	Percentage change from previous year	Number	Percentage change from previous year	
	1,000 head	Percent	1,000 head	Percent	
1970	52,126	+12	45,917	+11	88.1
1971	51,918	0	46,598	+1	89.8
1972	47,523	-8	41,085	-12	86.5
1973	46,125	-3	37,093	-10	80.4
1974	44,792	-3	40,599	+9	90.6
1975	35,530	-21	32,120	-21	90.4
1976	42,177	+19	39,531	+23	93.7
1977	42,960	+2	38,791	-2	90.3
1978	42,341	-1	38,846	0	91.7

1/ December previous year.

grain prices and protein supplements set new record highs. Forecasting models are of little value when aberrations like these happen.

FORECASTING FUTURE HOG SUPPLIES

The hog and pig reports provide the necessary data for forecasting future slaughter supplies for the next year. The following data are needed: total market hogs, market hogs by weight groups, quarterly and 6-month pig crops, and the expected pig crop for the next 6 months. These data are the primary tools used by industry and Government in forecasting pork supplies. Livestock producers also use the data in making production and marketing decisions. Hog and pig data available for forecasting future hog supplies by individual slaughter periods are as follows:

Slaughter period	U.S. hog and pig data needed	Figure
December-June	December 1, total market hogs	10
January-June	December 1, June-November pig crop	11
December	December 1, market hogs 180 pounds and over	12
January-March	December 1, market hogs 60-179 pounds	13
January-March	December 1, June-August pig crop	14
April-June	December 1, market hogs, under 60 pounds	15
April-June	December 1, September-November pig crop	16
June-December	June 1, total market hogs	17
July-December	June 1, December-May pig crop	18
June	June 1, market hogs 180 pounds and over	19
July-September	June 1, market hogs 60-179 pounds	20
July-September	June 1, December-February pig crop	21
October-December	June 1, market hogs, under 60 pounds	22
October-December	June 1, March-May pig crop	23

CHARTING PROSPECTIVE SLAUGHTER

Figures 10-23 depict the relationship between hog and pig data and slaughter for the past 8 years. For example, figure 10 shows the relationship between December 1 total market hogs and U.S. commercial hog slaughter during December-June period. To illustrate use of these charts in forecasting future slaughter supplies, the following steps can be used to forecast commercial hog slaughter using published data from the hog and pig reports:

Step 1: Using figure 10, locate the December 1 number of hogs for market (50.3 million) on the horizontal grid (x axis).

Step 2: From that point, move up to the diagonal guide line to the point considered to best satisfy the relationship to the previous year.

Step 3: From that point, read across to the vertical (y axis) margin of the chart to get the probable level of commercial hog slaughter during December 1978-June 1979. Your reading should be in the range of 47.5 to 48.5 million head.

Also, each hog and pig report includes an estimate of producers' farrowing plans for the next 2 quarters. The expected pig crop for the upcoming 2 quarters or 6-month period is estimated by multiplying the intended sow farrowings by an average litter

Figure 10--December 1 market hogs versus December-June commercial hog slaughter, United States

Year	December 1 market hogs X axis	December-June commercial hog slaughter Y axis
	- - 1,000 head - -	
1970	47,857	47,041
1971	57,640	56,721
1972	53,937	51,949
1973	50,367	46,371
1974	52,009	47,451
1975	47,304	43,241
1976	41,693	40,092
1977	46,923	45,393
1978	47,935	44,963

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

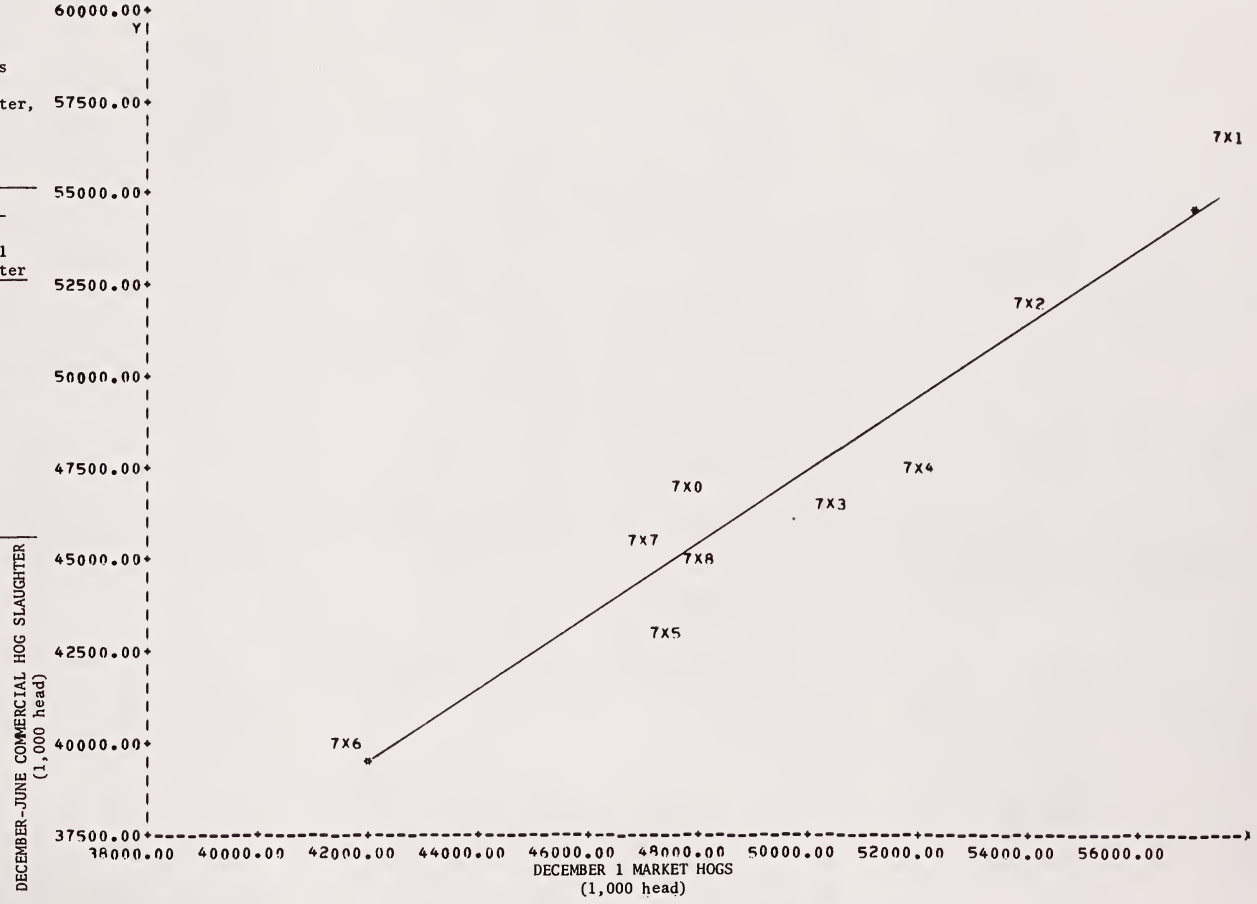


Figure 11--June-November pig crop versus January-June commercial hog slaughter, United States

Year	June-November pig crop (X axis)	January-June commercial hog slaughter (Y axis)
	- - 1,000 head - -	
1970	42,155	39,951
1971	49,588	47,890
1972	46,006	43,676
1973	43,051	39,702
1974	41,998	41,163
1975	38,952	36,568
1976	35,656	34,253
1977	42,218	38,513
1978	43,202	38,435

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

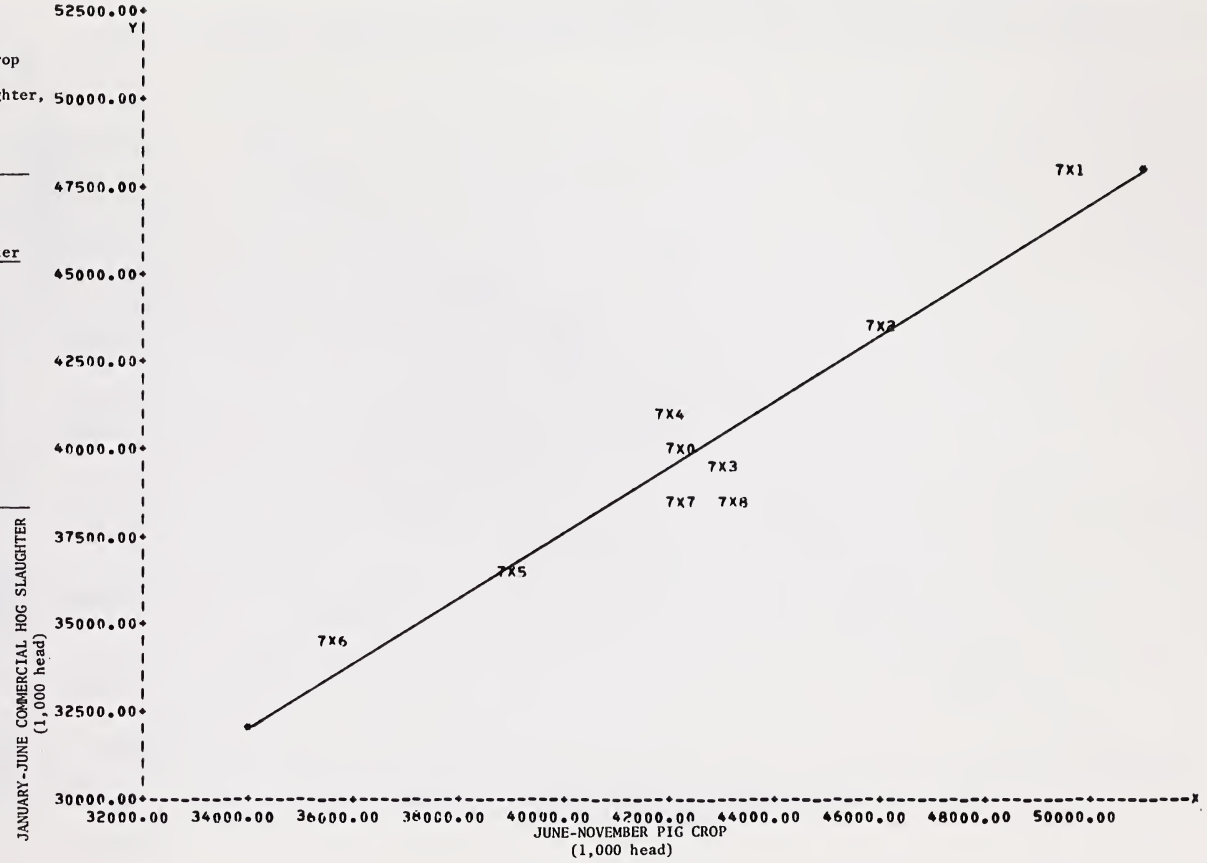


Figure 12--December 1 market hogs 180 pounds and over versus December commercial hog slaughter, United States

Year	December 1 market hogs 180 pounds and over (X axis)	December commercial hog slaughter (Y axis)
	- - 1,000 head - -	
1970	9,316	8,831
1971	8,831	8,273
1972	4,782	6,669
1973	7,929	6,288
1974	7,392	6,673
1975	6,342	5,839
1976	6,970	6,880
1977	7,002	6,528
1978	6,930	6,430

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

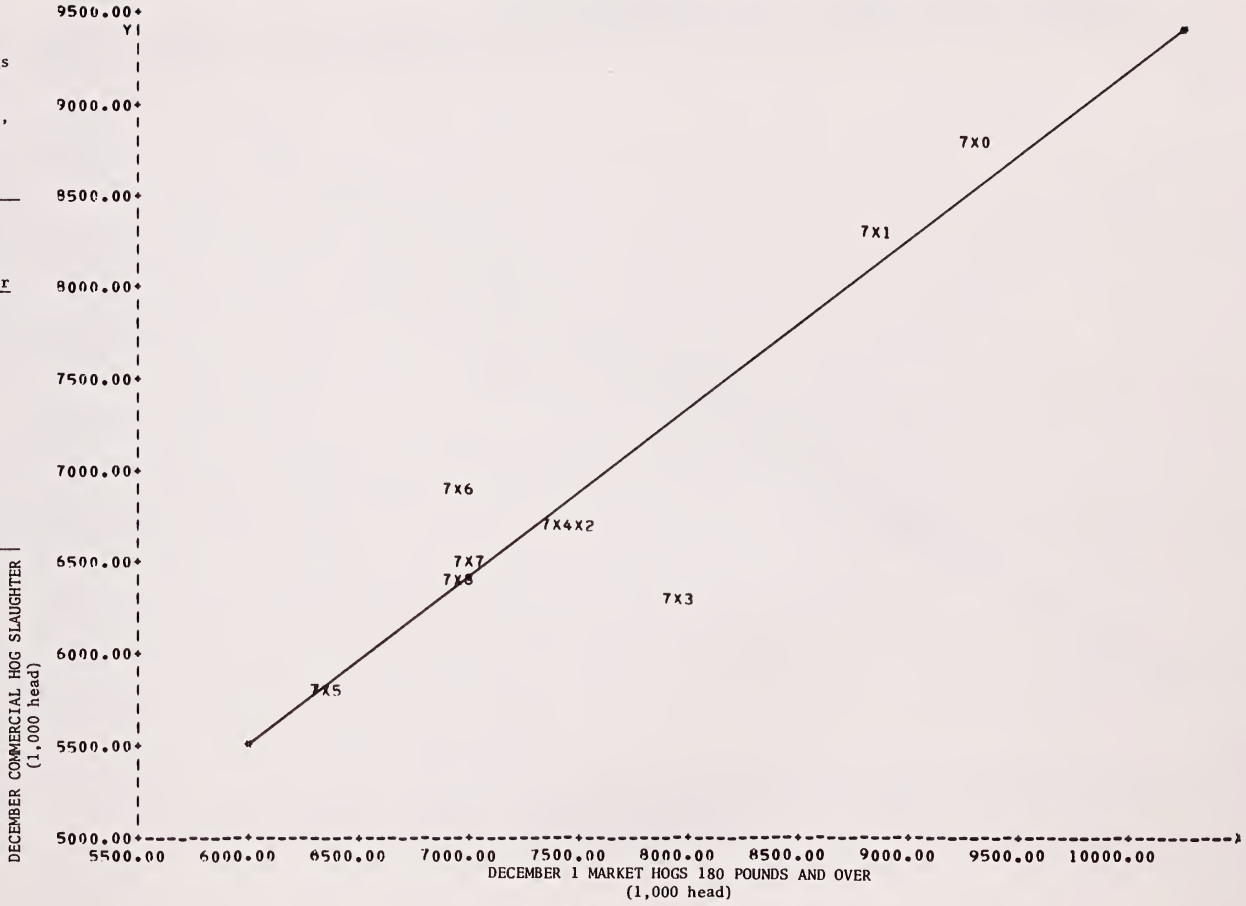


Figure 13--December 1 market hogs 60-179 pounds versus January-March commercial hog slaughter, United States

Year	December 1 market hogs 60-179 pounds X axis	January-March commercial hog slaughter Y axis
	- - 1,000 head - -	
1970	22,670	19,960
1971	27,036	24,267
1972	25,194	22,273
1973	23,582	20,224
1974	23,938	20,149
1975	22,180	18,760
1976	19,096	17,431
1977	21,239	19,770
1978	21,509	19,398

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

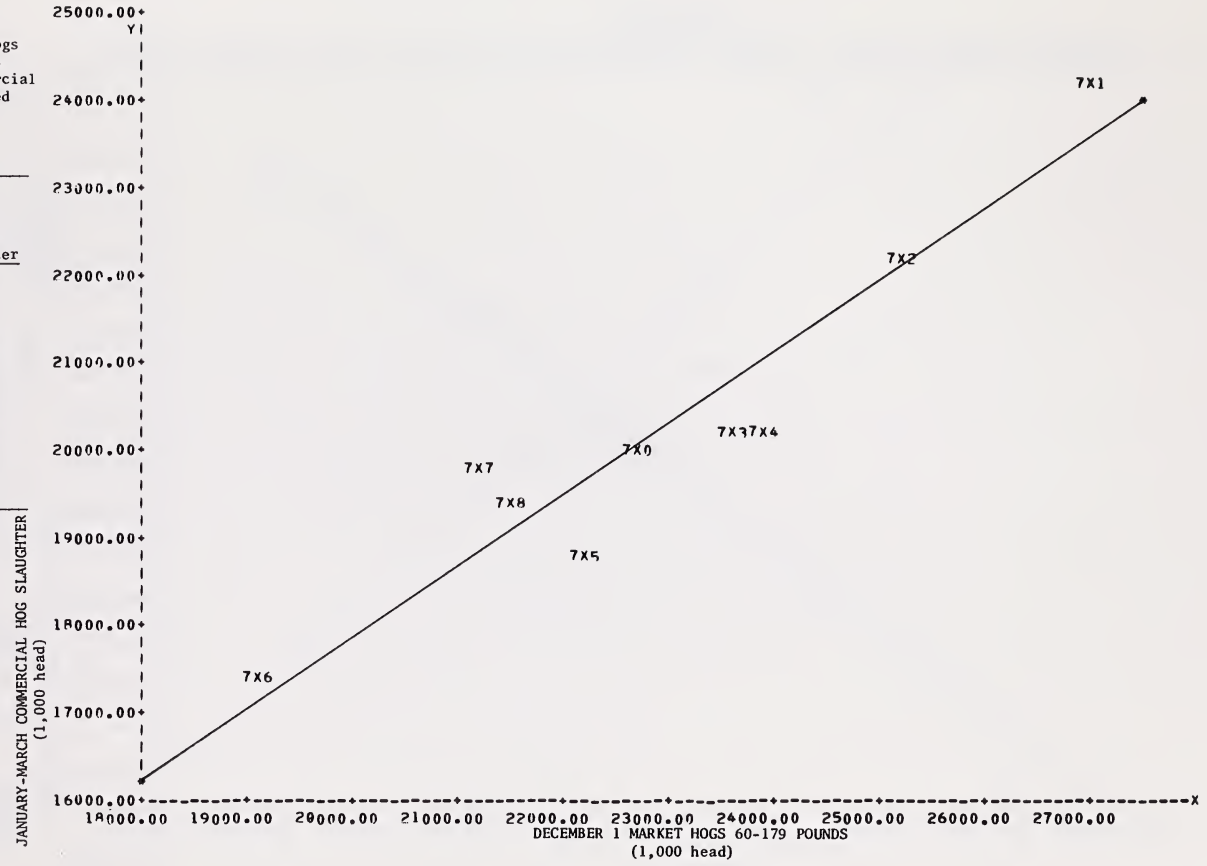


Figure 14--June-August pig crop versus January-March commercial hog slaughter, United States

Year	June-August pig crop X axis	January-March commercial hog slaughter Y axis
	- - 1,000 head - -	
1971	25,142	24,267
1972	23,260	22,273
1973	21,838	20,224
1974	21,209	20,149
1975	20,273	18,760
1976	18,022	17,431
1977	21,661	19,770
1978	22,240	19,398

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

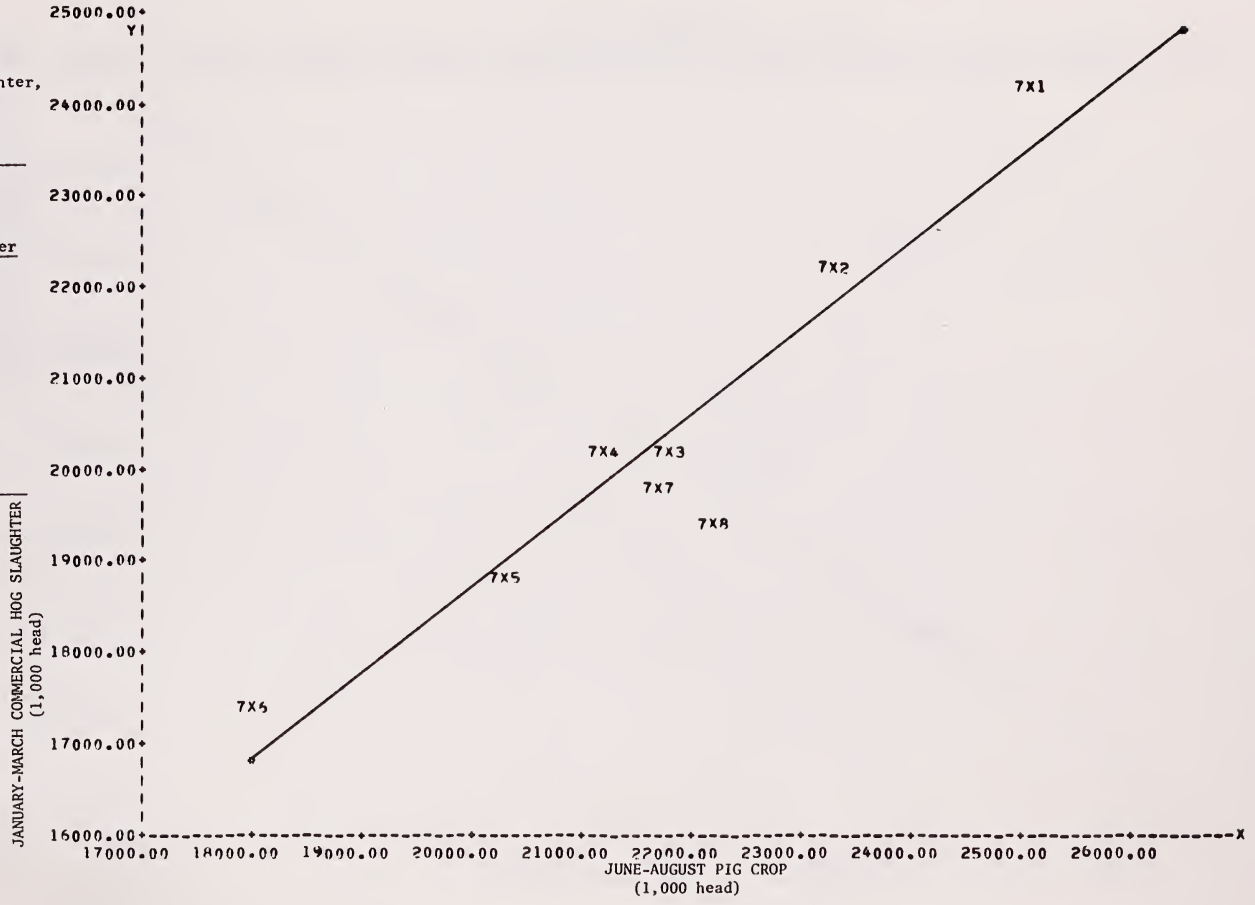


Figure 15--December 1 market hogs under 60 pounds versus April-June commercial hog slaughter, United States

Year	December 1 market hogs under 60 pounds X axis	April-June commercial hog slaughter Y axis
	- - 1,000 head - -	
1970	17,522	19,991
1971	21,288	23,263
1972	19,912	21,403
1973	19,303	19,478
1974	20,142	21,014
1975	17,732	17,808
1976	16,255	16,822
1977	18,714	18,743
1978	19,424	19,037

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

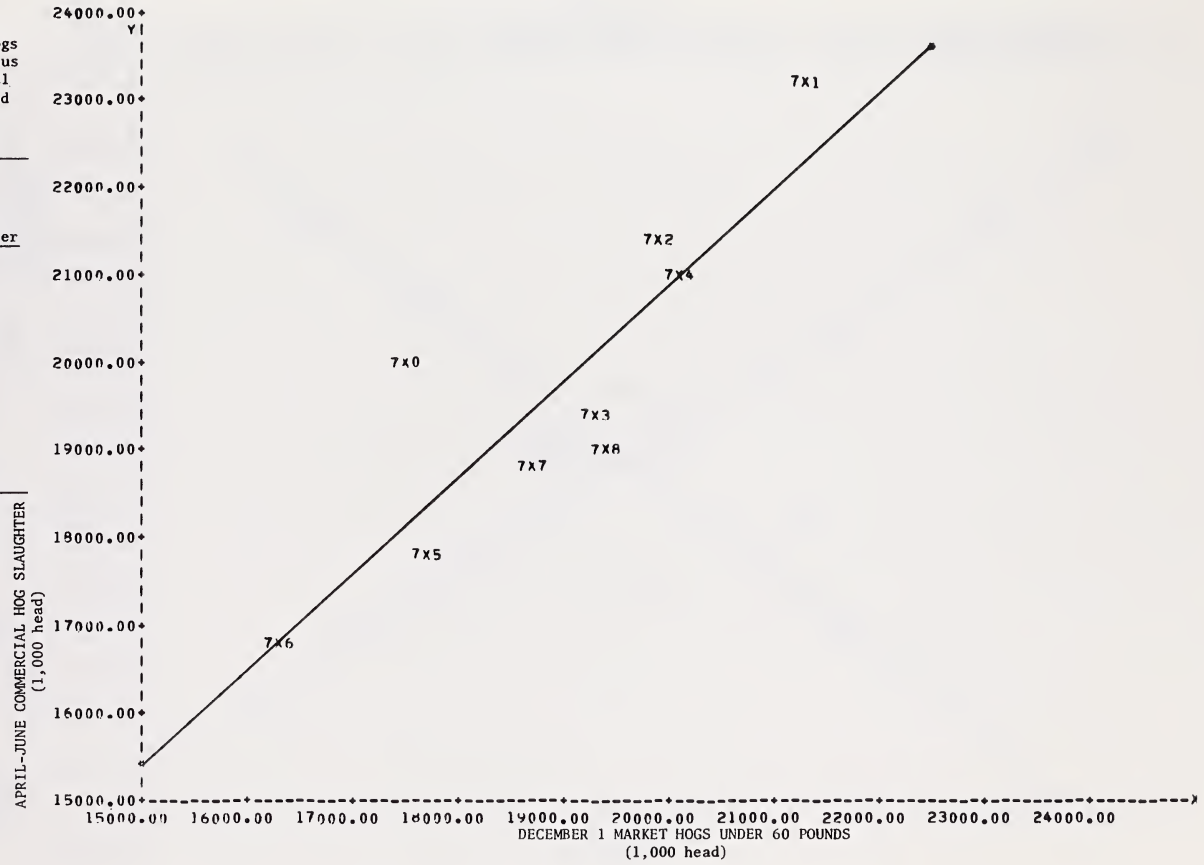


Figure 16--September-November pig crop versus April-June commercial hog slaughter, United States

Year	September-November pig crop X axis	April-June commercial hog slaughter Y axis
	- - 1,000 head - -	
1971	24,446	23,623
1972	22,746	21,403
1973	21,213	19,478
1974	20,789	21,014
1975	18,679	17,808
1976	17,634	16,822
1977	20,557	18,743
1978	20,962	19,037

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

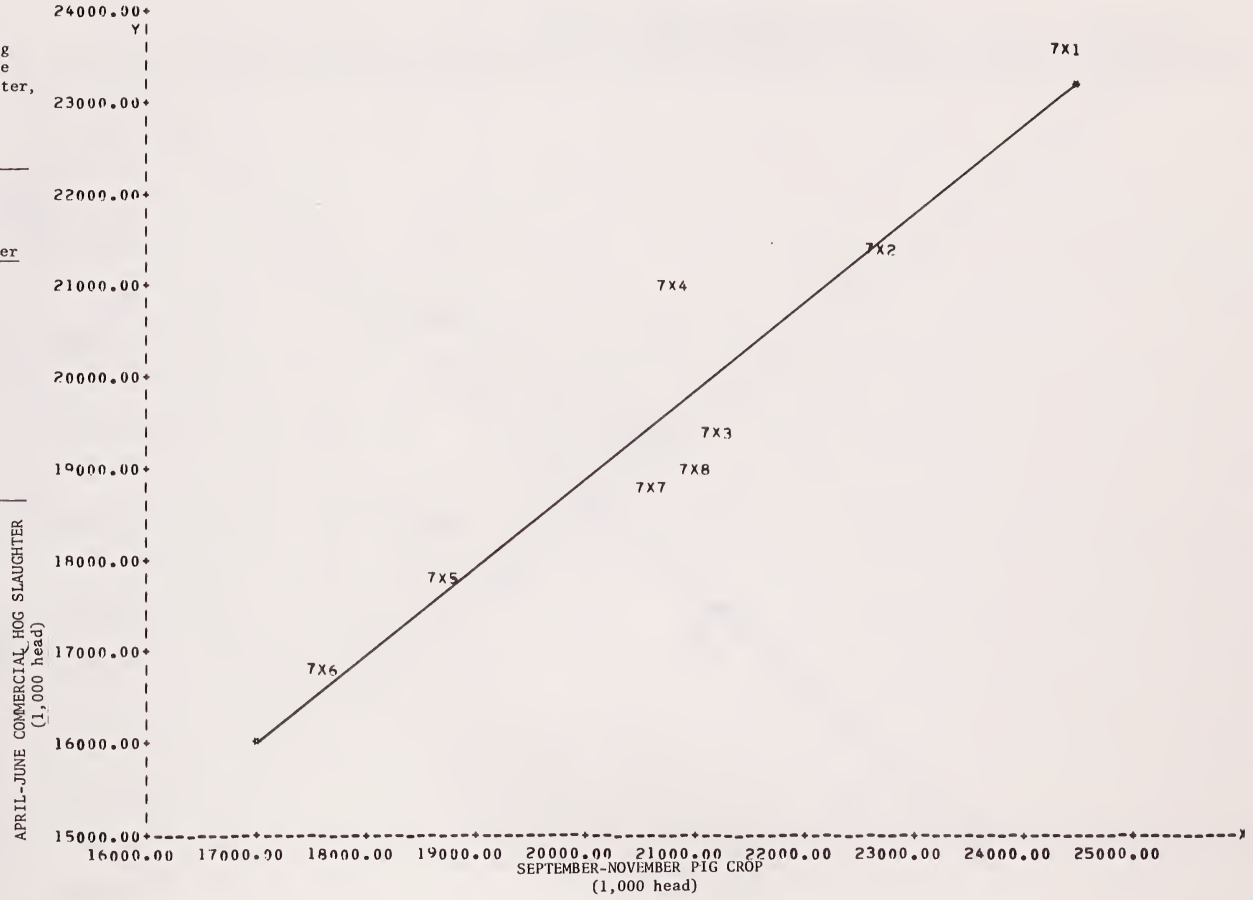


Figure 17--June 1 market hogs versus June-December commercial hog slaughter, United States

Year	June 1 market hogs (X axis)	June-December commercial hog slaughter (Y axis)
	- - 1,000 head - -	
1970	54,009	52,183
1971	55,970	54,206
1972	51,479	47,899
1973	50,583	43,167
1974	50,055	46,867
1975	40,502	37,506
1976	45,542	44,932
1977	45,772	44,748
1978	46,266	44,875

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

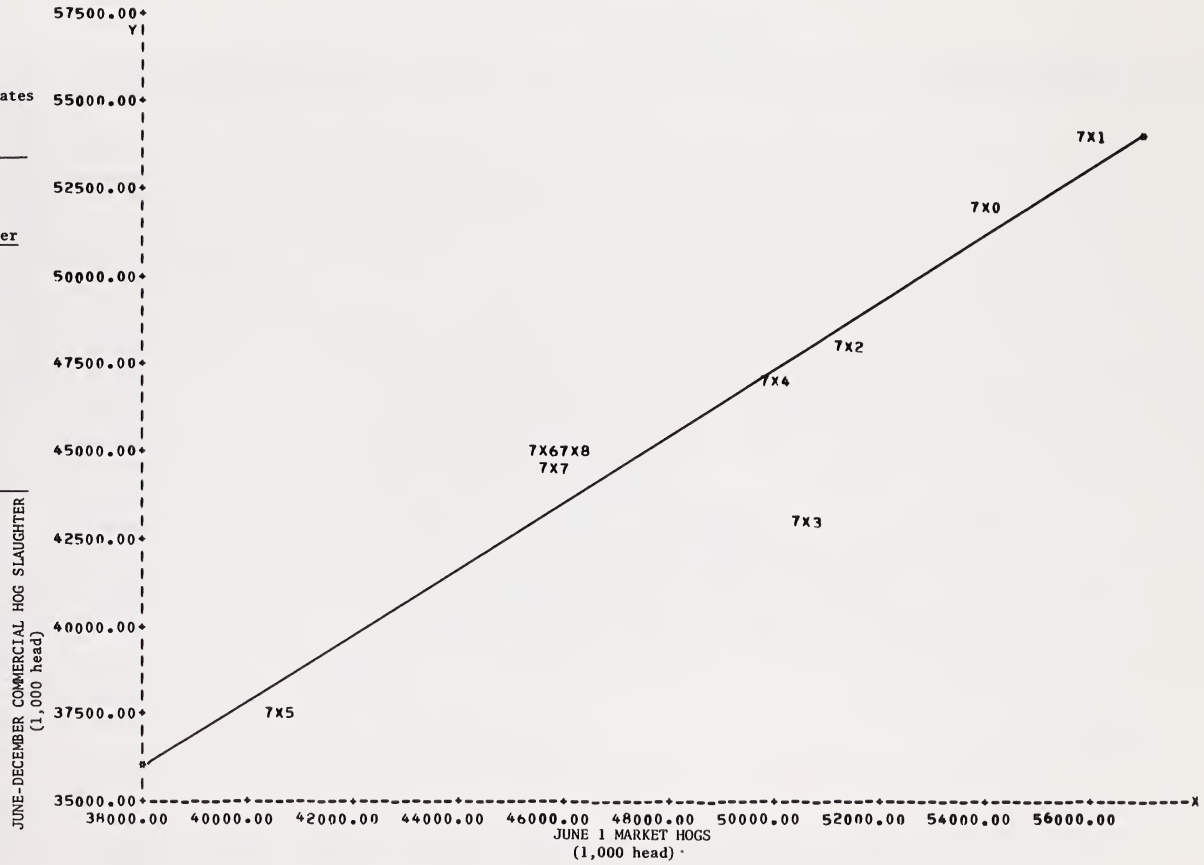


Figure 18--December-May pig crop versus July-December commercial hog slaughter, United States

Year	December-May pig crop (X axis)	July-December commercial hog slaughter (Y axis)
	- - 1,000 head - -	
1970	52,126	45,917
1971	51,918	46,598
1972	47,523	41,085
1973	46,125	37,093
1974	44,792	40,599
1975	35,530	32,120
1976	42,177	39,531
1977	42,960	38,791
1978	42,341	38,853

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

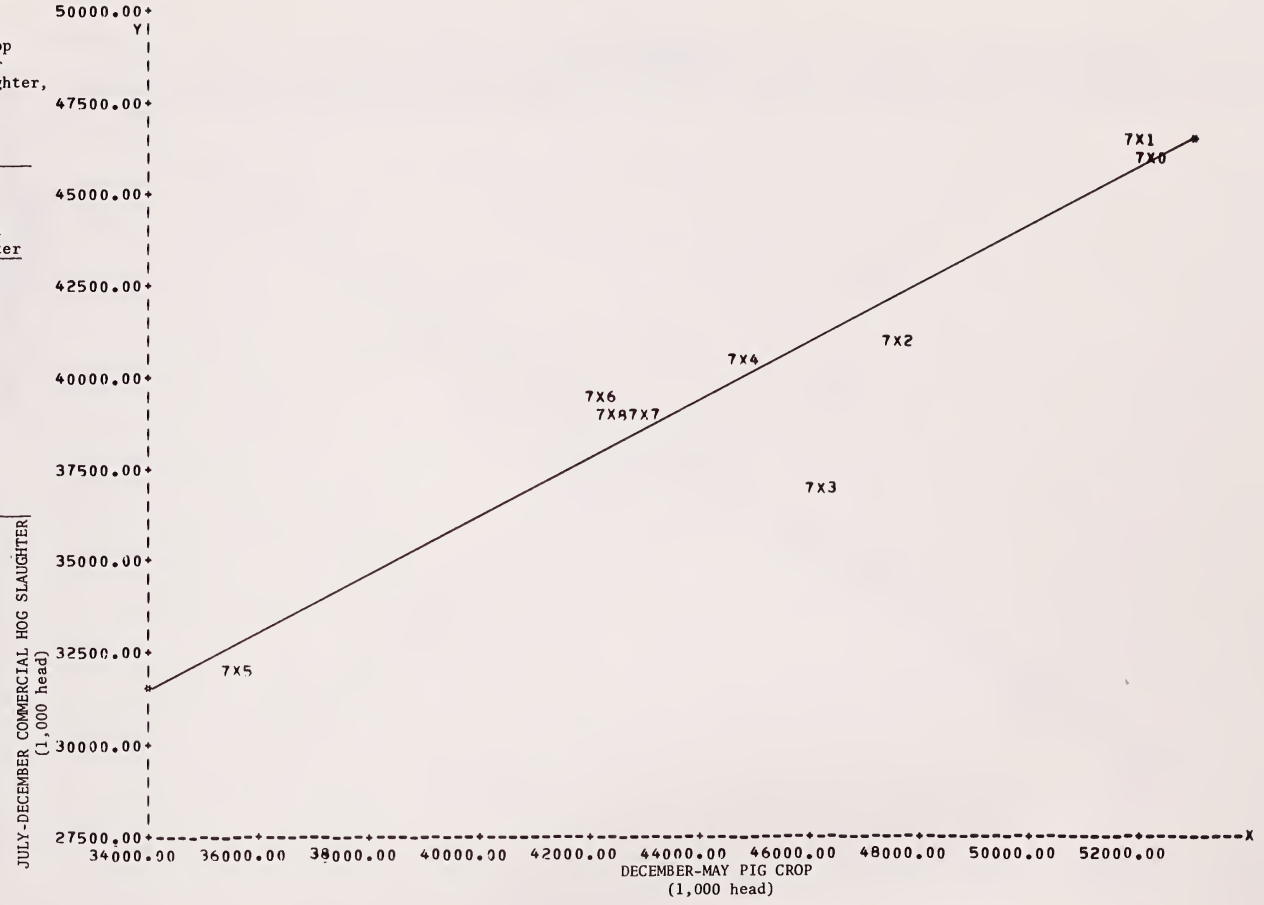


Figure 19--June 1 market hogs 180 pounds and over versus June commercial hog slaughter, United States

Year	June 1 market hogs 180 pounds and over (X axis)	June commercial hog slaughter (Y axis)
	- - 1,000 head - -	
1970	5,800	6,266
1971	6,888	7,608
1972	6,182	6,814
1973	6,071	6,074
1974	6,605	6,268
1975	5,341	5,386
1976	5,379	5,401
1977	5,643	5,957
1978	6,110	6,022

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

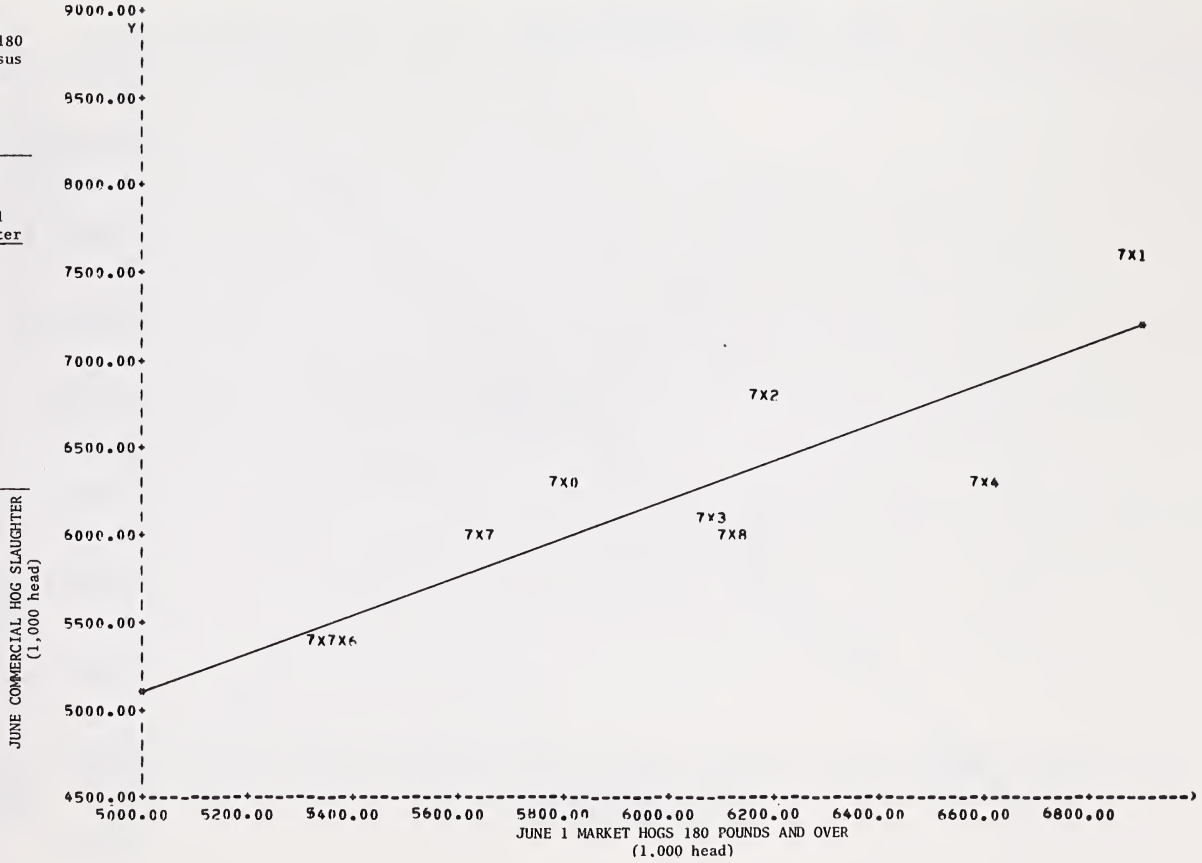


Figure 20--June 1 market hogs 60-179 pounds versus July-September commercial hog slaughter, United States

Year	June 1 market hogs 60-179 pounds X axis	July-September commercial hog slaughter Y axis
	- - 1,000 head - -	
1970	20,915	20,631
1971	22,593	22,320
1972	20,681	19,455
1973	20,180	16,875
1974	19,796	19,705
1975	16,765	15,307
1976	18,365	17,982
1977	18,571	18,294
1978	19,272	18,548

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

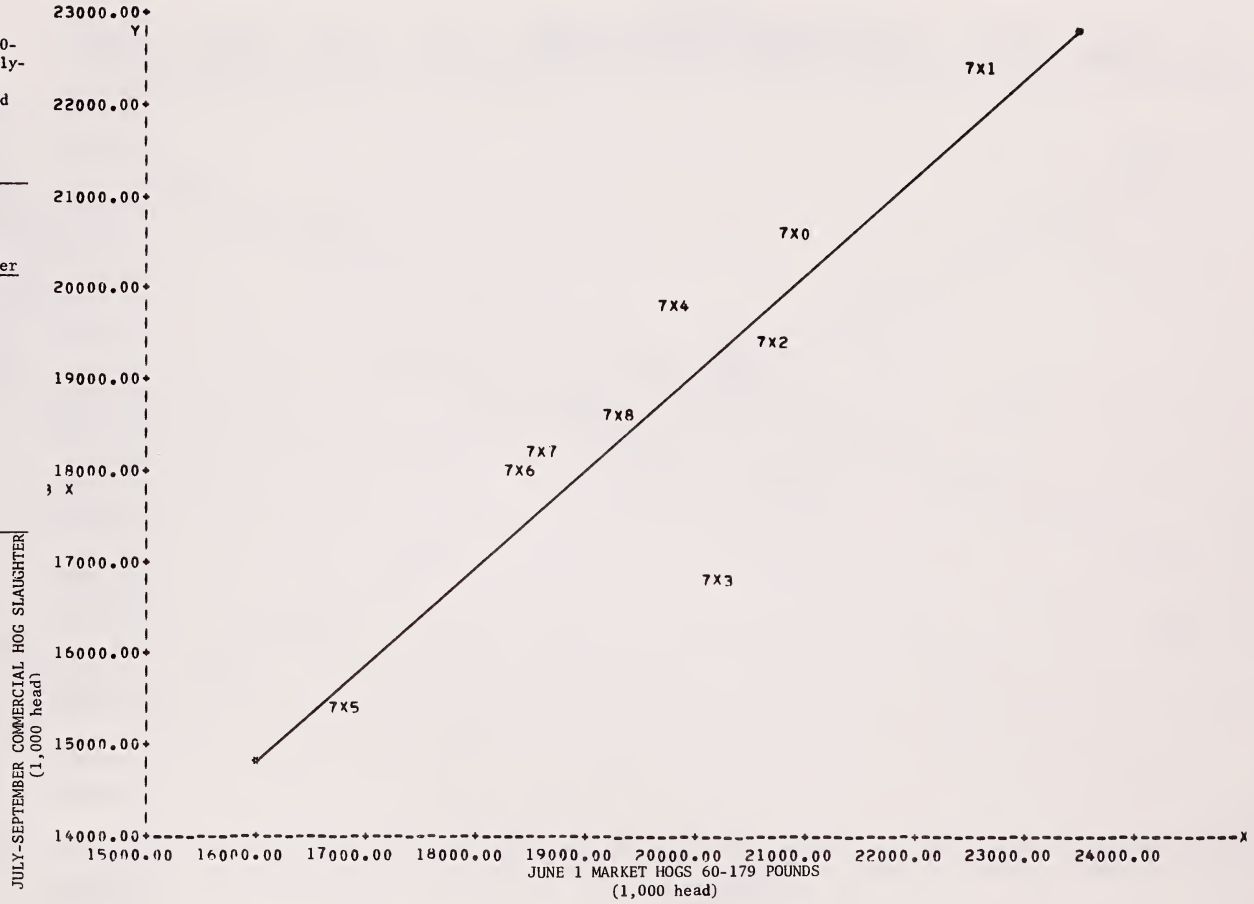


Figure 21--December-February pig crop versus July-September commercial hog slaughter, United States

Year	December-February pig crop X axis	July-September commercial hog slaughter Y axis
	- - 1,000 head - -	
1970	19,771	20,631
1971	20,959	22,320
1972	19,252	19,455
1973	19,050	16,875
1974	18,509	19,705
1975	15,287	15,307
1976	17,572	17,982
1977	18,532	18,294
1978	18,716	18,548

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

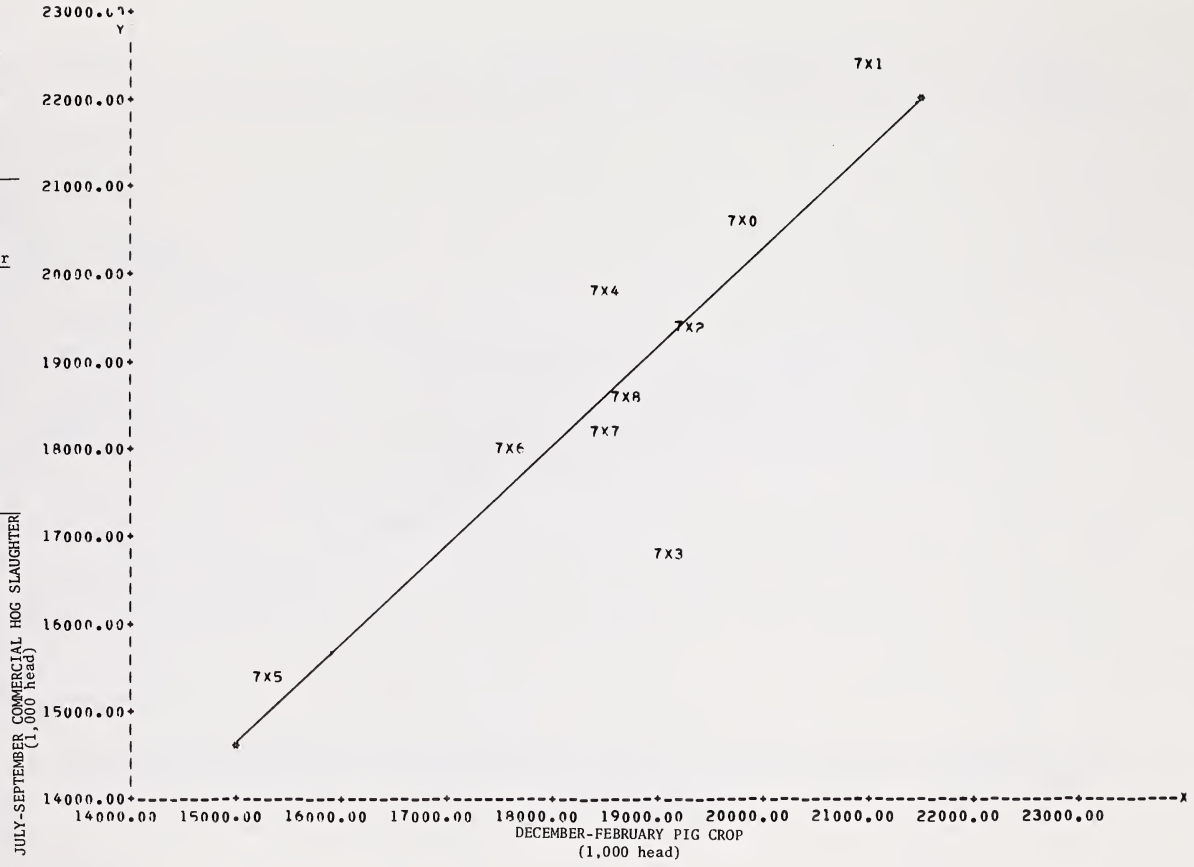


Figure 22--June 1 market hogs under 60 pounds versus October-December commercial hog slaughter, United States

Year	June 1 market hogs under 60 pounds	October-December commercial hog slaughter
	X axis	Y axis
	- - 1,000 head - -	
1970	27,294	25,286
1971	26,489	24,278
1972	24,616	21,630
1973	24,332	20,218
1974	23,654	20,894
1975	18,396	16,813
1976	21,798	21,549
1977	21,558	20,497
1978	20,884	20,305

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting point for 1975.

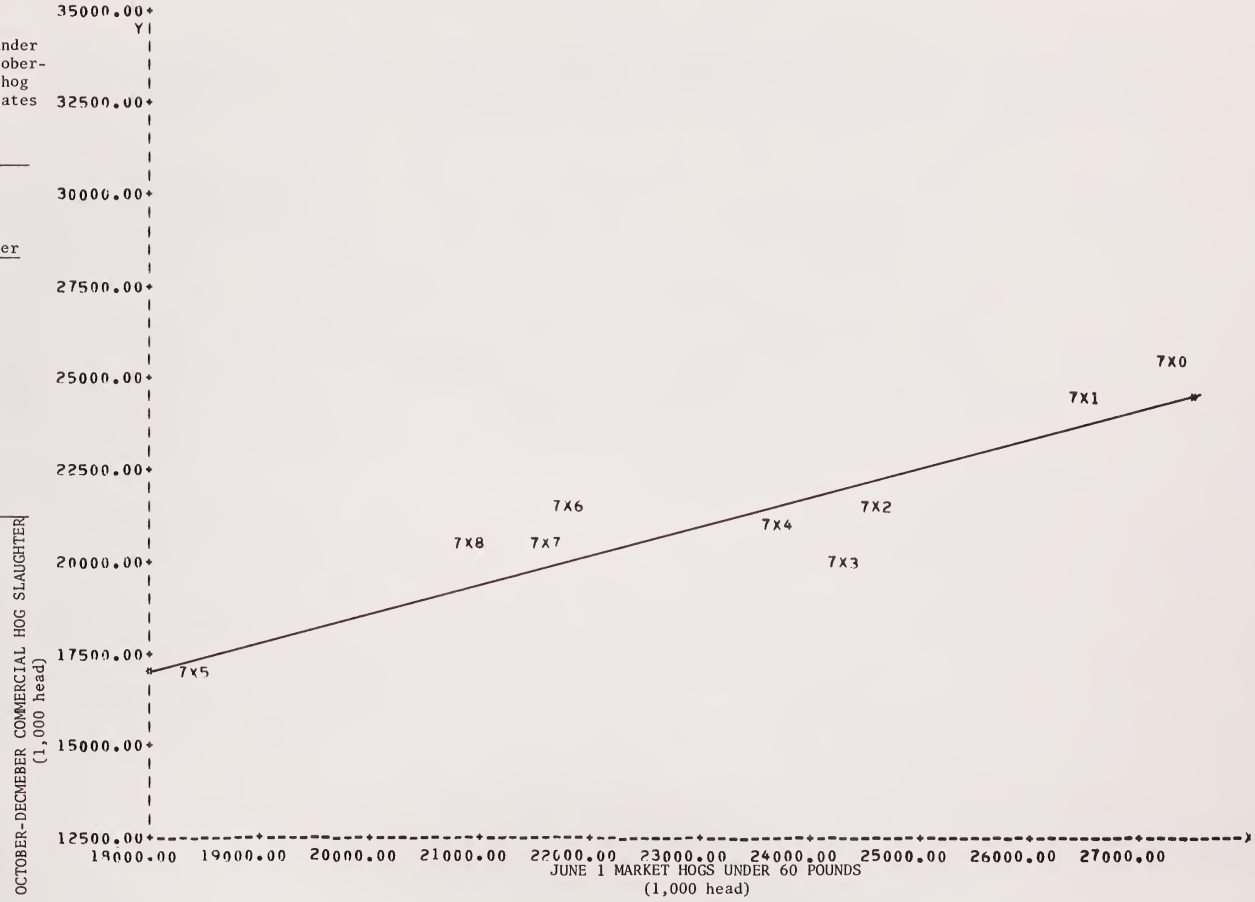
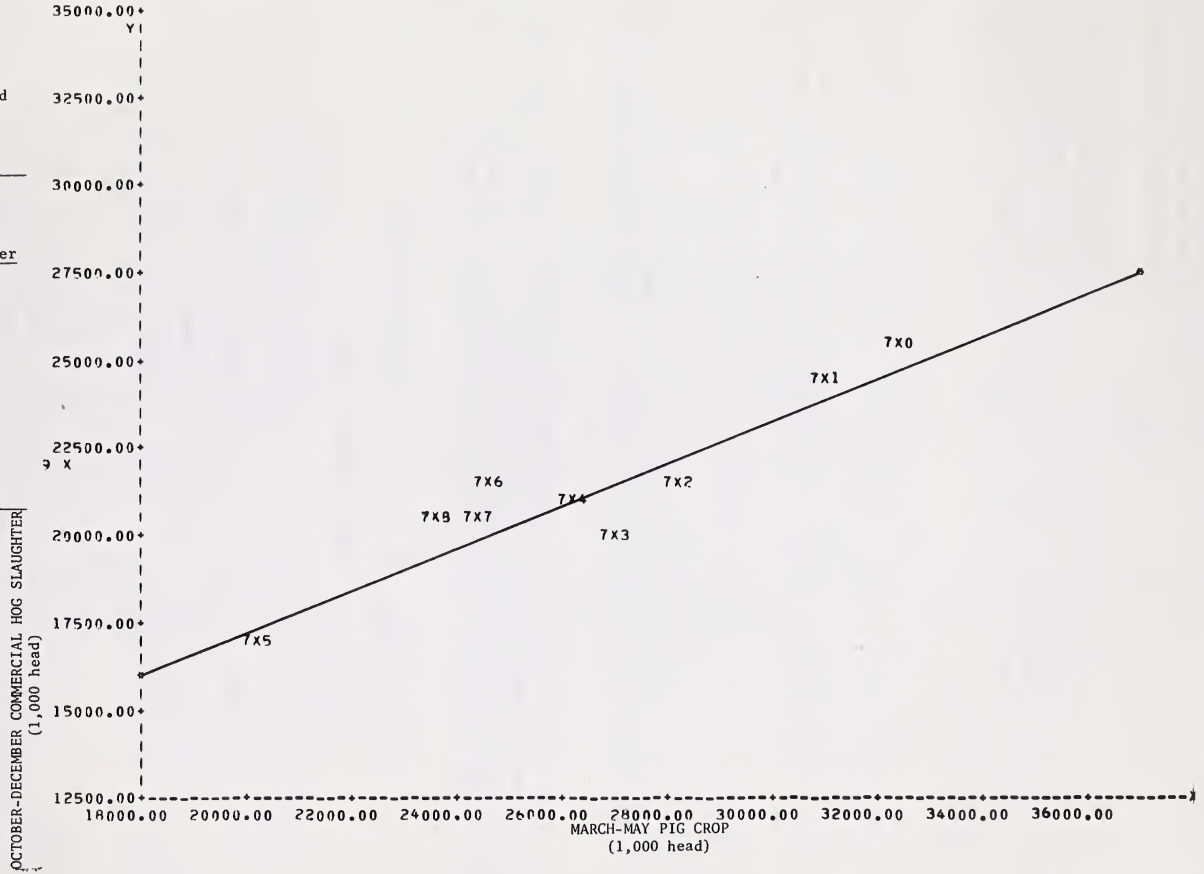


Figure 23--March-May pig crop versus October-December commercial hog slaughter, United States

Year	March-May pig crop X axis	October-December commercial hog slaughter Y axis
	- - 1,000 head - -	
1970	32,355	25,286
1971	30,959	24,278
1972	28,271	21,630
1973	27,075	20,218
1974	26,283	20,894
1975	20,243	16,813
1976	24,605	21,549
1977	24,428	20,497
1978	23,625	20,305

NOTE: The above values are plotted on the accompanying chart. For example, 7X5 in the chart represents the plotting for 1975.



rate adjusted for trend. The intentions tend to reflect industry conditions just prior to the report. When these conditions change, producers also alter their plans, sometimes dramatically. Various environmental and economic factors play an important role in determining what the actual farrowings will be.

Another set of slaughter charts, similar to U.S. charts, can be constructed from the quarterly hog and pig reports covering the 14 States. The March and September quarterly reports will provide an update on expected slaughter between U.S. semi-annual hog and pig reports. The 14 State charts are not included in this handbook, but are available from: Livestock Section, ESCS-Statistics, U.S. Department of Agriculture, Washington, D.C. 20250.

For most slaughter periods, there are two charts to read: one using market hogs and the other using the pig crop. Readings from these two charts may differ.

It can be seen that all the charts include dots and years above and below the diagonal lines. These dots indicate the actual marketings for those years, while the diagonal line indicates the average for 1970-78 (the year on the chart refers to the latest slaughter month). The distance between the dots and the diagonal lines show how far the annual marketings deviated from the 9-year average.

There is usually a logical explanation for each variation. For example, weight gains in 1973 were much slower than usual because of adverse weather during the winter and spring. Also, much of the 1972 corn crop fed to hogs over the winter was low in protein. In turn, it took hogs a longer time to reach market weights.

Hogs usually gain about 1 to 1-2/3 pounds a day from birth to slaughter. The common slaughter market weight averages 235-240 pounds, which means that most market hogs will be slaughtered in the following 5 to 7 months. Below is the approximate marketing schedule for the various weight groups through the year.

June 1 weights	Slaughter period
180 pounds and over	June
60-179 pounds	July through September
Under 60 pounds	After September

December 1 weights	Slaughter period
180 pounds and over	December
60-179 pounds	January through March
Under 60 pounds	After March

Judgment plays a part in forecasting future marketings. When reading the charts, one may want to adjust the forecast up or down, depending on what production or market prices are expected to do. The availability of supplies and prices of competing meats have a significant effect as do the impact of producer, packer-buyer, and consumer reactions to price changes

Producers tend to market at lighter weights when current prices are favorable but the near-term prospects are pessimistic. Thus, the number actually slaughtered may be larger than one would have projected. When prices are declining, producers tend to hold hogs a little longer in hopes prices will improve. This usually results in an increase in average weights and perhaps fewer hogs going to slaughter in one particular period than expected. But, hogs must eventually go to market. Maintaining an overview on their movement requires a close look at the inventory weight groups that

appear in each quarterly hog and pig report. By comparing current numbers and weights to previous years and previous quarters, a producer can draw some conclusions about how the pork assembly line is moving.

The relatively simple charting procedure described earlier can help get a perspective on the hog supply situation in the coming months. This can help producers time their marketings for the best price advantage. For instance, if one foresees a boost in marketings in the near future and has hogs nearing market weight, it might be desirable to move them to market before marketings increase and prices sag.

REACTION OF HOG PRICES TO RELEASE OF HOG AND PIG REPORTS

Table 19 shows the action of live hog markets prior to and immediately following the release of hog and pig reports since March 1973. The upward and downward movements are virtually identical; this supports the idea that the general price movement is well established prior to the release of the report.

Table 19 indicates a certain amount of regularity in the ups and downs of market prices. This reflects some of the seasonality of hog and pig production as well as the normal hog cycle. This cycle occurs when hog prices influence producers to breed more hogs until large supplies depress prices, causing farmers to reduce farrowings until prices start climbing again. The hog cycle moves along at a fairly slow pace; supplies do not appear or disappear overnight.

It takes just short of 4 months from conception to birth and roughly 6-1/2 months from the time a pig is born until it is ready for market. Therefore, just as the information in the hog and pig reports cannot bring about an immediate build-up or reduction in the hog inventory, neither is it likely to cause a sudden reverse in corresponding market prices.

INSTANT MARKET NEWS

The latest livestock market information is now available from an automatic telephone answering device. Producers and others who need up-to-the-minute market news can get this service by dialing a number any time of the day or night. Most of the machines are sponsored by producer organizations or commercial concerns. The reports are updated from two to five times daily, depending on the area services. All reports offer a variety of the most current information on livestock and meat prices, federally inspected slaughter, salable receipts, and futures trading. The following directory lists 89 services now in operation in 34 States.

Table 19--Hog and pig reports: Average weekly prices with changes

Release date	Inventory change from previous year	Weekly average price 1/			Price change from--	
		Week before	Week of release	Week after	Week before to week of release	Week of release to week after
	Percent	Dollars per cwt.				
1973:						
March 21	-0.4	39.54	38.07	34.02	-1.47	-4.05
June 22	-0.1	38.31	38.63	39.80	+.32	+1.17
September 21	+0.5	45.17	43.88	41.96	-1.29	-1.92
December 21	+4.7	39.27	40.34	40.53	+1.07	+.19
1974:						
March 22	+1.9	35.98	33.21	33.07	-2.77	-.14
June 21	-0.9	23.32	29.52	34.33	+6.20	+4.81
September 20	-3.8	35.64	34.68	36.07	-.96	+1.39
December 23	-9.9	40.63	41.00	39.43	+.47	-1.57
1975:						
March 21	-16.9	39.67	39.21	40.01	-.46	+.80
June 23	-19.0	52.72	56.96	55.66	+4.24	-1.30
September 19	-17.2	59.60	61.29	63.17	+1.39	+1.88
December 22	-10.0	48.06	48.45	47.13	+.39	-1.32
1976:						
March 22	+1.3	46.71	46.48	46.32	-.23	-.16
June 22	+9.3	51.13	51.51	50.98	+.38	-.53
September 22	+17.2	40.23	37.80	35.82	-2.43	-1.98
December 22	+11.1	38.59	39.32	39.43	+.73	+.11
1977:						
March 22	+7.7	37.75	36.86	36.04	-.89	-.82
June 23	+0.1	43.30	44.17	45.96	+.87	+1.79
September 21	+2.3	41.36	40.58	41.51	-.78	+1.23
December 22	+2.7	43.45	45.18	44.65	+1.73	-.53
1978:						
March 21	+1.3	48.13	47.04	47.15	-1.09	+.11
June 22	+0.8	49.14	46.94	46.98	-2.20	+.04
September 20	-0.6	49.01	50.09	51.92	+1.08	+1.83
December 21	+5.9	49.12	50.37	49.32	+1.25	-1.05
					Number	
Number changes:						
Up	--	--	--	--	13	12
Down	--	--	--	--	11	12
					Dollars	
Dollar changes:						
Total:						
Up	--	--	--	--	20.12	15.35
Down	--	--	--	--	14.57	15.37
Net	--	--	--	--	5.55	-.02

-- = Not applicable.
1/ Barrows and gilts, 7 markets combined.
Source: Market News, Agricultural Marketing Service.

Alabama:
- Montgomery:
  - 5 p.m.-8 a.m. C-(800) 392-5804
  - 5 p.m.-8 a.m. H-(800) 392-5801 (Alabama only)

C-Cattle H-Hogs

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- Little Rock (501) 372-3933

Arizona:
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- El Centro (714) 352-8160
- Redding (916) 246-8480
- Stockton (209) 466-3085
- Visalia (209) 733-3750

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- Kansas City (816) 421-7694
- Mexico (314) 581-6250
  - N/A 8:30-9:15 and 11:30-12 a.m.
- So. St. Joseph (816) 238-1203
- Springfield (417) 866-4986
- West Plains (417) 256-9631

Montana:
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Nebraska
- Aurora (402) 694-3183
- Beatrice (402) 223-5231
- Beemer (402) 528-3654
- Columbus (402) 564-1133
- Exeter (402) 266-5461
- Grand Island (308) 384-5101
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- Omaha (402) 731-5355
- Superior (402) 879-4600
- Tekamah (402) 372-5650
- York (402) 362-6623

New Mexico:	
Clovis	(505) 763-3030
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Albany	(518) 457-6672
North Dakota:	
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Columbus	(614) 466-6484
London	(614) 852-2311
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Oklahoma City	(405) 236-5491
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