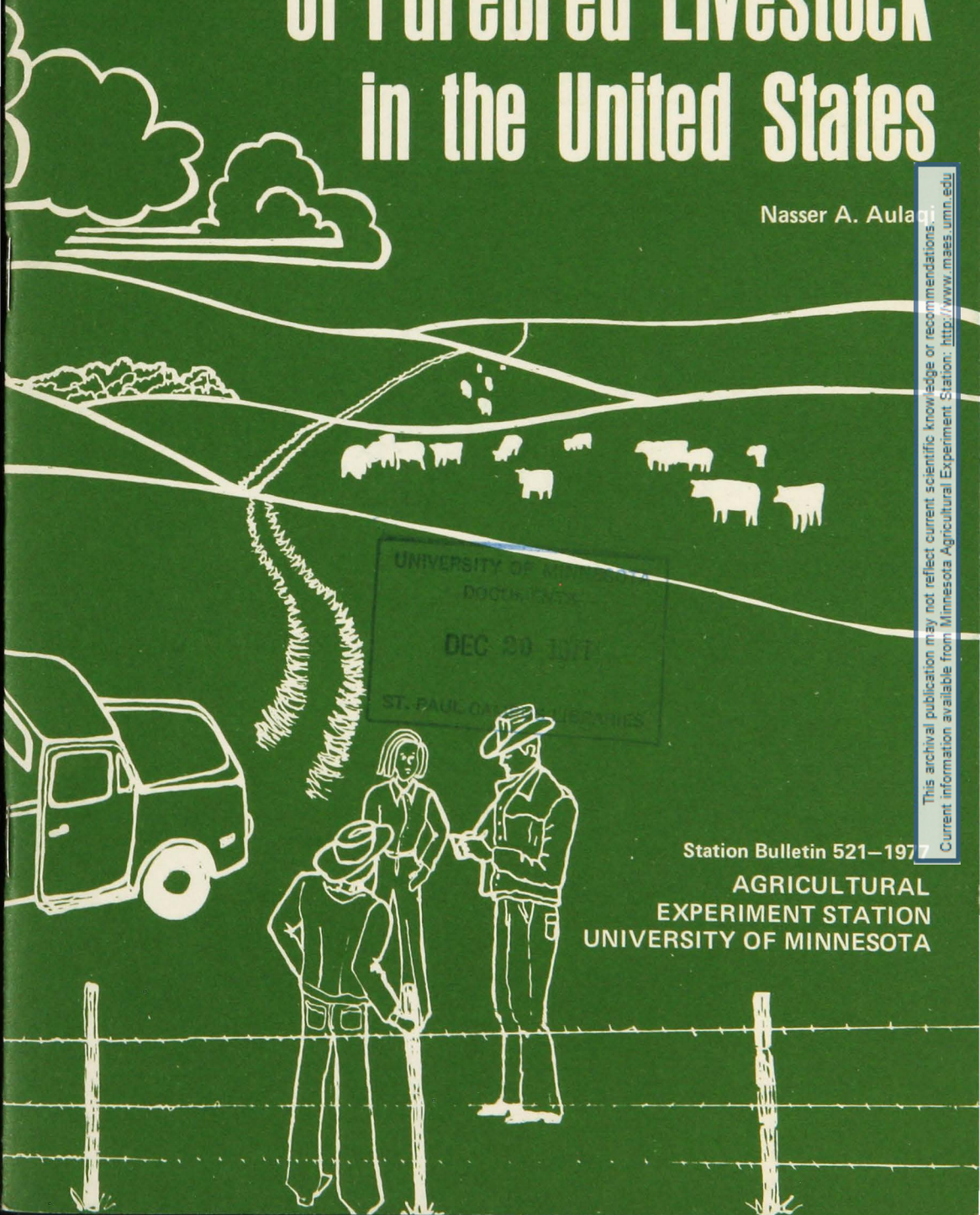


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Marketing of Purebred Livestock in the United States

Nasser A. Aulagi



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Marketing of Purebred Livestock in the United States

Nasser A. Aulaqi*

Introduction

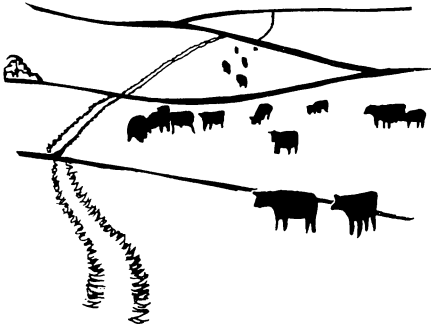
The purebred business has traditionally been an important segment of the United States livestock economy. Production of outstanding purebred animals has contributed substantially to upgrading the quality of commercial livestock. Many of the improvements in domestic livestock production efficiency and yield can be traced back to the use of carefully selected sires of purebred animals.

Despite the economic importance, purebred animals represent only a small percentage of total livestock numbers. There are no reliable and precise data available on the total number of purebred U.S.

livestock, but it is believed that most is classified as grade or non-purebred. There are fairly accurate data on the number of purebred animals registered every year, but annual purebred registrations account for only a fraction of the total purebred population. Table 1 shows total livestock numbers and purebred registrations for 1974 and table 2, the number and value of purebred livestock marketed the same year. The 1974 value of purebred cattle and swine was about \$778 million. This represents the value of animals marketed just in a 12-month period. Consequently it neglects and grossly underestimates the total economic value of purebred animals which extends beyond current marketings

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and inventories because of the central importance of purebred stock to upgrading the quality and productivity of the commercial livestock sector.

In recent years the value of individual purebred animals reached record highs. In 1975 a dairy bull was sold for \$280,000 and two dairy cows for \$197,000 and \$130,000, respectively. During the same year, 28 head of a major dairy breed which were sold at public auction averaged more than \$20,000. A beef bull brought \$41,000. Table 3 provides data on the number of animals of a major dairy breed which sold for more than \$5,000 a head. These extremely high prices are not typical for the purebred industry or for

Table 1. Total number of livestock and purebred registrations by species, 1974

Species or class	Total, including purebred	Purebred registrations	Purebred as percent of total
Beef cattle	112,315,000	1,029,489	1
Dairy cattle	15,227,000	388,230	2.5
Swine	61,022,000	352,142	0.6
Sheep	16,545,000	87,741	.5

Sources: Data on total livestock numbers were obtained from *Agricultural Statistics* 1974, U.S. Department of Agriculture, Washington, D.C. Purebred registrations were compiled from the National Society of Livestock Record Association's Annual Report and Directory, 1974-75.

Table 2. Purebred animals marketed and value of marketings, 1974

Species and class	Number ^a head	Value per head ^b dollars	Total dollars
Beef cattle	602,348	907	546,329,636
Dairy cattle	210,127	992	208,445,984
Swine	90,366	257	23,224,062
Sheep	52,115	NA ^c	NA
Total	954,956	NA	777,999,682

^aCompiled from Annual Report of the National Society of Livestock Record Associations, 1974-75.

^bThe average price of the major breeds paid at public auctions was used to compute the average price per head of all animals sold. The average price of purebred animals might be slightly lower than the price paid at public auction.

^cNot available.

Table 3. Number of purebred holsteins selling at public auction in selected price ranges, 1973-75

Price	Number of head sold		
	1973	1974	1975
\$20,000 up	28	19	15
15,000–19,999	13	12	8
10,000–14,999	32	25	16
5,000–9,999	128	137	125
	201	193	174

*Source: *Holstein-Friesian World*, March 25, 1976.

any particular breed or species within the industry but are reported primarily to illustrate the tremendous variation in prices of individual purebred animals.

The purebred industry is characterized by extremely wide price fluctuations. As a result, breeders suffer substantial losses often not offset by later profits. Few breeders can manage inventories so that large numbers of cattle are available when prices are rising.

In addition to price variation, over time, prices for purebred animals vary greatly from herd to herd and between breeds. There are also wide differences in the prices of individual animals within the same herd.

Objectives

Despite the existence of imperfect markets in which large price fluctuations are sustained, economists have given little attention to the marketing and pricing aspects of purebred livestock. Those economic studies conducted over the last three decades were almost entirely devoted to the economic

problems of commercial livestock.¹ This report provides a brief summary of the major economic characteristics of the purebred livestock industry with major emphasis on beef and dairy cattle. Specific objectives follow:

- To describe marketing methods for purebred animals.
- To examine the factors which influence the price of purebred animals.
- To evaluate historical trends in prices of purebred livestock.
- To assess very briefly the future of the purebred industry.

Data Sources

There is no public price information available for breeding animals including registered animals. In 1930 systematic reporting of sale prices for purebred livestock was discontinued. The only remaining price sources of registered animals are the breed association reports and journals. Because of the lack of public price quotations it was necessary to develop a time series of sale prices from purebred associa-

¹To the author's best knowledge, only one study during the last 30 years dealt with the purebred industry: "Trends in Price of Purebred Cattle" by Austin A. Dowell and Arnold Brekke, Minnesota Agricultural Experiment Station Bulletin No. 389, 1948.

tion journals and reports. More detail on data availability and development will be presented later in the report.

Marketing of Purebred Livestock

Commercial livestock (feeder and slaughter livestock in particular) is traded and priced according to relatively uniform grade, quality, and weight specifications. On any day, prices for commercial livestock are established for a wide range in grades, qualities, and weights for almost any area in the U.S. with locational differences in prices which reflect deficit-surplus conditions and transportation costs.

In contrast marketing registered (purebred) animals differs in many ways from that of commercial livestock. Some of the major differences follow:

- There are no regularly established markets for registered livestock.
- Prices of registered animals are not reported by public agencies of government such as the Federal-State Market News Service.
- Purebred breeders use a substantial amount of advertising and promotion to establish and maintain a dependable and regular demand for their animals.
- Breeding animals (both registered and grade) are usually sold on a per head rather than a unit of weight basis.

OUTLETS FOR PUREBRED LIVESTOCK

The value of purebred animals extends beyond milk and/or meat value because demand largely de-

pends on the value as foundation breeding animals. Thus, the purebred breeder caters to both commercial and purebred markets. Demand for female purebreds comes primarily from other purebred breeders. However, occasionally a commercial producer may buy purebred females for crossbreeding programs. In contrast, a large portion of purebred bulls, rams, and boars are sold to commercial herd owners. Traditionally, commercial producers have used purebred sires to upgrade the quality of their herds and flocks.

METHODS OF SELLING PUREBREDS

Because of the lack of large and recognized public markets and price reporting for purebreds, breeders must find their own markets and establish a demand for their livestock. Many methods are used, but two broad categories prevail:

- **Private treaty.** This method of selling includes direct sales, mail order buying, and purchase made through breed association field men.
- **Public sales.** These include private producer sales and consignment sales.

Private Treaty: Selling purebred livestock at the farm is very common. In fact, private treaty sales represent the major portion of purebred sales (table 4). Its advantage is that buyers may become regular customers of a particular breeder if the livestock satisfies them. In addition, selling expenses are minimal since the animals are not transported and/or fitted as in other forms of marketing.

Private transaction by mail is another form of private treaty sell-

ing of purebred animals. Normally, letters and catalogs are sent to prospective buyers with detailed information on the animals. The exact proportion of purebred animals sold through this method is not known, but as table 4 indicates, private treaty sales, which include mail order buying, represent more than 75 percent of the animal sales for which data are available.

Public Sales: Public auction sales take two forms—consignment or

private production. Normally breed associations sponsor consignment sales. Such sales provide a suitable outlet for breeders with only a few animals for sale. Large individual breeders may hold their own public sales on their farms or in nearby towns.

Table 4 shows that on the average only 20 percent of purebred beef cattle, 14 percent of dairy cattle, and 18 percent of swine were marketed through public auction in the

Table 4. Percent of purebred marketings through private and public sales, 1970-75^a

Year	Beef cattle		Dairy cattle		Swine	
	Public	Private	Public	Private	Public	Private
1970	15	85	14	86	14	86
1971	17	83	12	88	15	85
1972	17	83	15	85	20	80
1973	17	83	NA ^b	NA	19	81
1974	20	80	13	87	18	82
1975	25	75	NA	NA	21	79
Average	20	80	14	86	18	82

^aData are based on sales of one beef breed, three dairy breeds, and one swine breed.

^b Not available.

Source: Data were compiled from breed journals and private correspondence.

Table 5. Price of purebred cattle by breed, 1966-1975

Year	Beef breeds		Dairy breeds		
	Hereford	Angus	Holstein	Guernsey	Jersey
1966	508	476	495	441	377
1967	522	523	527	518	401
1968	484	464	579	420	394
1969	530	490	506	423	457
1970	621	503	656	444	559
1971	664	529	698	537	534
1972	857	604	832	562	553
1973	1,050	816	1,015	615	654
1974	960	869	1,088	605	727
1975	694	564	1,140	546	610
Average	689	584	691	511	523

Source: Compiled from breed journals.

last 6 years. Although the data do not represent all purebred breeds, there is no reason to suspect that the proportions for the other breeds were substantially different.

Despite the small percentage of sales represented, public auctions play an important role in the pricing of purebred animals and one very similar to the role of central markets in pricing commercial livestock. Prices paid at private treaty sales are influenced by the prices established with competitive bidding at public auctions.

Factors Determining Prices

Many factors help determine the price of purebred animals at a given time and place. These factors cover an even broader range than those affecting commercial livestock value. Consequently, the variation in prices of purebred animals is greater (in extreme amounts) than the variation in prices of commercial livestock animals.

The price of an individual purebred animal depends on its own characteristics such as age, quality, performance, bloodline, etc., in addition to the basic economic factors which affect all animals of a similar breed or class. Although this publication's analysis is devoted primarily to the average price of all animals within a particular breed and species, an attempt is made to explain factors underlying the tremendous variation in prices of individual animals. Thus, the factors affecting values of purebred animals can be grouped as follows:

- Factors related to breed and individual animals.
- General economic factors including the conditions of the feeder, slaughter, and milk markets.

FACTORS RELATED TO BREED AND INDIVIDUAL ANIMALS

The prices cited earlier for individual purebred animals illustrate the extreme variation in purebred animal prices. Aside from the normal variation in prices because of age, health status, etc., descriptions follow of four of the most important factors influencing the value of purebred livestock.

1. Type and Conformation. Type is defined as the standard that combines all the physical characteristics which purebred owners consider desirable in a purebred animal: color, shape, size, and other distinctive points. In show rings, type is measured by the ranking of individual animals in age classes determined by a particular judge at a particular show. This is very subjective and varies substantially from one show to another, depending on the comparative quality of animals competing. Very often judges view animals on ribbon winning ability rather than economic value.

A study conducted by the *Holstein-Friesian World* (March 9, 1958) attempted to determine the impact of type classification on sale of purebred Holsteins sold at public auctions. There was a close correlation between type classification and price. Cows with better type classification sold at higher prices than cows of lesser grade type. For example, the average price for cows classified as excellent was \$1,335, while cows classified as very good brought only \$680. Most owners of purebred animals consider type an important factor in the sale of registered animals. Purebred owners also associate high type classification with high production.

2. Pedigree and Progeny. Complete and accurate record keeping on the performance of both male and female ancestors is important in valuing purebred animals. Most of the breeding sires in the U.S. are selected by pedigree or pedigree and type. Extremely high prices are paid for sires with excellent progeny and pedigree records.

3. Breed. Prices paid for purebred animals depend, in part, on the breed involved. The variation in price between different breeds is partially caused by the current popularity of a particular bloodline or breed. For example, many of the six-figure prices reported in the breed journals are for the new exot-

ic breeds. Table 5 provides a comparison of prices paid at public auctions for five major registered dairy and beef breeds over the last 10 years. Over the 10-year period Holsteins averaged \$180 more than Guernseys and \$168 more than Jerseys. The variation can be at least partially explained by the fact that Holsteins are generally the largest milk producers of the three breeds.

4. Male Versus Female Purebreds. The value of purebred animals varies by sex. Bulls, boars, and rams are usually priced higher than cows, gilts, and ewes. Figures 1, 2, and 3 show average prices of registered male and female beef,

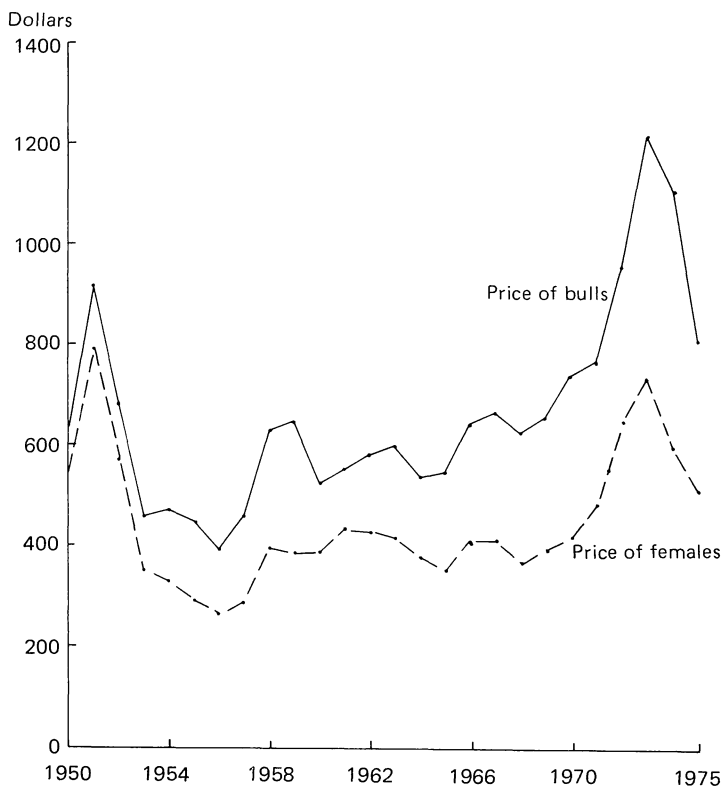


Figure 1. Average prices of purebred beef bulls and females sold at public auction, 1950 to 1975

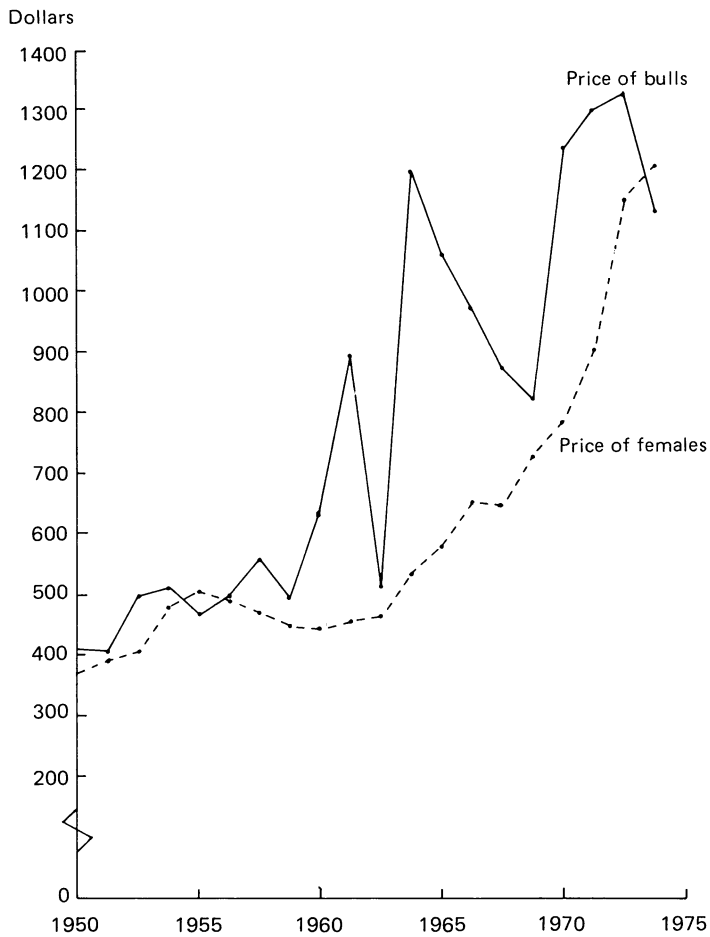


Figure 2. Average prices of purebred dairy bulls and females sold at public auction, 1950 to 1974

dairy cattle, and swine sold at public auction in the U.S. from 1955 to 1975. The data are based on prices received at public auctions for males and females of one beef, dairy, and swine breed. Each one of these breeds represents at least 30 percent of all animals sold within species or class. Prices of beef bulls were significantly higher than those of females. The same is true for dairy and swine where prices of bulls and boars were higher than cows and gilts.

While prices of purebred males and females tend to move together, this can be at varying rates. There are few dairy bulls sold at public auction; therefore, prices are largely influenced by the occasional fantastic prices of individual dairy

bulls. The prices of bulls are also influenced by a wider range of factors than the prices of females. For example, dairy bulls are used by commercial producers to upgrade herds and uncertainties in the commercial sector can cause sharp fluctuations in bull prices.

GENERAL ECONOMIC FACTORS

Data are only available for some of the major breeds of purebred livestock and, as indicated earlier, not the total number of purebred animals sold. The breeds for which data are available do, however, represent most of the purebred livestock. Most of the sales transactions are conducted via direct sell-

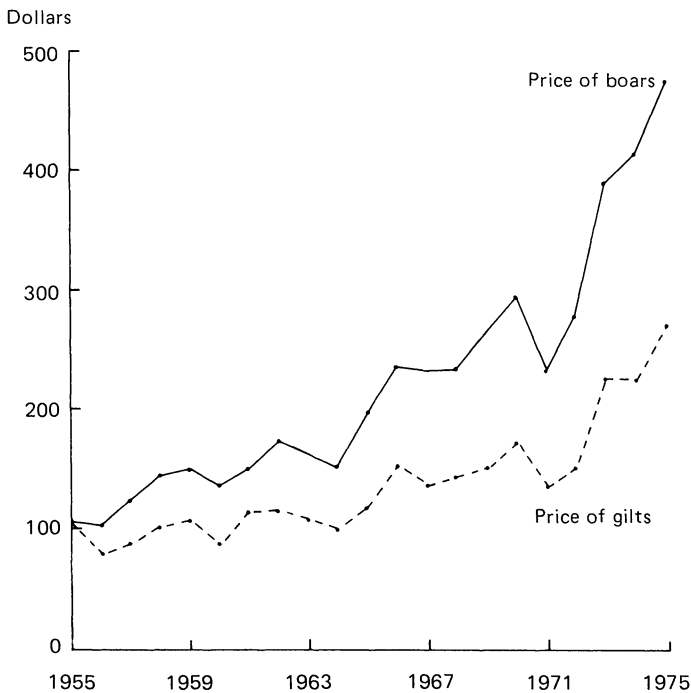


Figure 3. Average prices of purebred boars and gilts sold at public auction, 1955 to 1974

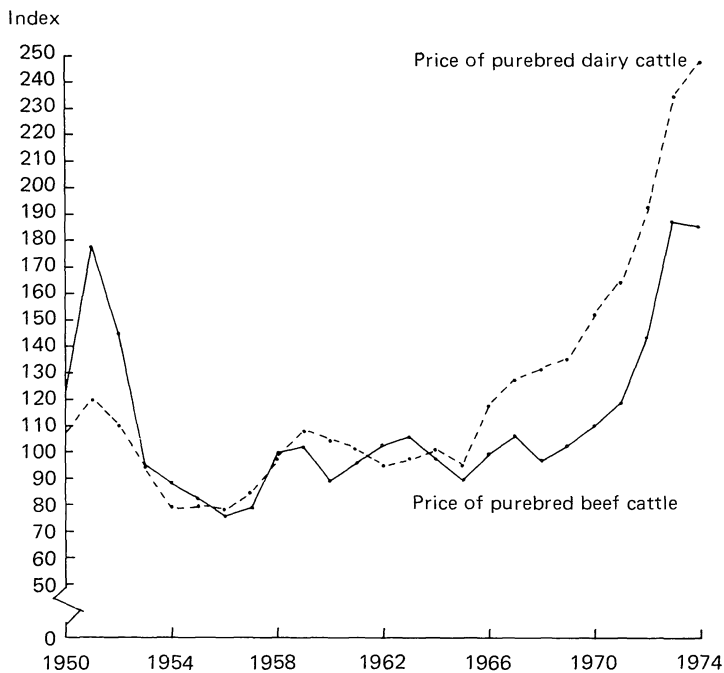


Figure 4. Indices of prices of purebred beef and dairy cattle sold at public auction, 1950 to 1974 (1960-1962=100)

ing, but public auction sales are considered an accurate barometer of price and demand conditions in the purebred market.

Figure 4 shows indices of prices received at public auction for purebred beef and dairy cattle. The data include three major breeds of dairy cattle and two major breeds of beef cattle. The general price trend is relatively similar for purebred beef and dairy cattle. A boom occurred during the Korean conflict which was immediately followed by a period of widely fluctuating prices until 1967. Purebred dairy prices have been on the increase since 1965 and between 1965 and 1974 the price of purebred dairy cattle increased more than 161 percent. Similarly, the price of purebred beef cattle increased more than 109 percent.

Dairy prices generally were more stable than purebred beef prices. This stability can be partially explained by the fact that government programs provided support floors for milk prices. Beef cattle prices, however, were determined under highly competitive conditions. The major economic factors which influenced average prices of purebred livestock are evaluated separately in the following sections for beef cattle, dairy cattle, and swine.

Purebred Beef Cattle: The breeder of purebred beef cattle is engaged in raising and selling seed stock animals to be used by other purebred breeders and by commercial cattle producers. Generally, demand for purebred females comes from other purebred breeders while the majority of purebred sires go to commer-

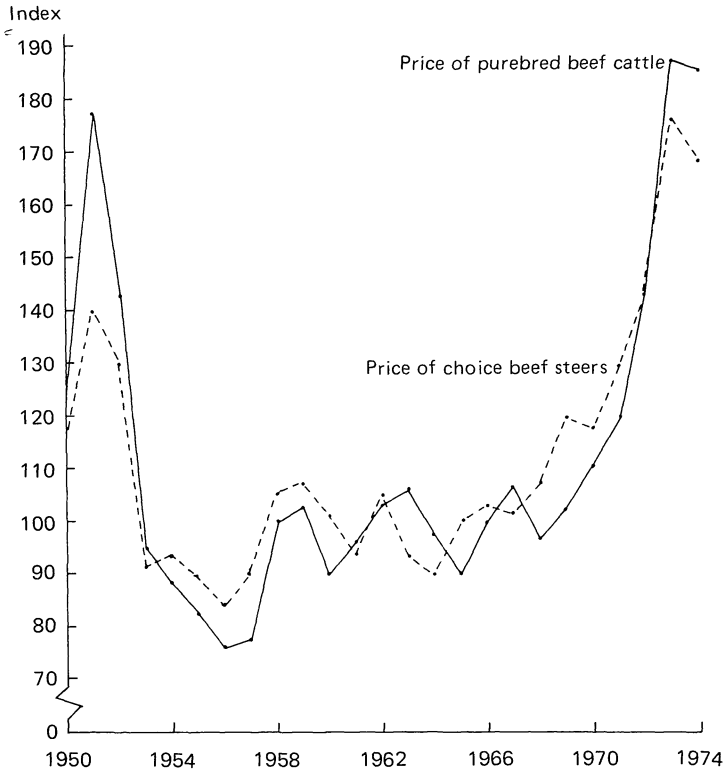


Figure 5. Indices of prices of purebred beef cattle sold at public auction and U.S. price of choice beef steers at Omaha, 1950 to 1974 (1960-1962=100)

cial cattle producers to upgrade herds.

Prices paid for purebred beef cattle are affected by many factors including the price of beef, the level of net farm income, and general economic conditions. Figure 5 contains prices of purebred beef cattle and prices of choice steers at Omaha from 1950 to 1974. For most of the years the prices of choice beef steers and purebred beef cattle moved parallelly. However, during boom periods such as the Korean conflict, there was a marked divergence in commercial and purebred prices. It appears that during boom periods speculative activities send purebred prices beyond any value

based on their use for ordinary production purposes. A similar pattern was observed in a study conducted in 1948² which found that purebred beef cattle prices were much higher compared with the price of commercial cattle during World Wars I and II than during the nonwar periods. The authors concluded that purebred breeders pay close attention to prices of slaughter cattle during normal or low price periods but little attention during a boom. In other words, meat prices set an effective floor for purebred beef cattle prices but do not set an effective ceiling. Actually, the speculatively high prices paid for purebred cattle

²Dowell and Brekke, op. cit., pp. 14-15.

during slaughter cattle price booms might be a desire for a continuation of the price boom and enhanced value of purebred animals.

Farm net income is another factor which influences the price of purebred beef cattle (figure 6). Although higher purebred prices have generally been related to higher farm income, the income change comes first, generating changes in purebred prices. During the early fifties, purebred beef cattle prices in-

creased more than net farm income. However, in 1973 the opposite occurred: net farm income rose much higher than purebred beef cattle prices. Figure 6 data suggest a close correlation between net income of farmers and prices paid for purebred beef cattle. A regression equation was estimated to quantify some of the factors which influenced the price of purebred beef cattle from 1950 to 1974. The estimated equation follows:

$$X_{1t} = -24.538978 + 1.198765 X_{2,t-1} + .017563 X_{3,t-1}$$

(5.9492) (.1604)

$$R^2 = .88$$

Where:

X_1 = Index of prices received for purebred beef cattle sold at auction, 1960-62 = 100.

X_2 = Index of prices of choice beef steers at Omaha, 1960-62 = 100.

X_3 = Index of U.S. net farm income, 1960-62 = 100.

t = Current year.

t-1 = Lagged one year.

The numbers in parentheses are the t-ratios. The signs of the regression coefficients agree with economic logic, but the coefficient relating income to price of purebred cattle is not statistically significant. The lack of statistical significance is probably caused by the high intercorrelation between income and steer prices (the independent variables). The regression equation indicates that from 1950 to 1974 almost 88 percent of the variation in purebred beef cattle prices is explained by variations in the price of commercial beef steers and net farm income. However, the equation was not designed to represent a true demand or supply curve for purebred cattle, only to quantify selected historical price relationships for the purebred beef cattle sector.

It was suggested earlier that during periods of economic boom the prices of purebred livestock rise beyond their justified value for production purposes. There is no accurate data on the number of purebred livestock owned by nonagricultural interests. However, it is possible that one reason for the extremely high prices for purebred livestock during certain historical periods has been the existence of tax laws which have made it attractive for wealthy persons to invest in purebred livestock. By investing in purebred livestock, wealthy individuals have reduced their taxes by converting income into capital gains, which are taxed at a lower rate than some other sources of income such as salaries and wages. Since recent tax law revisions have



Figure 6. Indices of prices of purebred beef cattle sold at public auction and U.S. net farm income, 1950 to 1974 (1960-1962=100)

modified tax shelter provisions, the impact of these revisions needs further study.

Purebred Dairy Cattle: Purebred dairy cattle breeders are engaged in at least two separate economic activities—the production and selling of milk and the selling of breeding stock. A by-product of these activities is the selling of cull cows for meat purposes. The major factors which affect the prices paid for purebred dairy cattle include the price of milk, the price of grade dairy cows, the price of beef, and net farm income. Figures 7, 8, 9, and 10 present longtime price trends for these economic variables. Figure 7 graphs the index of annual prices of purebred dairy cattle and

that of grade dairy cows, indicating a high correlation between prices of purebred dairy cattle and commercial dairy cows. This is logical because purebred dairy owners derive part of their income from the sale of sires for use in artificial and natural insemination of grade dairy cows. When the index of prices paid for purebred dairy cattle was regressed on the index of grade dairy cow prices, the r^2 coefficient was .97 indicating extremely high correlation.

Figure 8 presents the indices of prices received for purebred dairy cattle sold at auction and the U.S. farm price of beef cattle during 1950 to 1974. Prices of both purebred dairy cattle and beef cattle fluctuated widely between 1950 and 1966.

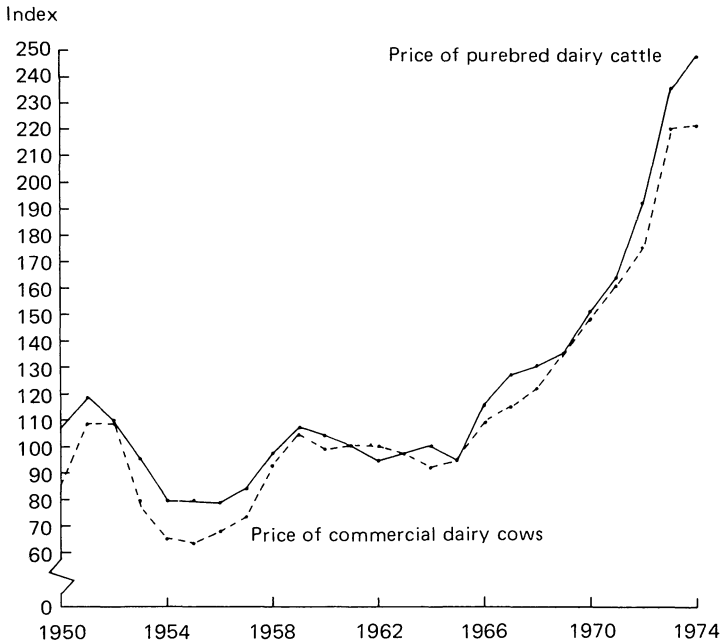


Figure 7. Indices of prices of purebred dairy cattle sold at public auction and U.S. price of commercial cows from 1950 to 1974 (1960-1962=100)

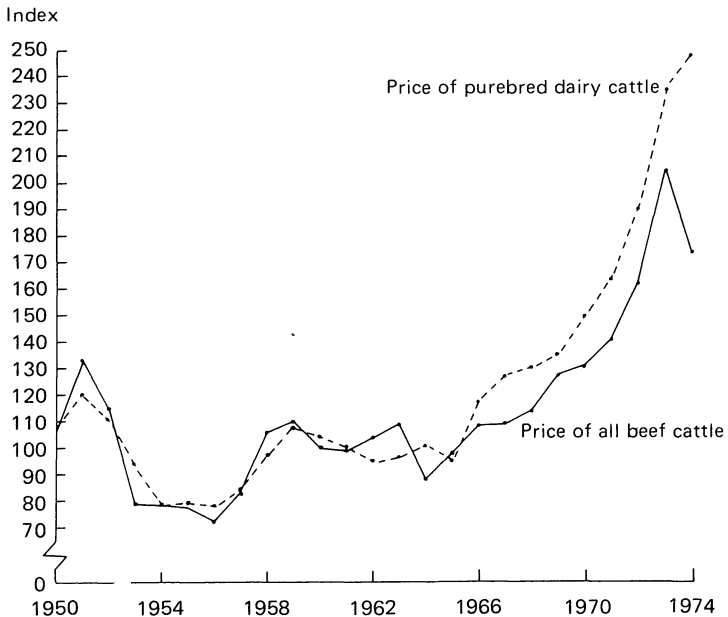


Figure 8. Indices of prices of purebred dairy cattle sold at public auction and U.S. price of all beef cattle, 1950 to 1974 (1960-1962=100)

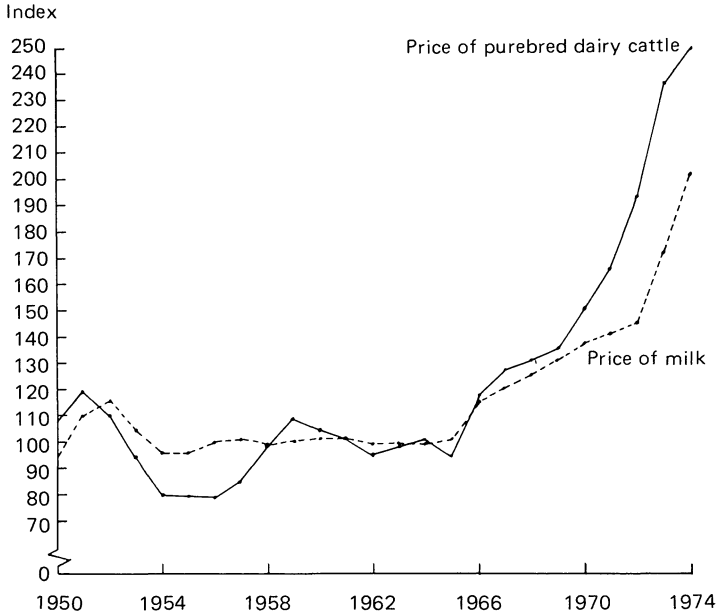


Figure 9. Indices of prices of purebred dairy cattle sold at public auction and U.S. farm price of milk, 1950 to 1974 (1960-1962=100)

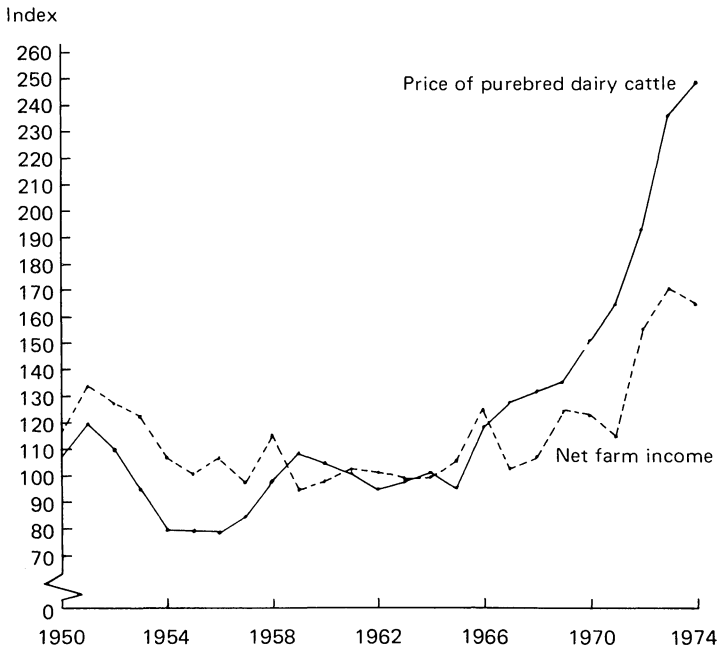


Figure 10. Indices of prices of purebred dairy cattle sold at public auction and U.S. net farm income, 1950 to 1974 (1960-1962=100)

Prices of purebred dairy cattle have increased every year since 1965 while the prices of beef cattle increased annually between 1967 and 1973 but decreased sharply in 1974. Figure 8 indicates a fairly close association between the prices of purebred cattle and beef cattle prior to the 1974 break in beef cattle prices with the r^2 coefficient estimates at 0.90.

Figure 9 illustrates the relationship between the price of milk and prices of purebred dairy cattle. The index of purebred prices was regressed on the index of farm price of milk (lagged 1 year). The r^2 value was approximately .98 which suggests that trends in milk prices have substantial impact on purebred dairy cattle prices because most of the income of purebred dairy producers comes from milk sales.

Finally, net farm income is an important factor influencing purebred

dairy prices. Figure 10 shows the indices of net farm income and prices received for purebred dairy cattle. Figure 10 data indicate that net farm income gained relative to purebred dairy prices between 1950 and 1958. The opposite situation occurred between 1967 and 1974 when the growth in purebred dairy cattle prices was greater than the increase in net income. The data also suggest that there is a lag between purebred prices and net farm income with movements in purebred dairy cattle prices lagging net farm income.

A multiple regression model was estimated using the index of the prices of purebred dairy cattle as the dependent variable and the indices of the price of commercial dairy cows, farm milk price, and net farm income as the independent variables. Explanatory variables were specified with a 1 year lag. The following equation was estimated for 1950 to 1974:

$$X_{1t} = -24.6258 + .6678 X_{2t-1} + .50176 X_{3t-1} + .09612 X_{4t-1}$$

(8.0311) (3.4225) (2.1292)

$$R^2 = .892$$

Where:

X_1 = Index of prices received for purebred dairy cattle at public auction, 1960-62 = 100.

X_2 = Index of U.S. commercial (grade) dairy cow prices (lagged 1 year), 1960-62 = 100.

X_3 = Index of U.S. farm price of milk (lagged 1 year), 1960-62 = 100.

X_4 = Index of U.S. net farm income (lagged 1 year), 1960-62 = 100.

The numbers in parentheses are again the t-ratios. The signs of the regression coefficients were as expected and all were significant at the .05 level. The results of this analysis suggest that over the historical period analyzed, changes in the price of purebred dairy cattle were closely associated with changes in net farm

income and commercial dairy cow and milk prices.

Purebred Swine: The price of purebred swine is influenced by some of the same factors affecting purebred beef and dairy cattle prices. For example, net farm income is a major influence on purebred prices. So, too, purebred swine price is influ-



Figure 11. Indices of prices of purebred swine sold at public auction and price of slaughter hogs at Omaha, 1955 to 1975 (1964-1966=100)

enced by prices paid for commercial swine. Figure 11 shows the historical price relationships of purebred swine (one major breed) and hog slaughter. The graph indicates high correlation (0.94) between slaughter hog prices and purebred prices at public auction. The purebred price data are based on price movements for one purebred swine breed. It is assumed that prices for a single major breed adequately describe price movements for most of the purebred swine breeds.

Figure 12 graphs net income with the price of purebred swine. Again the data show correlations between net income and the price of pure-

bred swine sold at public auction. The upturn in net farm income preceded the upturn in prices of purebred swine in some years by 1 year or more. Income drops preceded lower purebred swine prices.

OTHER FACTORS AFFECTING PRICES OF PUREBRED ANIMALS

There are many other factors in addition to the historical ones given, which might have influenced the trends in purebred animal prices. These include the following:

- Higher quality and improved productivity of purebred livestock.



Figure 12. Indices of prices of purebred swine sold at public auction and U.S. net farm income, 1955 to 1975 (1964-1966=100)

- Increased and improved advertising by purebred breeders.
- Increased importance of the export market.
- Increased inflation in the economy.
- Increased use of high quality sires for the artificial insemination business.
- Tax incentives.

Although the advent of artificial insemination may have contributed to a decreased number of bulls, particularly in the dairy sector, it en-

hanced the demand for outstanding sires which have been sold at extremely high prices.

Data on exports of purebred animals are available only for a few breeds and for only a limited number of years. However, the number of breeding animals (purebred and commercial) exported are known to have increased substantially in the last few years. For example, in 1971 about 19,056 head of beef breeding animals were exported. In 1973 this was 26,904 head for an increase of over 40 percent.³

³*American Hampshire Herdsman*, January 1975.

Advertising is another possible influence on the prices paid for purebred livestock. Purebred breeders spend millions of dollars annually advertising their products through radio, breed journals, newspapers, and billboards. Selling costs, including advertising, represent a significant percentage of the sale price of purebred animals.

During economic booms, outside investors look to purebred livestock as an investment for surplus funds and this contributes to the pattern of purebred livestock prices.

FUTURE PROSPECTS FOR THE PUREBRED LIVESTOCK INDUSTRY

Future prospects for purebred livestock depend on many factors, among them the demand for meat, dairy, and other livestock products. Beef consumption has been steadily increasing over the last two decades, but future rates of increase in per capita consumption will probably be lower than before. Prices and incomes for beef and pork primary producers have shown an erratic pattern and this is expected to continue unless some stabilizing mechanism aids the production and marketing system of livestock. The latter seems an unlikely development though the erratic behavior in prices for commercial cattle and swine also characterizes purebred prices because the two are highly correlated.

It was noted earlier that past tax legislation on capital gains and capital loss deductions have made it attractive for some outside investors to buy purebred livestock. Recent tax modifications make outside in-

vestments in purebred livestock somewhat less attractive. These changes should help reduce the severe bust and boom periods in the purebred business.

Livestock exports have become a very important source of income for U.S. livestock producers both in terms of volume and value of exports. Over the last 15 years exports of breeding animals have increased substantially. For example, annual beef cattle exports increased from an average of 25.5 thousand head from 1960 to 1965 to an average of 56.3 thousand from 1970 to 1975, an increase of more than 121 percent.⁴ The traditional markets for U.S. exports of breeding animals have been Canada, Central America, and Mexico. However, as higher incomes push up the demand for meat and dairy products in many other countries, a strengthening market for U.S. exports of breeding animals is a likely prospect. In 1973 for example, the Holstein-Friesian Service, Inc. exported 10,260 animals to more than 20 foreign countries.⁵ It is expected the market for U.S. breeding animals will expand.

Summary and Conclusions

The purebred livestock sector is an important business enterprise in the U.S. agricultural economy and it has exhibited healthy growth over the past 20 or so years. Purebred animals are major contributors to the high level of productivity attained by the U.S. livestock industry. While there have been many studies on the production phase of purebred animals, research has largely ignored the distribution and marketing phase.

⁴U.S. Foreign Agricultural Trade, Statistical Report, Calendar Year 1975, ERS, USDA May 1976.

⁵*Aberdeen Angus Journal*, August 1974, p. 23.

It was beyond the scope of this report to closely examine the problems involved in marketing purebred livestock. The emphasis was on trying to explain some of the historical price relationships of the purebred sector and to look briefly at future prospects for this important sector of the livestock industry. Specifically the objectives follow:

- To describe briefly the methods by which purebred animals are marketed.
- To examine the factors which influence the price of purebred animals.
- To evaluate historical trends in prices of purebred livestock.
- To briefly appraise future prospects for the purebred industry.

Because of lack of data not all the purebred breeds were included in the study. However, the breeds for which data were available represented a major portion of all purebred animals.

Two primary methods of marketing purebred livestock were identified—private treaty and public auction. The data indicated that private treaty was more popular—accounting for more than 75 percent of marketings annually.

It was indicated that marketing of purebred animals differs in many ways from that of traditional sales outlets for commercial livestock. For example, purebred breeders depend heavily on advertising to market their animals because they must establish their own market since there are no regular and dependable markets for purebred animals.

Prices received for purebred animals depend on many factors and regression and correlation analyses

were used to quantify some of them. Purebred beef cattle prices were mainly influenced by the price of slaughter cattle and net farm income. The major factors which affected purebred dairy cattle prices were price of milk, price of commercial dairy cows, and net farm income. Slaughter hog prices and net farm income explained most of the variation in purebred swine prices. Other important factors determined historical prices of purebred animals, however, lack of relevant data prevented this evaluation. For example, certain tax provisions are said to have made it more attractive for outside investors to invest in purebred cattle, particularly, during periods of economic boom.

Looking ahead, the prospects for purebred livestock will depend largely on future developments in domestic demand for meat and other animal products, general inflationary trends, and foreign demand and trade, all of which are expected to contribute to a stronger demand for purebred livestock.

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APPENDIX

Table 1a. Average price per head of male and female purebred animals sold at auction 1955 to 1974.

Year	Beef cattle		Dairy cattle		Swine	
	Male	Female	Male	Female	Male	Female
Dollars						
1955	449	288	411	373	105	104
1956	396	258	409	385	103	80
1957	453	282	496	404	123	87
1958	626	396	513	482	146	102
1959	646	380	469	501	150	106
1960	522	383	499	495	136	87
1961	550	431	557	474	151	113
1962	577	425	495	445	172	114
1963	595	416	630	440	164	107
1964	529	372	894	452	152	101
1965	542	345	509	462	197	119
1966	633	406	1,192	533	235	153
1967	648	407	1,056	579	230	138
1968	624	361	969	649	233	143
1969	653	394	868	645	265	150
1970	733	414	818	723	2933	173
1971	767	482	1,231	778	231	134
1972	965	642	1,292	905	277	154
1973	1,209	729	1,318	1,142	387	225
1974	1,096	592	1,125	1,200	410	224

Source: Compiled from breed journals and private correspondence with breed associations.

Table 2a. Average price per head of purebred animals 1950 to 1974

Year	Beef cattle	Dairy cattle	Swine
1950	606	428	NA ^a
1951	874	478	NA
1952	706	440	NA
1953	470	376	NA
1954	437	315	NA
1955	404	317	104
1956	375	314	85
1957	384	337	98
1958	488	393	116
1959	504	434	120
1960	439	418	102
1961	476	405	124
1962	511	381	131
1963	522	390	128
1964	479	403	119
1965	438	379	147
1966	491	472	184
1967	522	508	170
1968	472	527	178
1969	506	543	195
1970	544	606	221
1971	583	658	169
1972	705	770	201
1973	919	939	285
1974	917	992	293

^aNot available.

Source: Compiled from breed journals and private correspondence with breed associations.

Table 3a. Prices for commercial livestock, milk, and net farm income, 1950 to 1974

Year	Price of grade dairy cows per head	Farm price of milk per 100 pounds	Price of all beef cattle per 100 pounds	Price of choice steers at Omaha per 100 pounds	Slaughter hog prices at Omaha per 100 pounds	Net farm income in million dollars
1950	172	3.89	21.90	28.90	18.11	13,185
1951	221	4.58	27.10	34.90	20.21	15,158
1952	221	4.85	23.40	32.40	17.71	14,416
1953	155	4.32	16.10	22.80	21.57	13,899
1954	131	3.97	15.90	23.40	14.72	12,201
1955	127	4.01	15.60	22.20	14.48	11,470
1956	135	4.14	14.90	21.00	14.38	12,032
1957	147	4.21	17.20	22.60	17.89	11,018
1958	189	4.13	21.90	26.40	19.63	12,980
1959	210	4.16	22.60	26.90	13.91	10,664
1960	201	4.21	20.40	25.20	15.58	11,079
1961	204	4.22	20.20	23.50	16.57	11,628
1962	202	4.10	21.30	26.40	16.31	11,479
1963	196	4.10	22.20	23.20	15.00	11,223
1964	187	4.15	18.00	22.20	14.78	11,408
1965	193	4.23	19.90	25.10	20.55	11,991
1966	221	4.81	22.20	25.70	22.50	14,139
1967	232	5.01	22.30	25.30	18.59	11,601
1968	246	5.24	23.40	26.80	18.40	12,214
1969	273	5.49	26.20	29.70	22.92	14,157
1970	302	5.71	27.10	29.30	20.92	14,032
1971	325	5.87	29.00	32.40	17.64	13,022
1972	351	6.07	33.50	35.80	25.64	14,521
1973	447	7.13	42.80	43.90	38.86	32,228
1974	449	8.30	35.70	41.90	33.52	27,204

Sources: *Agricultural Statistics*, U.S. Department of Agriculture, Washington, D.C., respective issues.

Table 4a. Number of registered and transferred purebred animals by breed and species, 1975

Breed/Species	Registrations		Transfers	
	Number	Percent of total registrations	Number	Percent of total registrations
Beef				
American Angus Association	306,495	32.00	176,815	34.06
American Brahman Breeders Association	27,527	2.88	22,035	4.25
American Chianina Association	15,326	1.61	4,333	0.83
American Hereford Association	251,766	26.32	101,658	19.60
American International Charolais Association	78,150	8.17	45,180	8.70
American Maine-Anjou Association	17,987	1.89	6,249	1.20
American Murray Grey Association	1,800	0.20	627	0.12
American Polled Hereford Association	167,407	17.51	100,762	19.41
American Red Poll Association	2,420	0.25	1,498	0.30
American Shorthorn Association	29,185	3.06	16,257	3.13
American Scotch Highland Breeders Association	12,865	1.35	10,216	1.96
Devon Cattle Association	1,046	0.12	782	0.15
International Brangus Breeders Association	13,429	1.41	10,305	1.99
Red Angus Association of America	8,512	0.88	6,043	1.16
Santa Gertrudis Breeders International	<u>22,499</u>	<u>2.35</u>	<u>16,260</u>	<u>3.14</u>
TOTAL	956,414	100.00	519,020	100.00
Dairy				
American Guernsey Cattle Club	27,441	7.26	14,475	7.22
American Jersey Cattle Club	40,000	10.58	19,000	9.48
Ayrshire Breeders Association	12,036	3.18	6,669	3.33
American Milking Shorthorn Society	4,548	1.20	2,168	1.08
Brown Swiss Cattle Breeders Association of the U.S.A.	14,750	3.90	9,244	4.61
Dutch Belted Cattle Association of America	191	0.05	87	0.04
Holstein-Friesian Association of America	<u>279,146</u>	<u>73.83</u>	<u>148,825</u>	<u>74.24</u>
TOTAL	378,112	100.00	200,468	100.00
Sheep				
American Cheviot Sheep Society	2,290	2.52	1,370	2.64
American Corriedale Association	6,073	6.69	3,285	6.33

Table 4a (continued).

American Hampshire Sheep Association	17,157	18.89	10,508	20.28
American Southdown Breeders Association	3,558	3.92	2,351	4.54
American Suffolk Sheep Society	15,230	16.77	5,558	10.73
Columbia Sheep Breeders Association of America	6,000	6.61	2,715	5.32
Continental Dorset Club	8,692	9.57	5,889	11.36
National Suffolk Sheep Association	<u>31,818</u>	<u>35.03</u>	<u>20,108</u>	<u>38.80</u>
TOTAL	90,818	100.00	51,820	100.00
Swine				
American Berkshire Association	10,192	2.48	2,910	2.22
American Landrace Association	7,262	1.77	4,031	3.07
American Yorkshire Club	124,357	30.28	34,418	26.21
Chester White Swine Record Association	20,650	5.03	9,540	7.26
Hampshire Swine Registry	131,112	31.92	25,512	19.43
Inbred Livestock Registry Association	1,200	0.29	NA ^a	0.00
National Hereford Hog Record Association	385	0.09	195	0.15
Poland China Record Association	11,911	2.90	4,000	3.05
Tamworth Swine Association	1,956	0.48	923	0.70
United Duroc Swine Registry	78,546	19.13	39,974	30.44
National Spotted Swine Record	<u>23,105</u>	<u>5.63</u>	<u>9,809</u>	<u>7.47</u>
TOTAL	410,676	100.00	131,312	100.00

^aNot available.

Source: National Society of Livestock Record Associations, *Annual Report and Directory, 1975-1976*.

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