

December 1999

PORK INDUSTRY

USDA's Reported Prices Have Not Reflected Actual Sales



**Resources, Community, and
Economic Development Division**

B-283838

December 14, 1999

The Honorable Richard G. Lugar
Chairman, Committee on Agriculture,
Nutrition, and Forestry
United States Senate

The Honorable Rod Grams
United States Senate

The Honorable Charles Hagel
United States Senate

In 1998, hog farmers experienced sharp declines in the prices they received for hogs sold in the open market (spot prices), dropping from about \$0.45 cents per pound in May to below \$0.10 cents per pound by mid-December—a level well below the U.S. Department of Agriculture's (USDA) estimated cost of \$0.35 cents per pound to produce a hog.¹ USDA also reported that the sharp decline in hog prices was not fully reflected in pork prices at the retail level. For this period, USDA reported that the difference between the prices farmers received for their hogs and the prices consumers paid for pork products was wider than it had been in decades.

Concerned about the prices farmers are receiving for their hogs and the lack of comparable declines in the prices consumers pay for pork products at the retail level, as reported by USDA, you asked us to examine the (1) structural changes in the pork industry that have occurred since the 1980s and their effect on production and marketing, (2) reasons for the sudden and rapid decline in prices paid to farmers in late 1998, and (3) extent to which USDA's methods for obtaining and reporting on prices at the farm and retail level for hogs and pork products result in accurate estimates of these prices. Accurate prices are important because they provide farmers with reliable information upon which to base production and marketing decisions.

Results in Brief

Changes in the structure of the U.S. pork industry are occurring in response to increased efficiencies in hog production and processing and to consumer preferences for leaner, more consistent meat products. Technological advances, such as improved genetics, and the growing

¹Excludes noncash expenses such as depreciation.

dominance of very large hog farms have accelerated these trends. For example, since the late 1980s, the number of U.S. farms that raise hogs has declined by over two-thirds, while the average number of hogs raised on each farm has more than tripled. In addition, the majority of hogs are no longer sold in the open market. Currently, about 70 percent of hogs are sold through contractual and other arrangements between packing plants—facilities that slaughter and process hogs into pork products—and farmers, up from about 5 percent in 1980.

Hog prices plummeted in late 1998, principally because supply exceeded slaughter capacity. Several factors accounted for this imbalance. On the supply side, more hogs came to market because U.S. farmers had increased production in response to higher hog prices in earlier years. In addition, Canadian hog exports to the United States rose by about 25,000 hogs per week—1 percent of the weekly U.S. hog slaughter—because, among other things, a labor strike temporarily closed a Canadian plant. With respect to domestic slaughter capacity, four plant closures decreased daily capacity by about 37,000 hogs, or 9 percent. In addition, because packing plants were operating near capacity, their ability to absorb an increase in supply was limited.

USDA's methods for obtaining and reporting hog and retail pork prices have not kept pace with the industry's changes because of funding priorities and a lack of access to data and therefore do not accurately reflect these prices. At the farm level, USDA's reported prices are based on hogs sold through the open market and thus are not representative of all hog sales. At the retail level, USDA reports pork prices that do not reflect actual consumer purchases. Rather, the reported prices reflect an average of selected pork cuts offered for sale, without regard to the actual amount purchased. For December 1998, when reported cash prices for hogs fell to their lowest level in decades, USDA's reported retail price of \$2.38 per pound was 14 cents per pound higher than consumer purchases indicated. Consequently, the differences in the prices received by farmers for their hogs and the prices paid by consumers for pork products, while considerable, was not as wide as USDA had reported. Legislation enacted in October 1999 requires USDA to obtain and report prices paid by packers for all hogs purchased, priced, or slaughtered each business day. USDA officials told us that these prices would include prices for all hogs sold through the open market and most hogs sold through other marketing arrangements. The legislation also requires USDA to report retail pork prices on the basis of actual consumer purchases.

Background

The United States is one of the world's leading pork-producing countries and the second largest exporter of pork. In 1998, farmers sold 101 million hogs, for a total of about \$9 billion, producing about 19 billion pounds of pork. At the retail level, the value of this pork exceeded \$34 billion.

The pork production and marketing system begins at the farm, where hogs are farrowed (birthed), nursed (fed to about 50 pounds), and finished (fed to about 250 pounds, or market weight). Hogs are then sold to packers, which slaughter and process hogs into pork products that are sold to retailers, including grocery stores, restaurants, and other outlets.

Two USDA agencies collect and report hog and pork prices. The Agricultural Marketing Service (AMS) collects and reports daily and weekly live hog and wholesale pork prices in order to provide current price and sales information to farmers and packers and to otherwise assist in the orderly marketing and distribution of hogs and pork products. Farmers and packers use this information as indicators of market conditions. The Economic Research Service obtains retail prices for pork from the Bureau of Labor Statistics and uses these data and AMS data to calculate the differences between prices received by farmers, wholesale prices, and prices paid by consumers. The difference between the prices received by farmers for their hogs and the prices paid by consumers for pork products is known as the farm-to-retail price spread. Analysts and others use this information to show, among other things, the farmer's share of the consumer's food dollar.

Rapid Changes in Pork Industry Are Driven by Consumer Preferences and Other Factors

Changes in the structure of the U.S. pork industry are occurring in response to increased efficiencies in hog production and processing and consumer preferences for leaner, more consistent meat products. Technological advances, such as improved genetics, and the growing dominance of very large hog farms since the late 1980s have accelerated these trends. Currently, more than 85 percent of all hogs are produced in facilities specialized for each stage of production. In addition, about 70 percent of hogs are now sold through contractual and other arrangements in which packing plants and farmers coordinate production methods and delivery schedules, up from about 5 percent in 1980.

Hog Industry Is Moving Towards Fewer but Larger Operations

Over the past decade, the number of U.S. hog farms declined while the average number of hogs per farm increased significantly. As shown in table 1, the number of hog farms declined from about 323,000 in 1988 to

114,000 in 1998 while the average number of hogs on these farms increased from 172 to 544, or 216 percent. Industry economists estimate that by the start of 2000, fewer than 100,000 hog farms will be in business.

Table 1: Number of Farms With Hogs, and Total Hogs, 1988 Through 1998

Farms and hogs in thousands

Year	Hog farms	Total hogs	Average number of hogs per farm
1988	322.6	55,466	172
1991	247.1	57,649	233
1994	196.0	59,738	305
1997	122.2	61,158	500
1998	114.4	62,206	544

Source: GAO's analysis of USDA's data.

The decline in the number of hog farms has occurred principally among smaller farmers; of the farms that have left the industry, nearly all had fewer than 1,000 hogs. As shown in table 2, operations marketing fewer than 1,000 hogs annually accounted for a declining share of the total hog slaughter, from 32 percent in 1988 to 5 percent in 1997, the most recent year for which data are available. Conversely, farms that market more than 50,000 hogs annually increased their share from 7 percent of all hogs marketed in 1988 to about 37 percent in 1997.

Table 2: Share of Hogs Marketed by Size of Operation, 1988 Through 1997

Size of operation by hogs marketed annually	Percent share of hog market			
	1988	1991	1994	1997
1 to 99	32	23	17	5
1,000 to 1,999	19	20	17	12
2,000 to 2,999	11	13	12	10
3,000 to 4,999	10	12	12	10
5,000 to 9,999	9	10	12	10
10,000 to 49,999	12	13	13	16
50,000 or more	7	9	17	37

Source: Production and Marketing Characteristics of U.S. Hog Producers, 1997-98, Iowa State University, Department of Economics Staff Paper 311, December 1998.

Just as the production of hogs has become concentrated, so too has the processing of hogs into pork products (known as the meat-packing

process). In 1988, the 4 largest packing companies slaughtered 34 percent of all U.S. hogs; the 20 largest companies slaughtered about 75 percent of the hogs. In comparison, in 1997, the four largest companies slaughtered 54 percent of all hogs; only eight companies slaughtered about 75 percent of all hogs. In 1998, the seven largest companies represented 75 percent of total daily slaughter capacity, as shown in table 3.

Table 3: The 10 Largest Hog-Packing Companies, 1998

Rank	Packing company	Daily slaughter capacity	Percent of slaughter capacity	Cumulative percent
1	Smithfield Foods, Inc.	82,300	19.7	19.7
2	IBP Inc.	72,600	17.3	37.0
3	ConAgra, Inc. (Swift & Co.)	39,400	9.4	46.4
4	Cargill, Inc. (Excel Corp.)	37,800	9.0	55.4
5	Hormel Foods Corp.	34,700	8.3	63.7
6	Farmland Industries, Inc.	33,800	8.1	71.8
7	Seaboard Corp.	15,000	3.6	75.4
8	Thorn Apple Valley ^a	14,000	3.3	78.7
9	Indiana Packers	13,000	3.1	81.8
10	Lundy's	8,000	1.9	83.7
	Other companies	67,870	16.2	100.0
Total		418,470	100.0	

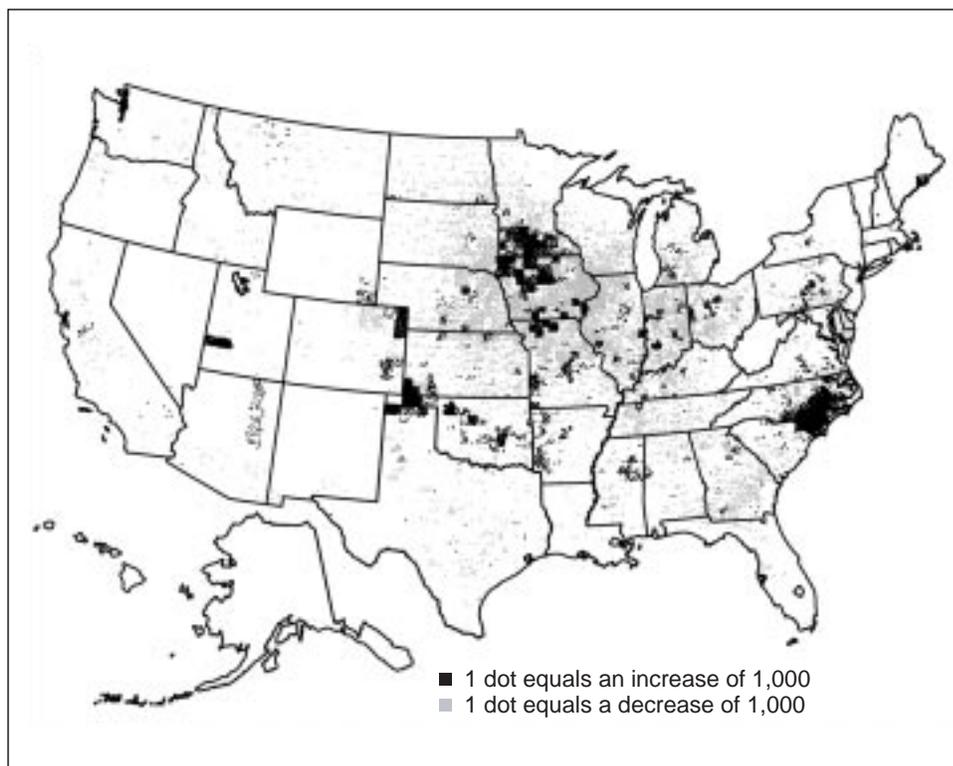
Note: Totals may not add because of rounding.

^aThorn Apple Valley closed its slaughter operations in 1998.

Source: GAO's analysis of data from the National Pork Producers Council.

Along with consolidation into fewer and larger farms, hog production is migrating into new areas. According to the Census of Agriculture, from 1992 through 1997, the number of hogs nationwide rose about 6 percent. Much of this growth occurred in areas where the hog industry was almost nonexistent before, including Colorado, Mississippi, Oklahoma, Utah, and Wyoming. However, a large portion of this growth also occurred in a traditional hog-producing state—North Carolina. Most other traditional hog-producing states—including Illinois, Indiana, Missouri, and Nebraska—experienced net declines in hog inventories. Figure 1 shows the change in hog inventories in each state from 1992 through 1997.

Figure 1: Change in Hog Inventory, 1992 to 1997



Source: USDA's 1997 Census of Agriculture.

Restrictions on the pork industry's activities, such as those that prohibit packers from producing or owning hogs, are guiding the industry into new production regions. Several midwestern states (including Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, and Wisconsin) have enacted some form of corporate farming law. The provisions of these laws vary widely, but they generally prohibit large corporations from engaging in farming activities, including hog production.

In addition, environmental concerns surrounding large hog operations are a catalyst for the movement of hog operations from populated areas in midwestern states to sparsely populated areas in other states. These concerns have led to restrictions on hog operations' management of animal wastes to prevent the contamination of surface and groundwater as well as to controls on the strong odors that come from the facilities.

Hog Production Is Increasingly Specialized

Traditionally, hog production has occurred on small farms that manage the entire hog production cycle. Increasingly, however, hogs are produced in specialized operations in which each stage of production is carried out in a separate facility and tight controls are maintained over breeding and feeding programs. Currently, according to industry analysts, more than 85 percent of all hogs are produced in specialized operations. In most of these facilities, each group of hogs is moved together to the next production phase, and the buildings are thoroughly cleaned and disinfected between groups. This rotation system is designed to minimize or eliminate the intermingling of hogs from different batches, thereby guarding against the spread of disease. In addition, large farmers usually have various genetic lines developed specifically for their breeding herds in order to maximize production efficiency, quality characteristics, and their ability to compete in various marketing niches.

Vertical Coordination Arrangements Are Increasing to Meet Consumer Demand, Control Costs, and Reduce Risks

The sale of live hogs on the open market is rapidly being replaced by multiyear contracts between farmers and packers as well as by vertically integrated operations in which a packer owns the hogs being produced. Farmers and packers are increasing their use of such vertical coordination methods as a means of managing their market risks. For example, through vertical coordination, hog farmers can lower their risks of investing in large, specialized operations by ensuring a buyer for their hogs. Also, in some contractual arrangements, price risks are shared by both the farmer and packer.

Packers see advantages to these arrangements as well. To maximize the operating efficiencies of modern plants, packers in recent years have increased their control over the quantity and quality of hogs coming into their plants. High capital costs and competitive pressures have forced packers to reduce idle capacity. By contracting or vertically integrating, packers ensure a large, stable flow of hogs into their plants, thereby maximizing the utilization of their facilities and reducing risks and costs. In addition, packers can reduce their costs by improving the quality of hogs slaughtered. Quality affects processing time and labor costs as well as the quantity of high-value fresh meat cuts per hog. For example, each hog with excessive fat requires more trimming and produces less lean meat. Conversely, a lean hog takes less time to process and produces a larger quantity of lean pork. Through marketing contracts, packers specify the quality characteristics it wants in the hogs it purchases from producers. Packers are sometimes able to control the choice of genetic stock, feeding program, and management decisions on the production of

their contracted hogs. This control ensures a consistent supply of lean, high-quality hogs that meet their stringent quality specifications, which are dictated by consumers.

The use of marketing contracts and vertical integration has increased significantly in recent years. As shown in table 4, in 1998, an estimated 95 percent of hogs from operations with at least 500,000 hogs were produced under marketing contracts and vertical integration compared with 34 percent from operations producing 1,000 to 1,999 hogs. Overall, in 1998, 64 percent of all hogs were marketed under such arrangements, up from about 5 percent in 1980. Industry economists estimate that in 1999 about 70 percent of all hogs will be produced under marketing contracts and through vertical integration and that in 2000 such coordination arrangements will represent fully three-fourths of all hogs slaughtered.² In addition, large hog operations are much more likely to be involved with coordination arrangements than are small operations.

Table 4: Percentage of Hogs Produced Under Marketing Contracts and Vertical Integration, by Size of Operation, 1998

Size of operation	Percentage of hogs under marketing contracts and vertical integration
1,000-1,999	34
2,000-2,999	38
3,000-4,999	48
5,000-9,999	59
10,000-49,999	62
50,000-499,999	85 ^a
500,000 or more	95 ^a
All hogs	64

^aEstimated.

Source: Production and Marketing Characteristics of U.S. Hog Producers, 1997-98, Iowa State University Department of Economics Staff Paper 311, December 1998.

Additionally, as a means of expanding their production capability and reducing risk, large farmers often contract with other farmers to grow (finish) hogs to market weight in specialized facilities. The contractor typically owns and provides most of the inputs—including the hogs, feed, and veterinary care—to the farmers and pays them a preestablished fee for their services and the use of their facilities.

²This estimate includes the acquisition of Murphy Farms by Smithfield, Inc., the nation's largest hog farmer.

Appendix I provides additional information on production efficiencies achieved in the hog industry since 1960.

Increased Hog Supply and Limited Slaughter Capacity Were Key Factors Affecting Farmers' Prices in 1998

Hog prices plummeted in late 1998, principally because supplies exceeded slaughter capacity. Several factors accounted for this imbalance. U.S. farmers decided to increase production in response to higher hog prices in earlier years, and imports from Canada increased slightly because, among other things, a labor strike temporarily closed a Canadian plant. In addition, four U.S. plant closures decreased slaughter capacity by about 37,000 hogs per day—9 percent—and the remaining plants could not readily absorb the increased supply.

Hog Supplies Set a Record in 1998

The pork industry experienced record production in 1998. As shown in table 5, the number of hogs slaughtered increased from about 92 million in 1997 to 101 million in 1998, or 9.8 percent, resulting in an increase in the total number of pounds of pork produced from 17 billion to almost 19 billion, or 10.1 percent (the largest year-to-year increase since 1979). Similarly, this record production placed pressure on the plants' capacity to refrigerate the slaughtered pork. As a result, the amount of pork under refrigeration (in cold storage) increased from 378 million pounds at the end of 1997 to 443 million pounds at the end of 1998, or 17.3 percent.

Table 5: Pork Production, 1991 Through 1999

Pounds in millions			
Year	Number of hogs slaughtered	Pounds of pork produced	Year-end pounds of pork in cold storage
1991	88.2	15,948	296.9
1992	94.9	17,184	326.1
1993	93.1	17,029	333.8
1994	95.7	17,659	385.1
1995	96.3	17,810	382.2
1996	92.4	17,084	349.1
1997	92.0	17,245	377.7
1998	101.0	18,981	443.0
1999 ^a	100.8	18,900	480.0

^aEstimated.

Source: USDA.

While improved production technology and genetics contributed to increased production, the higher production in late 1998 also resulted from cyclical and seasonal factors. According to industry analysts, the hog price cycle is about 4 years—2 years of rising prices followed by 2 years of falling prices.³ When prices are high, more sows are bred and more hogs are produced. This causes hog production to increase and prices to fall, creating a price cycle. Seasonal variation is caused by changes in production efficiency resulting from variations in the weather—more hogs are born in the spring and summer than in the fall and winter, and thus more hogs go to market in the fall and winter. For example, in 1996 and 1997, hog prices were in the range of \$0.45 to \$0.60 per pound, and many farmers constructed large facilities and expanded their breeding herds in expectation of future profitability. This expansion helped create a surge of hogs coming to market starting in late 1997, and hog prices in the open market fell to less than \$0.10 per pound in December 1998.

Imports of live hogs from Canada also contributed to low hog prices in late 1998. Most of the hogs imported into the United States originate in Canada. In 1998, Canadian imports reached a record 4.1 million hogs, after steadily rising since 1992. Most of the increase occurred in the fourth quarter of 1998, when weekly hog imports from Canada rose by about 25,000—1 percent of the U.S. weekly slaughter—exacerbating the effect on prices of an already large supply of domestic hogs. According to USDA economists, the large volume of Canadian imports occurred because of a strong U.S. dollar relative to the Canadian dollar, similar hog supply and price problems in Canada, and a labor dispute at a large Canadian packing plant that temporarily closed this plant.

Slaughter Capacity Is Limited

Although hog production increased in 1998, plant capacity for processing the animals into consumer-ready pork products decreased, creating a bottleneck in the farm-to-retail chain. Following the closure of four packing plants over the previous 18 months, slaughter capacity decreased by 9 percent, or 37,000 hogs per day. The plants—located in Georgia, Iowa, Michigan, and South Dakota—closed prior to the fall of 1998 because they were older and not economically viable. Furthermore, unlike a decade ago, when the majority of pork-packing plants in the United States operated single shifts, plants today largely operate double shifts. Single-shift plants could increase weekly slaughter capacity 25 percent or more by increasing hours or by operating on Saturday. Today, double-shift facilities are not as

³See app. II for information on the responsiveness of hog prices to changes in production, and the speed at which these prices are reflected at the retail level.

able to readily increase slaughter capacity. Moreover, new packing plants cannot be added quickly because they require about 3 years and \$100 million or more to construct and face various regulatory hurdles.

USDA's Methods for Reporting Farm and Retail Prices Do Not Reflect Actual Farm and Retail Sales

USDA's methods for obtaining and reporting hog and retail pork prices have not kept pace with the industry's changes because of funding priorities and a lack of access to data and therefore do not accurately reflect these prices. At the farm level, USDA's reported prices are based on hogs sold through the open market (generally referred to as the spot market) and thus are not representative of all hog sales. At the retail level, USDA reports pork prices that do not reflect actual purchases by consumers. Thus, the reported difference between the prices farmers received for their hogs and the prices consumers paid for pork products, known as the farm-to-retail price spread, is not always accurate.

Live Hog Prices Reported by USDA Are Not Representative of All Sales

The changing structure of the hog industry may contribute to a gap between the publicized prices paid for hogs and the average price received by farmers. Most hogs—about 70 percent—are procured by packing plants through coordinated arrangements, rather than through the spot market, and the price is not available to USDA because of the proprietary nature of the information. However, USDA reports farm-level prices for live hogs on the basis of hogs sold through the spot market. In January 1999, USDA revised its methods for reporting pork price spreads; it now uses an average hog price for 51- to 52-percent lean hogs—which are of higher quality—to better reflect the current market. However, these prices are still based on hogs sold in the spot market (see app. III).

During periods of plentiful hog supplies, packers frequently pay a lower price for hogs procured through the spot market than for hogs procured through contracts. Spot market hogs are generally of lower quality, not as lean as hogs sold through contracts, and more variable in weight. Through contracts, packers can guarantee a stable flow of lean hogs at consistent weights for their plant and hence are willing to pay premiums for this certainty. Consequently, reported prices for live hogs based on the spot market do not accurately reflect the average price of all hog sales. To help resolve this situation, the agriculture appropriations act for fiscal year 2000⁴ requires packers to report to USDA and USDA to publish the prices paid for all hogs purchased, priced, or slaughtered each business day. USDA

⁴The Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2000 (P.L. 106-78, Oct. 22, 1999) amended the Agricultural Marketing Act of 1946 to include this requirement.

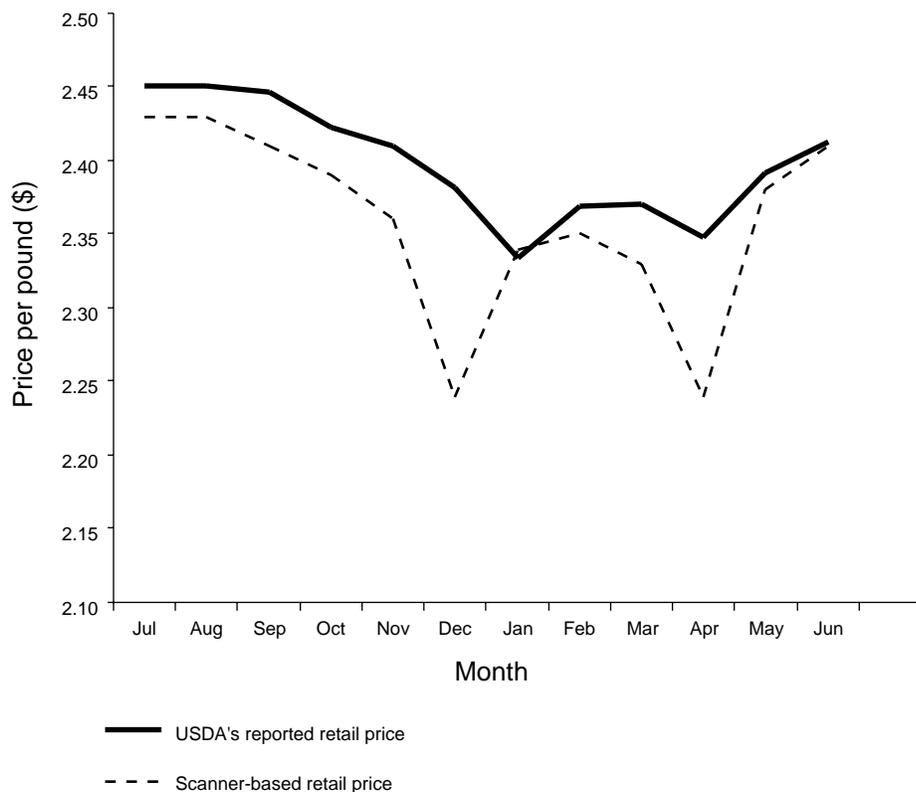
officials told us that these prices would include prices for all hogs sold through the open market as well as most hogs sold through other marketing arrangements. USDA officials told us that the Department plans to implement this requirement by July 2000. However, according to the officials, these plans are contingent upon congressional funding to carry out this requirement.

**Retail Pork Prices
Reported by USDA Do Not
Reflect Consumers'
Purchases**

USDA's reported retail prices do not reflect actual purchases by consumers. Rather, the reported prices reflect an average of selected pork cuts offered for sale, without regard to the amount purchased. USDA first obtains average pork prices from the Bureau of Labor Statistics, which collects them to calculate the Consumer Price Index. The Bureau collects regular and sale prices from grocery stores and averages these prices, regardless of the amount purchased at each price. Then, USDA weights these prices by each cut's proportion of a hog carcass. As a result, USDA does not report retail prices on the basis of actual consumer purchases of pork products.

Data from grocery store scanners, which we obtained for our analysis, reflect actual consumer purchases that occur at both regular and sale prices. As shown in figure 2, from July 1998 through June 1999, USDA's reported retail prices for pork generally overstated retail prices when compared with grocery store sales data, with the greatest difference occurring in December 1998 and April 1999.

Figure 2: USDA-Reported Retail Prices for Pork Compared With Scanner-Based Retail Prices, July 1998 Through June 1999



Source: USDA and Information Resources, Inc.

As the figure shows, USDA's reported retail prices for pork were \$0.14 and \$0.11 per pound higher than the scanner-based retail prices in December 1998 and April 1999, respectively, when grocers were featuring pork.⁵ Retail grocery representatives told us that many grocers featured pork near the end of 1998 in response to the large supply of pork and the lowest hog prices in decades. According to weekly scanner data, retail prices declined from \$2.39 in mid-November to \$2.14 in late December. Appendix IV lists monthly USDA-reported retail prices for pork and weekly and monthly scanner-based retail pork prices.

In addition to not reflecting the actual volume of sales, USDA's methodology does not account for changes in the mix of products purchased by

⁵The price relationship shown in fig. 2 could be different for other time periods.

consumers throughout the year, such as more hams at Easter and more pork chops and ribs for grilling in the summer. Instead, as discussed, USDA calculates an overall average pork price by weighting a fixed mix of prices for individual pork cuts obtained from the Bureau of Labor Statistics by each cut's average percentage of a hog carcass. USDA officials told us that retail pork prices based on consumer purchases would provide more complete retail market information and could be obtained at an annual cost of about \$500,000, depending on the level of detail desired. The agriculture appropriations act for fiscal year 2000 requires that USDA report prices for pork products that are based on actual retail sales. USDA officials told us that the Department is studying how to carry out this requirement but does not currently have a specific date for implementation.

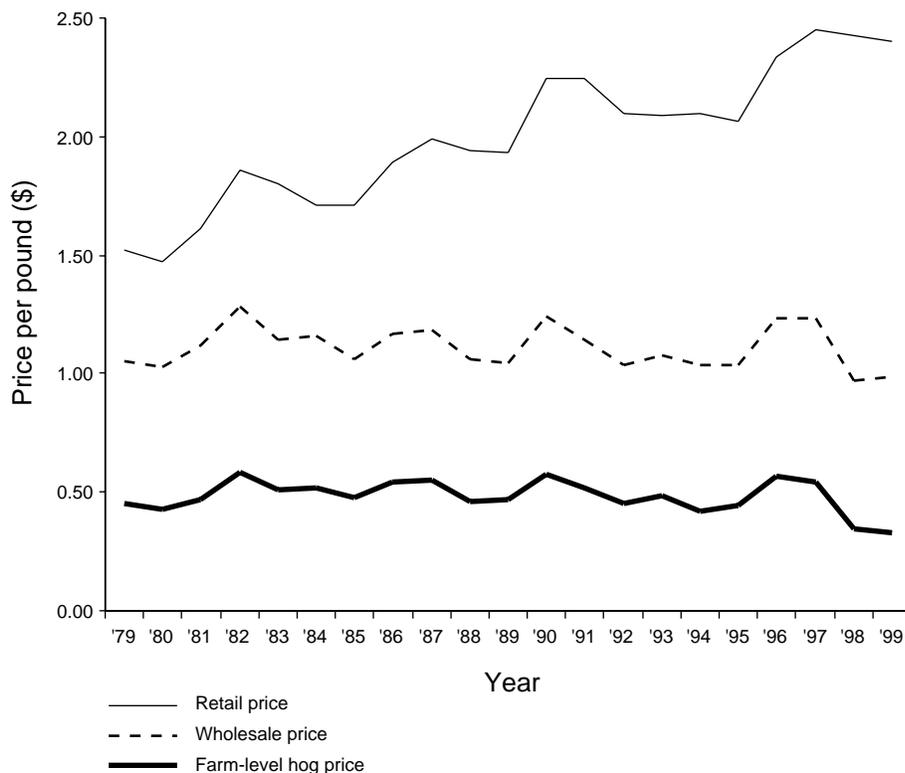
Farm-To-Retail Price Spreads Are Inaccurate at Specific Points in Time but Reflect Trends Over Time

The purpose of USDA's price spreads is to indicate differences in values for a consistent quantity and quality of product measured at the farm, wholesale, and retail levels over time. Although USDA's farm prices, retail prices, and the spread between them may be inaccurate at specific points in time, its price spreads do reflect changes in trends over time.

Over the past two decades, the farm-to-retail price spread for pork has widened. As shown in figure 3, from 1979 to 1999, average retail prices rose while wholesale prices and farm-level hog prices declined slightly, resulting in the widening of the farm-to-retail price spread.⁶ However, when prices are adjusted for inflation, the farm-to-wholesale portion of the spread actually decreases while the wholesale-to-retail spread remains essentially unchanged. According to USDA and industry analysts, the wholesale-to-retail spread may be wider because more processing is being done; therefore, retail prices reflect an increasing service component in pork products. A number of additional processes may increase the value of the product to the consumer, such as packaging, certification, marination, cooking, trimming, flavoring, or slicing; in addition, advertising costs are factored into the wholesale-to-retail price spread.

⁶For purposes of our analysis, we elected to use farm-level hog prices instead of USDA's net farm value of hogs. See app. III for a detailed discussion of USDA's methodology for obtaining, verifying, and reporting farm, wholesale, and retail prices and calculating farm-to-retail price spreads.

Figure 3: Annual Pork Prices as Reported by USDA, 1979 Through 1999
(Nominal dollars)



Note: 1999 prices are for January through September.

Source: USDA.

Conclusion

USDA’s methodology for obtaining and reporting price information has not kept pace with changes in the industry because of funding priorities and a lack of access to data. Accurate prices are important because they provide farmers with reliable information upon which to base production and marketing decisions. At the farm level, USDA’s reported prices are not representative of all hog prices, while at the retail level, the prices USDA uses do not reflect actual consumer purchases. Thus, the USDA-reported price spread is not always accurate and was not as wide as USDA had reported in late 1998. Recent legislation requires USDA to obtain and report prices paid by packers for all hogs purchased, priced, or slaughtered each business day. USDA officials told us that these prices would include prices for all hogs sold through the open market and most hogs sold through other marketing arrangements. The legislation also requires USDA to report

retail pork prices based on actual consumer purchases. When fully implemented, this information, coupled with existing information reported by USDA, will provide a more complete reflection of market conditions at the farm and retail levels.

Agency Comments

We provided USDA with a draft of this report for review and comment. USDA's primary concern was that the report did not recognize the change the Department made in January 1999 to improve its methods for reporting the spread between farm and retail pork prices. In addition, USDA was concerned that the report suggested USDA should replace its method for reporting retail prices from one that adjusts the prices to a consistent mix of pork products to one that is based on actual consumer purchases. We revised our report to acknowledge the changes that USDA has made to its reporting on spreads in pork prices and to clarify our conclusion that reporting retail prices based on actual consumer purchases will, if effectively implemented, represent a valuable addition to USDA's array of pork price reports. USDA also made a number of technical comments and suggestions, which we incorporated into our report as appropriate. USDA's comments and our responses are presented in detail in appendix V.

Scope and Methodology

To examine how structural changes in the pork industry have affected production and marketing and to identify the reasons for the sudden and rapid decline in prices paid to farmers in late 1998, we reviewed studies by USDA and by industry and academic experts. We examined hog industry statistics, including hog supply, slaughter capacity, and consumer demand. We interviewed agency officials at USDA's headquarters in Washington, D.C., and key field offices in Des Moines, Iowa. Officials contacted were from the Economic Research Service, the Agricultural Marketing Service, and the Grain Inspection, Packers, and Stockyards Administration. We also interviewed industry representatives, including the National Pork Producers Council, the American Meat Institute, the Food Marketing Institute, as well as major packers and retailers. In addition, we met with pork industry experts at Iowa State University, the University of Missouri, Kansas State University, and North Carolina State University.

To determine the extent to which USDA's methods for obtaining, reporting, and verifying pork prices result in accurate price estimates, we reviewed USDA's processes and procedures for collecting and disseminating data in its reports for live hogs and pork cuts. Our analysis included discussions with USDA as well as officials at the Bureau of Labor Statistics and

economists at Iowa State University, the University of Missouri, Kansas State University, and North Carolina State University.

Specifically, to compare USDA's reported retail prices, for July 1998 through June 1999, we examined scanner-based data on retail pork prices purchased from a data collection company. According to the data collection company, these scanner data represent at least 40 percent of total U.S. grocery sales of pork (including fresh and branded loins, bacon, hams, and sausage), at over 7,000 stores in approximately 100 metropolitan areas. As part of its data collection process, the company reported that it conducts several quality control tests on scanner sales data received from retailers, including item count, item rank, and department total tests, as well as comparisons against shipment documents of goods purchased by grocery stores.

We conducted our review from April 1999 through November 1999 in accordance with generally accepted government auditing standards.

We are sending copies of this report to Senator Tom Harkin, Ranking Minority Member, Senate Committee on Agriculture, Nutrition, and Forestry; Representative Larry Combest, Chairman, and Representative Charles W. Stenholm, Ranking Minority Member, House Committee on Agriculture; and to other appropriate congressional committees. We are also sending copies of this report to the Honorable Dan Glickman, Secretary of Agriculture; and the Honorable Jacob Lew, Director of the Office of Management and Budget; and other interested parties. We will also make copies of this report available to others upon request.

If you or your staff have any questions about this report, please contact me at (202) 512-5138. Key contributors to this report were Robert C. Summers, Thomas M. Cook, Ruth Anne Decker, and Mary C. Kenney.

A handwritten signature in black ink, appearing to read "Lawrence J. Dyckman". The signature is written in a cursive style with a large initial "L".

Lawrence J. Dyckman
Director, Food and
Agriculture Issues

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Abbreviations

AMS	Agricultural Marketing Service
ERS	Economic Research Service
USDA	U.S. Department of Agriculture

Productivity Gains in the Hog Industry

In the past several decades, the hog industry has experienced significant gains in productivity. As shown in table I.1, the number of pigs per litter, farrowings per sow, pigs born per sow per year, and the amount of pork produced per sow have increased since 1960.

Table I.1: Production Efficiency Gains, 1960 Through 1998

Year	Pigs per litter	Farrowings per sow	Pigs per sow per year	Pork production per sow (pounds)
1960	6.99	1.68	11.71	1,442
1970	7.27	1.73	12.56	1,636
1980	7.22	1.64	11.83	1,912
1990	7.87	1.86	14.62	2,480
1998	8.71	1.95	16.94	3,062

Source: University of Missouri's analysis of the U.S. Department of Agriculture's data.

Large and more specialized production operations are particularly contributing to these dramatic improvements. A number of factors have contributed to the shift to fewer but larger hog operations, including lower costs of production. According to economists at Iowa State University and Purdue University, costs of production vary widely among farmers. Generally, however, large hog operations have costs of production that are lower than those of smaller hog operations. Large specialized farms have total costs of production that are about 10 percent lower than those of smaller farrow-to-finish farms. Some analysts believe that the range in production costs between the most efficient one-third of all farmers and the least efficient one-third is as much as \$0.10 to \$0.12 per pound.

Pork production involves many inputs—feed grains such as corn, high-protein feed ingredients, vitamins, minerals, water, medications, and labor—to convert live hogs into pork and pork products. Feed is the major production input for raising hogs, usually accounting for over 65 percent of all production expenses. In the early 1990s, hog costs of production for farrow-to-finish operations averaged \$0.40 to \$0.45 per pound of live animal. In 1996 and 1997, when feed costs rose significantly, hog costs of production increased to about \$0.50 per pound. In the last year, feed costs have decreased, reducing costs of production to about \$0.35 per pound.

Responsiveness of Hog Prices to Changes in Production and the Speed at Which These Price Changes Are Reflected in Retail Prices

During the 1997 through 1998 expansion phase of the hog production cycle, prices declined to a greater extent than in earlier expansion phases. As shown in table II.1, during 1978 through 1979, the largest expansion phase in the last two decades, production increased about 16 percent while prices declined 24 percent. In contrast, during the expansion phase of 1997 through 1998, production increased about 10 percent, but prices declined 40 percent.

Table II.1: Effect of Changes in Hog Production on Hog Prices During Expansion and Liquidation Phases, 1978 Through 1998

Year	Percent change in hog production	Percent change in deflated hog prices	Ratio of change in hog prices to change in production
Expansion phase			
1978-79	+15.6	-23.7	1.52
1982-83	+ 7.1	-16.5	2.32
1987-88	+9.2	-19.9	2.16
1991-92	+7.7	-16.4	2.13
1993-94	+3.7	-15.4	4.16
1997-98	+10.1	-39.7	3.93
Liquidation phase			
1974-75	-16.7	+28.8	1.72
1981-82	-10.2	+18.4	1.80
1985-86	-4.9	+11.9	2.43
1989-90	-2.9	+18.1	6.24
1992-93	-1.0	+4.4	4.40
1995-96	-4.1	+24.8	6.05

Notes: An expansion phase occurs when production increases, and a liquidation phase occurs when production decreases. Also, other factors in addition to changes in production affect changes in hog prices, such as decreased slaughter capacity in 1998.

Source: Glen Grimes, University of Missouri.

While hog prices react immediately to changes in hog production, retail pork prices react slowly to changes in hog prices. According to U.S. Department of Agriculture (USDA) economists, the delay in changes between farm and retail prices is often attributed to the time it takes to move products from farms to retail outlets, so that the prices of products currently in stores reflect earlier farm prices. In addition, retailers set prices for advertising purposes a week or more ahead, thus limiting rapid adjustment to sudden price changes. As a result, price spreads frequently narrow when farm prices increase and widen when farm prices decrease.

**Appendix II
Responsiveness of Hog Prices to Changes in
Production and the Speed at Which These
Price Changes Are Reflected in Retail Prices**

Retail prices more quickly reflect farm price increases than decreases. In addition, changes in farm prices have little effect on retail prices in the month they occur. USDA research indicates that, on average, it takes about 3 months for farm price increases to be fully passed on to consumers, while it takes over a year for the retail price to fully adjust to farm price decreases. Furthermore, retailers recognize that consumers react negatively to frequent price changes.

USDA's Methodology for Obtaining, Verifying, and Reporting Live Hog and Pork Product Prices and for Calculating Farm-To-Retail Spreads

This appendix provides a detailed discussion of USDA's methods for collecting and reporting pork prices at the farm, wholesale, and retail segments of the marketing chain as well as its methods for calculating and reporting farm-to-retail pork price spreads. Two USDA agencies are involved in this process.

Live Hog Prices

USDA's Agricultural Marketing Service (AMS) collects and reports current hog price and sales information—for hogs sold in the spot market—to assist in the orderly marketing and distribution of hogs and pork products. Reports include information on prices, volume, quality, condition, and other market data for specific markets and marketing areas. AMS market reporters collect and disseminate reports intended to provide buyers and sellers with the information necessary for making intelligent, informed marketing decisions, thus placing everyone in the marketing system on a more equal bargaining basis. These reporters cover direct sales and collect information by telephone—talking with buyers, farmers, and packers.

Most hogs are valued after slaughter according to the weight and leanness of the carcass. Packers determine leanness by, for example, measuring the amount of backfat present and identifying the muscling characteristics of the carcass. Each packer has developed a matrix of different carcass weight and leanness combinations. This matrix indicates the premiums and discounts the packer is offering from its base price. Packers provide their base price and their matrix to AMS. While packers' base prices change often—sometimes a couple of times a day, the premiums and discounts offered from this base price may change only 1 or 2 times per year. Using these matrixes and base prices, AMS reports daily, weighted-average base prices as well as ranges of prices offered by packers for different carcass weight and leanness combinations.

USDA's Economic Research Service (ERS) recently revised its basis for determining the farm-level hog price series of the pork price spread, switching from a live hog basis to a carcass basis. In January 1999, ERS began obtaining carcass prices from the "National Base Lean Hog Carcass Slaughter Cost Report," which is published by AMS for use in developing its pork price spreads. This daily report provides information on packers' costs, on a carcass basis, for the previous day's slaughter. This report provides cost data from about 25 percent of packers that voluntarily provide their previous day's slaughter cost information. The cost information provided by these packers includes the prices of hogs purchased through negotiated sales as well as through formula contracts.

The cost data provided does not include packer-owned hogs or hogs purchased through fixed contracts (such as window and ledger contracts). AMS reports the cost data for various carcass leanness values. To develop the farm-level hog price series for its pork price spreads, ERS converts the 51- to 52-percent lean carcass costs from this report to an equivalent live hog price.

Wholesale Pork Prices

AMS reports sales of fresh pork cuts from, for example, packers to retailers, packers to processors, and packers to exporters. AMS reports the price range for the day as well as the daily average price weighted by the number of sales that occurred at each price for each cut. In 1998, AMS revised its reporting of wholesale pork prices to reflect the prevalence of closer trimmed and film-wrapped cuts. AMS also adjusted its reported wholesale prices back through 1979 on the basis of these revisions.

Information is reported only on products for which the price is established through negotiation between buyer and seller. Transactions based on formula pricing are not used. AMS market reporters confirm as many trades as necessary to ensure accurate representation of the market. Confirmation is normally attained through direct communication with the buyer and the seller and also with any brokers or other middle persons involved in the transaction. Reporters are not required to use a trade if confirmation cannot be obtained.

Retail Pork Prices

ERS reports retail prices for pork. ERS obtains retail pork prices for six major pork cuts from the Bureau of Labor Statistics. ERS calculates an overall average pork price by weighting the individual pork cut prices by the average percentage each cut constitutes of a hog carcass.

The Bureau of Labor Statistics collects retail pork prices as part of its derivation of the overall Consumer Price Index. The Bureau collects regular and sale prices from grocery stores and averages these prices, regardless of the amount of sales that may have occurred at each price. It collects retail pork prices from various stores during the first 3 weeks of each month and analyzes the data collected during the fourth week. Prices for both branded and nonbranded pork products are collected but deli items are not included in the analysis. The Bureau of Labor Statistics weights the prices it collects by the percentage of the market basket that accounts for that particular pork item and the relative population of the geographic area compared with other areas.

Farm-To-Retail Pork Price Spreads

Price spreads do not represent margins, profits, or losses for individual firms or groups of firms. Rather, they provide a perspective, over time, on differences in prices at various levels in the marketing and distribution system. Specifically, price spreads measure differences in calculated values for a consistent equivalent quantity and quality of product as it is successively measured at the farm, wholesale, and retail levels.

To ensure the measurement of a consistent quantity of product, ERS calculates pork price spreads on the basis of one pound of pork purchased at retail. For example, ERS adjusts live hog prices received by farmers to (1) convert them to the quantity of live animal equivalent to 1 pound of retail cuts and (2) remove the value contributed by by-products (such as the head and offal). Thus, the farm-to-retail price spread for pork is the difference between the average retail price per pound and the farm value of the quantity of live animals equivalent to 1 pound of retail cuts. According to ERS, 1.87 pounds of live hog are required for 1 pound of retail pork. Therefore, ERS adjusts monthly live hog prices—multiplies them by 1.87 then removes the value contributed by by-products—to determine a “net farm value” for purposes of calculating price spreads.

To ensure that a consistent quality of pork is measured, ERS calculates price spreads to show differences between market levels for a “standard” hog versus an “average” hog. Consistent means that the same product (for example, a 51- to 52-percent lean hog with 0.80 to 0.99 inches of backfat) is measured each month and at each marketing level. Consistently calculated price spreads provide an estimate of the distribution of final retail dollars among the farm, wholesale, and retail segments of the marketing chain and show changes in the distribution over time. Therefore, price spreads provide an analysis of the share of the consumer food dollar that goes to the farmer and the shares that go to other segments in the marketing system for a specific product. Thus, the purpose of ERS' price spreads is to show the value differences between market levels at a specific point in time and over long periods of time for the “standard” hog with 51 to 52 percent leanness and 0.80 to 0.99 inches of backfat. Estimates and comparisons do not necessarily represent an average live hog or hog carcass (which would change over time), nor do they represent the particular mix of pork cuts a retailer may sell at a given time. According to ERS, price spreads would not be meaningful if the product measured were not consistent.

**Appendix III
USDA's Methodology for Obtaining,
Verifying, and Reporting Live Hog and Pork
Product Prices and for Calculating
Farm-To-Retail Spreads**

ERS does not adjust its prices for the lag between the time the hog is slaughtered, processed, and merchandised. ERS uses prices at each level for the same time period.

In 1999, ERS revised its methods for reporting pork price spreads to reflect higher-quality (leaner) hogs and more closely trimmed pork products. As a result of this revision, ERS adjusted its prices back through 1979 to maintain historical consistency in reported spreads. The adjusted prices show an increase at all levels—farm, wholesale, and retail—over previously reported prices.

Pork Retail Sales, July 1998 Through June 1999

The tables in this appendix show retail prices for pork as reported by USDA and as indicated by supermarket scanner data obtained from Information Resources, Inc. for July 1998 through June 1999. Table IV.1 shows monthly retail prices for pork reported by USDA. Table IV.2 shows monthly dollars of pork sales, pounds sold, and average price per pound, according to supermarket scanner data. Table IV.2 also shows the number of supermarkets from which the data were obtained and the percent of U.S. grocery sales these stores represent. Table IV.3 shows grocery sales information by week.

Table IV.1: Monthly Pork Prices, as Reported by USDA, July 1998 Through June 1999

Month	Average price per pound
July 1998	\$2.45
August 1998	2.45
September 1998	2.45
October 1998	2.42
November 1998	2.41
December 1998	2.38
January 1999	2.33
February 1999	2.37
March 1999	2.37
April 1999	2.35
May 1999	2.39
June 1999	2.41

Source: USDA.

**Appendix IV
Pork Retail Sales, July 1998 Through June
1999**

Table IV.2: Monthly Pork Sales Information, July 1998 Through June 1999

Month	Pork sales	Volume sold (in pounds)	Average price per pound	Sales coverage	
				Number of stores	Percent of U.S. grocery sales
July 1998	\$838,741,354	345,438,973	\$2.43	7,100	41.5
August 1998	667,080,437	274,627,280	2.43	7,100	41.5
September 1998	675,633,388	280,780,867	2.41	7,100	41.5
October 1998	829,146,838	347,172,924	2.39	7,100	41.5
November 1998	681,347,323	288,670,936	2.36	7,100	41.5
December 1998	806,550,747	360,474,365	2.24	8,100	48.0
January 1999	918,693,696	391,797,768	2.34	8,100	48.0
February 1999	652,056,549	277,386,435	2.35	8,100	48.0
March 1999	666,502,105	285,661,355	2.33	8,100	48.0
April 1999	876,848,041	391,469,277	2.24	8,100	48.0
May 1999	656,290,798	275,280,645	2.38	8,100	48.0
June 1999	684,759,107	283,921,132	2.41	8,100	48.0
Total	\$8,953,650,384	3,802,681,957	\$2.35		

Source: Information Resources, Inc.

**Appendix IV
Pork Retail Sales, July 1998 Through June
1999**

Table IV.3: Weekly Pork Sales Information, July 1998 Through June 1999

Week ending	Pork sales	Volume sold (in pounds)	Average price per pound	Sales coverage	
				Number of stores	Percent of U.S. grocery sales
07/05/98	\$184,012,644	76,599,302	\$2.40	7,100	41.5
07/12/98	169,295,898	69,203,714	2.45	7,100	41.5
07/19/98	161,309,395	66,896,102	2.41	7,100	41.5
07/26/98	156,957,374	64,555,671	2.43	7,100	41.5
08/02/98	167,166,041	68,184,185	2.45	7,100	41.5
08/09/98	170,427,757	70,196,043	2.43	7,100	41.5
08/16/98	168,608,624	69,415,578	2.43	7,100	41.5
08/23/98	165,427,885	67,911,713	2.44	7,100	41.5
08/30/98	162,616,170	67,103,946	2.42	7,100	41.5
09/06/98	170,943,643	70,843,948	2.41	7,100	41.5
09/13/98	172,633,551	71,947,885	2.40	7,100	41.5
09/20/98	162,646,874	67,918,635	2.39	7,100	41.5
09/27/98	169,409,320	70,070,398	2.42	7,100	41.5
10/04/98	169,991,483	70,939,337	2.40	7,100	41.5
10/11/98	173,945,183	73,220,230	2.38	7,100	41.5
10/18/98	166,266,162	69,065,605	2.41	7,100	41.5
10/25/98	160,448,739	67,155,177	2.39	7,100	41.5
11/01/98	158,495,272	66,792,575	2.37	7,100	41.5
11/08/98	163,281,370	68,389,831	2.39	7,100	41.5
11/15/98	165,193,474	68,977,641	2.39	7,100	41.5
11/22/98	183,850,274	78,575,078	2.34	7,100	41.5
11/29/98	169,022,206	72,728,386	2.32	7,100	41.5
12/06/98	176,345,282	75,813,652	2.33	8,100	48.0
12/13/98	178,268,295	76,479,646	2.33	8,100	48.0
12/20/98	222,069,710	100,910,921	2.20	8,100	48.0
12/27/98	229,867,460	107,270,146	2.14	8,100	48.0
01/03/99	197,406,198	84,392,531	2.34	8,100	48.0
01/10/99	173,383,249	71,098,553	2.44	8,100	48.0
01/17/99	188,095,922	81,369,338	2.31	8,100	48.0
01/24/99	175,132,425	74,746,446	2.34	8,100	48.0
01/31/99	184,675,901	80,190,899	2.30	8,100	48.0
02/07/99	167,199,062	71,067,317	2.35	8,100	48.0
02/14/99	158,870,502	67,490,080	2.35	8,100	48.0
02/21/99	161,630,150	68,666,397	2.35	8,100	48.0
02/28/99	164,356,835	70,162,641	2.34	8,100	48.0

(continued)

**Appendix IV
Pork Retail Sales, July 1998 Through June
1999**

Week ending	Pork sales	Volume sold (in pounds)	Average price per pound	Sales coverage	
				Number of stores	Percent of U.S. grocery sales
03/07/99	169,601,382	73,718,223	2.30	8,100	48.0
03/14/99	163,617,195	70,649,583	2.32	8,100	48.0
03/21/99	163,769,662	68,744,015	2.38	8,100	48.0
03/28/99	169,513,866	72,549,535	2.34	8,100	48.0
04/04/99	229,635,131	116,811,854	1.97	8,100	48.0
04/11/99	159,537,657	69,696,818	2.29	8,100	48.0
04/18/99	167,038,346	68,918,936	2.42	8,100	48.0
04/25/99	158,843,955	66,830,770	2.38	8,100	48.0
05/02/99	161,792,951	69,210,900	2.34	8,100	48.0
05/09/99	167,712,672	71,679,279	2.34	8,100	48.0
05/16/99	166,275,551	69,108,155	2.41	8,100	48.0
05/23/99	161,977,448	66,677,843	2.43	8,100	48.0
05/30/99	160,325,126	67,815,369	2.36	8,100	48.0
06/06/99	175,752,331	72,698,802	2.42	8,100	48.0
06/13/99	176,636,691	74,442,447	2.37	8,100	48.0
06/20/99	166,022,634	68,885,787	2.41	8,100	48.0
06/27/99	166,347,452	67,894,095	2.45	8,100	48.0
Total	\$8,953,650,384	3,802,681,957	\$2.35		

Source: Information Resources, Inc.

Comments From the U.S. Department of Agriculture

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

In USDA's letter, the references to page numbers refer to GAO's draft report. When useful, we have updated the page numbers in the margin.

See comment 1.

See comment 2.

Now on pp. 25-26.
See comment 1.

See comment 3.



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20250

November 22, 1999

Mr. Lawrence J. Dyckman
Director, RCED Division
Food and Agriculture Issues
U.S. General Accounting Office
441 G Street, NW, Room 2T23
Washington, DC 20548

Dear Mr. Dyckman:

Thank you for the opportunity to review and provide comments on the Draft Report RCED-00-26, "Pork Industry: USDA's Reported Prices Need to Reflect Actual Sales." Below you will find both our general and technical comments to the draft report.

If we can be of further assistance, please call David Lewis at 202-720-6766.

General Comments:

The main concern is that the pork price spread live (or farm) value series is somewhat misrepresented in the report and the report implies it is inadequate. It is true that in the past we used a price series reported by the Agricultural Marketing Service (AMS), USDA, that was similar to that described in the report. However, in January 1999, USDA switched to the AMS series called the "National base lean hog carcass slaughter cost" for 51-52 percent lean hogs. This new price series covers all the packer hog purchases, which fit the specification in the Eastern Cornbelt, Western Cornbelt, and South.

When the series was switched in January 1999, the price spread series was revised back to 1979 so the historical series is consistent. The report should note the existence of the historical series, which can be accessed at <http://www.econ.ag.gov/briefing/meatbrif>.

Page 26 provides a description of how many AMS series are collected and reported. However, the description of the "National base lean hog carcass slaughter cost" series collection would be the relevant description to include in the report. This series reflects many of the qualities mentioned in the second paragraph on page 26.

Price spreads take a specific type and quality of hog and compare its value at different market levels. Thus, prices at various levels can be compared without the effects of shifts in the retail mix because of changing imports, exports, inventory, price featuring, and restaurant sales. The report suggests it would be better to use an average of all hogs at each market level. Such a proposal would be much more difficult because the "averages" are for a particular product mix for a defined time period but is not very useful for comparisons over time. However, as the report points out, the average of all products sold does provide a useful measure of prices in a specific time period.

AN EQUAL OPPORTUNITY EMPLOYER

**Appendix V
Comments From the U.S. Department of
Agriculture**

Lawrence J. Dyckman

2

Technical Comments:

See comment 2.

1. Page 2, bottom paragraph--The paragraph does not reflect the January 1999 changes in methodology. The last sentence describes the former hog price series--not the one currently used.

See comment 2.

2. Page 2, third paragraph, first sentence--Revise sentence to read: USDA's methods of obtaining and reporting hog and retail pork prices have not kept pace with the industry's changes because of how rapid the changes in the hog marketing structure were, current funding priorities, and a lack of access to much of the data. Therefore, prices reported by USDA do not accurately reflect all of the current prices paid to producers.

See comment 2.

3. Page 3, first line--Should read "weighted average of selected pork cuts offered for sale in carcass proportion".

See comment 2.

4. Page 3, 5 lines from bottom--Replace "prices paid by wholesalers" by "wholesale prices." Retailers often serve as their own wholesaler.

See comment 2.

5. Page 5, line 2--Replace "all hog farms" with "all hogs marked."

See comment 2.

6. Page 5, next to last line--Should say seven, not eight to be consistent with Table 3.

See comment 2.

7. Page 6, table footnote--Thorn Apple closed slaughter in 1998--not in 1999.

See comment 2.

8. Page 6, Figure 1--Changes are by counties--not states.

See comment 2.

9. Page 11, Table heading, last column--Delete "placed".

See comment 2.

10. Page 12, line 3--Add... *helped* create a surge of hogs.

Now on pp. 11-12.
See comment 1.

11. Page 13, first paragraph--The paragraph does not describe the hog prices now used. Additionally, retail prices may reflect actual purchases but may not reflect the amount purchased. The last sentence should state that the live hog price used is estimated from the "National base lean hog carcass slaughter cost" for 51-52 percent lean hogs reported by AMS.

Now on p. 11.
See comment 2.

12. Page 3, first paragraph, first sentence--Revise sentence to read: USDA's methods of obtaining and reporting hog and retail pork prices have not kept pace with the industry's changes because of rapid changes in the hog marketing structure, current funding priorities, and a lack of access to much of the data. Therefore prices reported by USDA do not accurately reflect all of the current prices paid to producers.

**Appendix V
Comments From the U.S. Department of
Agriculture**

Lawrence J. Dyckman

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See comment 2.

13. Page 13, second paragraph, last sentence--However, USDA reports farm-level prices for live hogs from the 30 percent of the hogs sold through the spot market.

See comment 2.

14. Page 14, line 6--Add "*weighted*" average

See comment 2.

15. Page 14, line 10-- Replace "number of purchases" with "amount purchased". USDA uses carcass proportions, which cannot be greatly off because the carcass yields cuts in a fixed proportion.

See comment 2.

16. Page 14, footnote--(HR 1906) amendment to the Agricultural Marketing Act of 1946.

Now on p. 13.
See comment 4.

17. Page 15--Scanner data may have decreased 12 cents to 14 cents less than the USDA price for a 6 percent decrease but this is small compared with the 16 percent drop in farm price from November or the 44 percent drop from October.

See comment 2.

18. Page 16--The \$500,000 likely represented a contribution to a proposed collection program put forward by NPPC.

See comment 2.

19. Page 17, first paragraph, first sentence--Revise sentence to read: USDA's methods of obtaining and reporting hog and retail pork prices have not kept pace with the industry's changes because of how rapid the changes in the hog marketing structure were, current funding priorities, and a lack of access to much of the data.

See comment 2.

20. Page 22, Table I.1--Should pigs per litter times farrowings per sow equal pigs per sow per year? Also in last column should this be labeled carcass pounds? Even so, the average weight appears to be small.

Now on pp. 25-26.
See comment 1.

21. Page 26--AMS price collection procedure should reflect the National base lean hog carcass slaughter cost for 51-52 percent lean hogs--not the previous spot market collection procedure.

See comment 2.

22. Page 26, third paragraph, second sentence--USDA reports the price range for the day as well as the daily average price weighted by the number of sales that occurred at each price.

See comment 2.

23. Page 27--Seven prices are used--not six, the seventh one is "all other".

**Appendix V
Comments From the U.S. Department of
Agriculture**

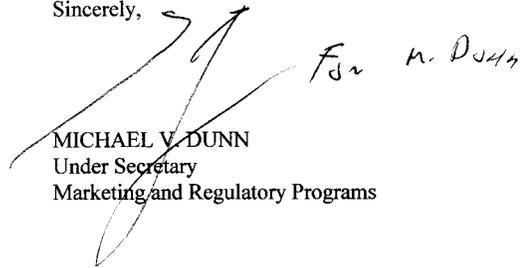
Lawrence J. Dyckman

4

See comment 3.

The report suggests that the USDA should compare prices for an average hog or mixture of cuts (at each level) at a point in time. However, we continue to believe it is more beneficial to obtain price data that facilitates comparisons over time.

Sincerely,



MICHAEL V. DUNN
Under Secretary
Marketing and Regulatory Programs

GAO's Comments

1. We agree and have revised our report to recognize that in January 1999 USDA revised its methods to develop pork price spreads using prices for leaner hogs. Leaner hogs sell for a higher price in the marketplace, thus having the effect of narrowing the spread between hog prices and retail pork prices.
2. We agree. The final report was revised to reflect USDA's comment, as appropriate.
3. We are not suggesting that USDA discontinue its current method of reporting pork price spreads. Rather, we believe that the recent legislative requirements to include prices based on most hog sales and actual consumer purchases, coupled with existing information reported by USDA, would provide a more accurate portrayal of the farm-to-retail pork price spread at a given point in time.
4. We agree that retail prices did not fall in proportion to the decline in hog prices. However, pork retail prices are composed of various value-added services, such as processing, transportation, and marketing, in addition to the cost of the hog. Therefore, even if the entire decline in hog prices were passed on at the retail level, the decline in percentage terms would be smaller.

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