AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

USDA's Economic Research Service has provided this report for historical research purposes.

Current reports are available in
AgEcon Search
(http://ageconsearch.umn.edu)
and on https://www.ers.usda.gov.

United States Department of Agriculture
Economic Research Service
https://www.ers.usda.gov

A
93.44
AGES
9106

United States
Department of
Agriculture

Economic
Research
Service

**Commodity
Economics
Division**

Choice Beef Prices and Price Spreads Series

Methodology and Revisions

T. Fred White, Jr.
Lawrence A. Duewer
John Ginzel
Robert Bohall
Terry Crawford

WAITE MEMORIAL BOOK COLLECTION
DEPT. OF AG. AND APPLIED ECONOMICS
1994 BUFORD AVE. - 232 COB
UNIVERSITY OF MINNESOTA
ST. PAUL, MN 55108 U.S.A.

It's Easy To Order Another Copy!

Just dial 1-800-999-6779. Toll free in the United States and Canada. Other areas, please call 1-301-725-7937.

Ask for *Choice Beef Prices and Price Spreads Series: Methodology and Revisions* (AGES 9106).

The cost is $8.00 per copy. Please add 25 percent extra for postage to non-U.S. addresses (including Canada). Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608.

We'll fill your order by first-class mail.

A
93.44
AGES
9106

Choice Beef Prices and Price Spreads Series: Methodology and Revisions. By T. Fred White, Jr., Lawrence A. Duewer, John Ginzel, Robert Bohall, and Terry Crawford. Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture. Staff Report AGES 9106.

Abstract

Changes in the location of beef cutting, merchandising methods, and data availability prompted revision of the Choice Beef Prices and Spreads Series calculation procedures. Major changes include replacing carcass value at the wholesale level with a boxed-beef value and moving from a partially bone-in to a mostly boneless product at the retail level. A change in the method for valuing beef trimmings as an ingredient in making ground beef also affects conversion factors, prices, and spreads.

Keywords: Beef, Choice beef prices, price spreads, meat, market performance

Acknowledgments

The authors thank Donna Owens for word processing and the many reviewers for their contributions.

Washington, DC 20005-4788 February 1991

Contents

	Page
Glossary	v
Summary	vi
Introduction	1
Expanded Market Price Information	2
Revised Methodology for Calculating Wholesale Beef Values	3
Slaughter Cattle Prices Changed to Direct Markets	3
Choice Beef Price Spread Calculations	4
Price Spread Relationships	5
Wholesale-to-Retail Spread	6
Farm-to-Wholesale Spread	6
Farm-to-Retail Spread	6
Farm Value-Retail Price Ratio (Farmer's Share)	7
Summary of Revised Procedures and Results Compared with the Series Being Replaced	7
Transition from the Price and Spread Series Being Replaced	11
Conclusions	11
Appendix A--Yield Coefficients for Converting Live Steers to Retail Choice Beef	13
Appendix B--Calculating the Revised Retail Choice Beef Price	13
Appendix C--Wholesale Price	24
Appendix D--Live-Steer Price	27
Appendix E--Conversion Factors Used in Calculating Choice Beef Prices and Spreads	28
Appendix F--Revision of Historical Data	32

Glossary

Boxed beef: Beef fabricated into primals (or subprimals), vacuum packaged, and placed into cartons.

Carcass proportion: Relative amounts of each cut (primal, subprimal, or retail cut) obtained from a beef carcass.

Composite price: Weighted average price of all cuts using carcass proportions.

Fabrication: Production of beef cuts (primal, subprimal, or retail cuts) from a carcass.

Price spread: Value difference of an equivalent amount of product between two industry levels.

Primals: Major divisions of the carcass (chuck, rib, loin, and round) and rough-cuts (brisket, plate, and flank).

Retail beef or retail cuts: Form in which beef cuts are sold by grocery stores (retailers) to consumers. While large quantities of beef move through the food service industry, the price spread series calculations represent beef only as if it were all sold by retail grocers in carcass proportions.

Subprimals: Smaller cuts fabricated from primals. A primal round may be cut into subprimals of top round, bottom round, and knuckle.

Value: Monetary worth of a certain amount of product (at any industry level).

Yield Grade (YG): Available for use since June 1965, USDA yield grades for beef provide a nationally uniform method of identifying "quantity" or "cutability" differences among beef carcasses. Yield Grade 1 has the least fat and waste and Yield Grade 5 the most.

Summary

Procedures for calculating Choice beef prices and spreads were last revised in 1978, and many changes have occurred since then in technology, merchandising practices, data availability, and structure of the beef industry. Price and spread calculation procedures were revised to reflect these changes.

Revisions to the price spread procedures were made at each of the farm, wholesale, and retail pricing levels.

The most important change in procedures was the switch from a carcass to a boxed-beef value at the wholesale level. In the 1990 revision, beef is fabricated into primal and subprimal cuts and sold as boxed beef at the wholesale level, rather than as carcasses. Sale and movement of carcasses have declined to such an extent that the U.S. Department of Agriculture's Agricultural Marketing Service (AMS) suspended reporting of carcass prices on June 29, 1990. The wholesale value (as boxed beef) is 15-20 cents per retail pound higher than the previous carcass series. The new wholesale value for boxed beef reflects the additional cutting and trimming involved.

Two major changes in procedure were made at the retail level: the reflection of more boneless and closer trimmed cuts and the method of converting trimmings into ground beef. The combination of closer trimming of exterior fat (to 1/4 inch or less) and selling boneless cuts (except for short and back ribs) reduces the total pounds of retail product purchased by consumers. Assumptions made at retail may lead actual industry practices slightly, but the trend is toward closely trimmed boneless beef. The second change at retail was in the way trimmings are converted to ground beef and valued at the retail level. In the previous procedure, it was assumed that enough excess fat was removed from the beef trim so the resulting product could be sold as ground beef. The revised procedure recognizes industry practices by mixing 50/50 lean trimmings (lean-fat percent content) and 90/10 lean trimmings to make ground beef. Fabricated 50/50 trim is valued, according to its cost proportion, as an input into ground beef manufacture. The method results in the sale of proportionally more retail product, reducing the composite Choice retail beef price. Closer trimmed and more boneless cuts increased the retail price of beef by about 25 cents in 1989, but valuing trimmings as an input into ground beef manufacture lowered the price by almost 30 cents. The net effect results in a small decrease (less than 5 cents) in the retail price of beef.

At the farm (live weight) level, the eight-market (four terminal and four direct markets) average steer price was replaced with AMS's new (April 1989) weighted five-region direct market price series. Movement of fed cattle through terminals has declined to less than 5 percent of total volume, making the eight-market price less representative than the direct market replacement.

The price levels of the two series were similar when compared at the start of the new series.

A survey of industry (both academic and industry sources) indicated the conversion of live weight to chilled-carcass weight had changed since 1978. This yield factor, normally called the dressing percentage, was therefore increased from 61.5 to 63 percent. A higher dressing percentage lowers the live pounds required to obtain a pound of retail beef. The yield of retail cuts from the carcass decreased, however, with the move to more boneless, closer trimmed cuts. The result was that the farm-to-retail conversion remained the same (2.40) as before.

While the farm-to-retail conversion factor does not change the gross farm value received by the producer, an adjustment in the treatment of byproducts does increase the net farm value. The net farm value is the gross farm value minus the value of byproducts. With current industry technology, most of the fat and bone is removed at the packer level, and only a small quantity of fat and bone byproduct is removed at the retail level. The fat and bone at the retail level has little value because of the cost for transporting small quantities and the limited use of these byproducts removed at the retail store. The byproduct value previously credited between wholesale and retail was thus dropped, slightly decreasing the total value obtained from byproducts. This, in turn, increased the net farm value. The net result of revising 1989 Choice beef prices was slightly lower retail prices and slightly higher net farm values. The reported farm-to-retail spread declined about 6 cents for 1989 due to the revisions. The substantially higher wholesale value (due to replacing the carcass value with the boxed-beef value) increased the farm-to-wholesale spread 14 cents and reduced the wholesale-to-retail spread 20 cents for 1989. These values more nearly reflect a packer spread (farm-to-wholesale) and retailer spread (wholesale-to-retail) as packers sell boxed beef rather than carcasses. Spreads are not the same as packer and retailer margins, however, because transportation, wholesaling, and other costs and returns are also included in the price differences (or spreads).

Choice Beef Prices and Price Spreads Series

Methodology and Revisions

T. Fred White, Jr., Lawrence A. Duewer, John Ginzel,
Robert Bohall, and Terry Crawford

Introduction

The beef-marketing channel has continued to change in recent years, but procedures for calculating Choice beef prices and spreads had not been updated since 1978. To reflect recent changes in data and industry practices, U.S. Department of Agriculture's Economic Research Service (USDA, ERS) revised its methods for calculating Choice retail, wholesale, and live beef values and the resulting spread series. This report presents the revised methodology. Data series made available in recent years have facilitated making these revisions so that the beef-marketing system is reflected more accurately.

Beef carcasses are cut (divided) into smaller pieces earlier in the marketing channel. Packers are fabricating and selling more beef in boxed-beef form rather than as carcasses, and boxed products are becoming more differentiated and available in smaller subprimal cuts. Some retailers are buying boxed beef as subprimals rather than as primals and are wanting more boneless and closer trimmed wholesale cuts. Retailers are also selling meat trimmed almost completely of exterior fat and with most of the bone removed. On June 29, 1990, USDA's Agricultural Marketing Service (AMS) suspended direct reporting of carcass prices.

There has also been a trend to selling ground beef with a higher lean percentage. Retailers tend to buy more of their beef direct from packers and perform their own distribution to local stores. Changes in the way beef products are marketed also have affected price spreads.

Price spreads are, quite simply, differences between prices at the different levels within the market channel. Three price levels in the beef channel are identified: (1) live animal price paid by the packer to the producer; (2) wholesale beef price paid by the wholesaler or retailer to the packer; and (3) retail beef price paid by the consumer to the grocer. Each of these prices is adjusted to a value that represents an equivalent beef product

at each level. The standard is 1 pound of Choice beef as sold at the retail level expressed in carcass proportions. This includes an adjustment at the producer level to remove the value contributed from byproducts. Spreads are then the differences between these values. They do not represent product mix margins, profits, or losses for individual firms. Price spreads are an attempt to measure the aggregate as if all meat were sold and priced through food retailers. The product mix may vary in actuality because of different product shares sold in noncarcass proportions in home and away-from-home markets.

Retailers sell the various cuts of beef in the proportion that their customers want. With boxed beef, retailers could buy only rounds and sell all round cuts. However, most stores sell a large mixture of cuts but not necessarily in the same proportion as found in a beef carcass. Producers, by necessity, sell cattle in carcass proportion.

The price spreads calculation procedures assume that an equivalent amount and mixture of products are priced at each market level. The objective of price spread calculations is not to measure the prices or margins for a specific firm, but to compare the value of an equivalent product at different market levels for the beef sector. While various cuts sold by retailers can be combined to reflect the proportions found in a live animal, a live animal cannot be changed to the proportions a retailer sells. Price spreads convert all marketing levels to reflect carcass proportions.

A similar justification explains why price spreads are limited to Choice beef. It is much easier to calculate price spread values for Choice Yield Grade 3 steer beef than from beef produced from a mixture of steers, heifers, cows, and bulls.

Expanded Market Price Information

The Bureau of Labor Statistics (BLS) expanded the number of retail beef price series reported to ERS by six cuts (with ground beef considered as a cut) in 1989. These were boneless Choice sirloin steak, boneless Choice chuck roast, boneless Choice ribeye steak, bone-in short ribs, stew meat, and lean and extra lean (combined) ground beef. Previously, BLS reported prices for 10 retail cuts, but in recent years, prices for two of these cuts were discontinued. As more cuts are now sold boneless at retail, the two discontinued cuts and four other BLS bone-in cuts were replaced with boneless cuts. Ground chuck was also replaced with lean and extra lean ground beef. The proposed retail price series uses BLS prices for 11 beef cuts, and 4 additional cuts are also derived from BLS prices used.

Revised Methodology for Calculating Wholesale Beef Values

The AMS methodology for computing wholesale boxed-beef composite value was revised in early 1990. Previously, AMS calculated an estimated composite wholesale boxed-beef cutout value by a fixed weighted average of 12 wholesale cuts and 13 credit (or byproduct) items using a single cutting method from a carcass. The new composite wholesale value is weighted by AMS with the daily trading volume of various wholesale cuts, thereby providing a dynamic set of possible cutting methods when calculating the fabricated wholesale boxed-beef cutout value. AMS now considers most of the fabricated cuts that are sold instead of a selected few when determining composite value on the basis of boxed-beef and credit item sales.

AMS publishes composite values for the four beef primal cuts (chuck, rib, loin, and round) and three rough primal cuts (brisket, short plate, and flank) of a beef carcass. For convenience, the remainder of this report will continue to refer to these rough cuts as primals. Composite value for each primal of a carcass is calculated as a weighted average of wholesale prices received by packers for various subprimal cuts from that primal. Each carcass primal has a unique set of fabrication alternatives, and primal composite values are calculated by weighting wholesale cuts according to reported wholesale trade volume. The boxed-beef composite value uses fixed weights to combine the seven primal values.

AMS uses constant-yield coefficients for breaking carcasses into primals and into common subprimals. These yield coefficients are based on industry cutting tests, which are examined and revised periodically. They use yield coefficients for seven cutting methods each for chuck and loin primals and four each for rib and round primals. Flank yield coefficients are differentiated according to quality grade. The short plate yield coefficients are differentiated according to carcass weight and quality grade. Brisket yield factors are not differentiated by carcass weight or quality grade.

The composite wholesale boxed-beef value is a weighted average of the primal composite values on a carcass-weight-equivalent basis. For example, the January 18, 1990, 3 p.m. boxed-beef composite value for Choice Yield Grade (YG) 1-3, 550- to 700-pound carcasses is provided in table 1.

Slaughter Cattle Prices Changed to Direct Markets

A new AMS slaughter cattle price series became available in April 1989. The series is a weighted-average slaughter steer price for five regions: Texas-Oklahoma Panhandle, Kansas, Colorado, eastern Nebraska, and Iowa-southern Minnesota. The reported prices are weighted by confirmed sales. Price and weight categories are published according to the estimated grade of those sold. The grading estimate categories are 80-100 percent

Table 1--Boxed-beef cutout value calculation, January 18, 1990

Carcass portion	Carcass yield		Primal or rough cut value		Result
	Percent		$/cwt		$/cwt
Chuck	29.29	X	102.70	=	30.08
Rib	11.11	X	149.87	=	16.65
Loin	21.13	X	146.78	=	31.01
Round	22.22	X	128.20	=	28.49
Brisket	5.26	X	80.82	=	4.25
Short plate	7.42	X	85.04	=	6.31
Flank	3.56	X	69.02	=	2.46
Total	1/ 100.00				119.25

1/ May not total to 100 percent due to rounding.

Choice, 65-80 percent Choice, 35-65 percent Choice, and 20-35 percent Choice. The live slaughter steer price series for 65-80 percent Choice is used, because it is the largest volume category and most likely produces the greatest number of Choice Yield Grade 1-3 cattle. The 80-100 percent Choice category likely would provide proportionately more Yield Grade 4 and 5 carcasses.

Choice Beef Price Spread Calculations

Choice beef price spread series are developed using retail, wholesale boxed-beef, and live animal levels. Details of the derivation of these prices and values are presented in the appendixes. Retail value is based on 1 pound of Choice retail beef. Obtaining the wholesale value is a two-step process. The first step is to obtain the boxed cutout value published by AMS, subtract the value of the byproducts of wholesale cut fabrication, and add a transportation differential. This value is then multiplied by a boxed-to-retail conversion factor.

The wholesale value represents the retail cut-bone equivalent price of wholesale boxed beef. ERS assumes no value for byproduct credits produced at the retail level. The value of the byproducts of wholesale fabrication is calculated as the product of the boxed-beef byproduct adjusted price and the percentage of the carcass that represents the byproducts of wholesale fabrication (21.719 percent). This value is subtracted from the wholesale boxed-beef composite carcass price for 550- to 700-pound carcass weight Choice beef published by AMS to provide the wholesale price of the boxed beef sold to retailers. The

transportation adjustment ($3.49 per hundredweight) is then added to provide a delivered value. The delivered value of boxed beef is then multiplied by the carcass-to-purchased retail meat conversion factor (1.513) to provide the wholesale value for the price spread series. Carcass conversion factors are used because the AMS composite boxed-beef cutout report is based upon the equivalent products obtained from 100 pounds of beef carcass.

The difference between the gross and net farm value for live cattle represents the value of all byproducts. Gross farm value is based on the price of live cattle. The net farm value adjusts for the value of byproducts produced during slaughter and wholesale beef fabrication. Gross farm value represents the total value of live animal necessary to produce 1 pound of retail beef, whereas net farm value represents the value of only the meat at the live animal level. Gross farm value is based on the live-steer price and a conversion factor (2.40 pounds) from live animal to retail beef.

Net farm value represents the value of the meat only at the live animal level. The byproducts of wholesale cut fabrication (fat, bone, and kidney) and slaughter (hide and offal value) are accounted for when calculating the net farm value.

The difference (byproduct value) between gross and net farm value is based on the ratio of the value of all byproducts to the total value of the meat and all byproducts, measured at the wholesale level. The ratio is calculated using three components: (1) the AMS hide and offal value, (2) wholesale fabrication byproduct value (bone, fat, and kidney trimmed at wholesale that is not sold to retailers), and (3) wholesale value of the carcass according to the AMS composite boxed-beef cutout value (including byproducts of wholesale cut fabrication). The ratio uses values received at wholesale, but calculations are made using live-weight basis. This ratio represents the proportion of the total wholesale value contributed by all byproducts and is illustrated below:

$$\text{Ratio of total wholesale byproduct value to total wholesale animal value} = \frac{\text{hide and offal value} + \text{wholesale cut fabrication byproduct value}}{\text{hide and offal value} + \text{carcass value according to the AMS composite boxed-beef value}}$$

The net farm value is then calculated as the product of 1 minus the ratio of the wholesale value of byproducts at the live animal level and the gross farm value.

Price Spread Relationships

The Choice beef price spread series monitors value differences between retail, wholesale, and live market levels at a specific time period. Three price spreads are reported: wholesale-to-

retail, farm-to-wholesale, and farm-to-retail. The farm-to-retail spread can be calculated directly or as the sum of the farm-to-wholesale and wholesale-to-retail spreads. Change in the spreads is more important than the absolute value. Changes in the spreads indicate added, or decreased, product value between market levels at the spread's two endpoints. An example of a value change is increased trimming, boning, and added services. These changes could occur anywhere between the three price-reporting levels. Spreads are merely differences between concurrent prices at the farm, wholesale, and retail levels. These price spreads may be analyzed over time to estimate national average changes in costs and returns. Thus, monthly and quarterly data on price spreads widen or narrow as prices at any or all levels change. The spread tends to average to usual levels over time as wholesale and retail prices adjust to changes in slaughter cattle prices and changes in marketing costs and profits. Short-term spreads may fluctuate more since each market level is priced at the same time and there is some lag in physical product movement and in price transmission.

Wholesale-to-Retail Spread

The wholesale-to-retail price spread is the difference between the retail price (or value) and the wholesale value.[1] On average, this difference reflects costs for retail trimming, boning, packaging, intracity transportation, store overhead, and other costs, plus a residual profit or loss to the retailer. Along with some additional fat and bone trim, shrink and cutting loss is accounted for during the conversion of wholesale boxed beef to retail cuts.

Farm-to-Wholesale Spread

The farm-to-wholesale price spread is the difference between the wholesale value and the net farm value. This difference usually includes costs of cattle slaughter, wholesale cut fabrication, intercity transportation, and other costs, besides a profit or loss to packers. Shrink and cutting losses, which occur during wholesale cut fabrication from carcasses, are accounted for in the farm-to-wholesale spread. A 3-percent retail shrink adjustment is accounted for through the conversion factor.

Farm-to-Retail Spread

The farm-to-retail price spread is the difference between concurrent retail and net farm values. This spread includes the change in value due to all forms of trimming, boning, shrink and

---

[1]It has often been suggested that a lag should be incorporated into the spread calculation procedure. Weekly wholesale and farm level values will be released so that any lag desired could be calculated by the user of these data. The authors are preparing a short article describing use of different lags with spread data.

cutting loss, packaging, and transportation, which occurs during the conversion of the animal into retail beef.

Farm Value-Retail Price Ratio (Farmer's Share)

The farmer's share statistic is calculated by ERS as a ratio of the value at the farm level of a pound of meat purchased at retail (net farm value) to the value of meat purchased at the retail level. The farmer's share is derived by dividing the net farm value by the retail price. This statistic represents the relative changes in the value gained as animals are slaughtered, processed, and fabricated into retail meat products versus the value of the live animal.

In addition to the Choice beef price spread series and its components, an all-fresh retail beef price series is available upon request but does not include price spreads. This all-fresh series more accurately reflects an average pound of beef purchased because ground beef is weighted heavier and includes non-Choice beef. The increased sales of Select and sales of other beef are also reflected.

Summary of Revised Procedures and Results Compared with the Series Being Replaced

Several changes were made in revising the Choice beef price and spread series calculation procedures. The retail price calculations do the following: (1) use direct carcass proportions, (2) incorporate expanded BLS retail cut price information, (3) value 50/50 trimmings on the basis of manufactured ground beef ingredient costs, and (4) adjust to a boneless-equivalent basis--except for the short and back rib retail cuts. The wholesale value is calculated using AMS boxed-beef composite cutout values for 550- to 700-pound Choice Yield Grade 1-3 carcasses. The farm value is based on a live steer direct market price for the weighted average of the five regions (65-80 percent Choice). Table 2 presents a summary of the differences between the previous and revised price and spread series calculation procedures.

Some of the BLS retail prices used in the revised procedure first became available in 1989. The additional boneless prices provided in 1989 were estimated before 1989 to develop historical series using the revised procedures. The five-market weighted average farm series began in 1989, and the boxed-beef cutout series was revised at the beginning of 1990.

Price, value, and spread data for the previous and revised procedures are provided for 1989 (table 3). The net farm and the wholesale values for the revised series are higher than for the previous series, while the revised retail price series is lower for all but 1 month. This means the farm-to-retail price spread is narrower in the revised series.

Table 2--Changes between previous (being replaced) and revised series

Part of change	Previous	Revised
Live price	Average of four terminal and four direct markets from AMS.	AMS weighted average of prices from five direct markets: Texas-Oklahoma, Kansas, Colorado, E. Nebraska, and Iowa-S. Minnesota.
Live price	Used Choice 2-4, 1,100-1,300 pound steer prices.	Uses 65-80% Choice steer prices (remainder Select).
Wholesale value	Steer carcass prices reported by AMS, the last available market was discontinued June 29, 1990.	Weighted composite cutout value of boxed-beef cuts reported by AMS (last revised 1/2/90).
Wholesale value	Originally assumed five carcass markets with transportation to consumption areas.	Computes a transportation differential to adjust the central U.S. quote to a U.S. average.
Retail price	Weighted average of nine BLS retail beef prices.	Composite weighted average of 10 BLS prices and/or their derivatives, including additional prices first released in 1989.
Byproduct value	Both a farm byproduct allowance and a wholesale byproduct allowance was calculated.	Only one byproduct allowance is used, but it includes both the normal hide and offal value items and the fat, bone, and kidney removed in cutting boxed beef. No retail level byproduct credits are included.
Remaining lean trim products	Excess fat was removed from trimmings to produce regular ground beef.	Assesses value of trim as a manufacturing input for regular ground beef (73% lean).
Conversion factors	Farm-to-retail 2.40, Carcass-to-retail 1.48.	Farm-to-retail 2.40, AMS adjusted boxed-beef cutout value to retail 1.14.

Table 3--Comparison of revised and previous prices and price spreads for Choice retail beef, January 1989 to June 1990

Series	Item	Jan. 1989	Feb. 1989	Mar. 1989	Apr. 1989	May 1989	June 1989
				Cents per pound			
Choice retail price	Revised	259.2	258.2	264.7	265.3	266.7	268.9
	Previous	264.3	265.2	269.5	269.8	271.9	268.1
	Difference	-4.7	-6.7	-4.8	-4.5	-5.2	.8
Wholesale value 1/	Revised	175.2	176.3	180.5	182.7	182.3	176.3
	Previous	159.8	160.9	167.4	169.5	167.7	158.5
	Difference	15.4	15.4	13.1	13.2	14.6	17.8
Net farm value	Revised	156.6	158.4	164.6	165.0	161.8	153.7
	Previous	155.8	157.6	163.9	164.3	160.9	152.5
	Difference	.8	.8	.4	.7	.9	1.2
Total farm-to-retail spread	Revised	102.6	99.8	100.1	100.3	104.9	115.2
	Previous	108.5	107.6	105.6	105.5	111.0	115.6
	Difference	-5.9	-7.8	-5.5	-5.2	-6.1	-.4
Farm-wholesale spread	Revised	18.6	17.9	15.9	17.7	20.5	22.6
	Previous	4.0	3.3	3.5	5.2	6.8	6.0
	Difference	14.6	14.6	12.4	12.5	13.7	16.6
Wholesale-retail spread	Revised	84.0	81.9	84.2	82.6	84.4	92.6
	Previous	104.5	104.3	102.1	100.3	104.2	109.6
	Difference	-20.5	-22.4	-17.9	-17.7	-19.8	-17.0

Series	Item	July 1989	Aug. 1989	Sept. 1989	Oct. 1989	Nov. 1989	Dec. 1989	1989 average
					Cents per pound			
Choice retail price	Revised	269.7	268.2	266.2	265.0	266.4	269.4	265.7
	Previous	271.6	269.5	270.9	270.8	272.9	274.4	269.9
	Difference	-1.9	-1.3	-4.7	-5.8	-6.5	-5.0	-4.2
Wholesale value 1/	Revised	174.2	173.7	169.6	169.5	177.1	183.8	176.8
	Previous	156.4	155.6	152.3	153.8	159.6	165.9	160.6
	Difference	17.8	18.1	17.3	15.7	17.5	17.9	16.2
Net farm value	Revised	151.2	155.7	146.8	152.1	159.8	164.9	157.6
	Previous	149.9	152.2	144.2	148.3	154.8	160.4	155.4
	Difference	.3	3.5	2.6	3.8	4.9	4.5	2.2
Total farm-to-retail spread	Revised	118.5	112.5	119.4	112.9	106.6	104.5	108.1
	Previous	121.7	117.3	126.7	122.5	118.1	114.0	114.5
	Difference	-3.2	-4.8	-7.3	-9.6	-11.5	-9.5	-6.4
Farm-wholesale spread	Revised	23.0	18.0	22.8	17.4	17.3	18.9	19.2
	Previous	6.5	3.4	8.1	5.5	4.8	5.5	5.2
	Difference	16.5	14.6	14.7	11.9	12.5	13.4	14.0
Wholesale-retail spread	Revised	95.5	94.5	96.6	95.5	89.3	85.6	88.9
	Previous	115.2	113.9	118.6	117.0	113.3	108.5	109.3
	Difference	-19.7	-19.4	-22.0	-21.5	-24.0	-22.9	-20.4

See footnote at end of table.

--Continued

Table 3--Comparison of revised and previous prices and price spreads for Choice retail beef, January 1989 to June 1990--Continued

Series	Item	Jan. 1990	Feb. 1990	Mar. 1990	Apr. 1990	May 1990	June 1990
				Cents per pound			
Choice retail price	Revised	274.4	271.0	272.5	277.9	283.6	282.1
	Previous	281.3	281.5	281.5	285.4	287.0	288.6
	Difference	-6.9	-10.5	-9.0	-7.5	-3.4	-6.5
Wholesale 1/ value	Revised	187.1	186.0	187.7	190.1	191.6	187.8
	Previous	168.7	167.9	169.2	170.9	170.3	167.2
	Difference	18.4	18.1	18.5	19.2	21.3	20.6
Net farm value	Revised	167.6	167.2	169.3	170.8	167.2	163.9
	Previous	163.3	164.2	166.2	168.1	165.0	161.7
	Difference	4.3	4.0	3.1	2.7	2.2	2.2
Total farm-to-retail spread	Revised	106.8	103.8	103.2	107.1	116.4	118.2
	Previous	118.0	117.3	115.3	117.3	122.0	126.9
	Difference	-11.2	-13.5	-12.1	-10.2	-5.6	-8.7
Farm-wholesale spread	Revised	19.5	18.8	18.4	19.3	24.4	23.9
	Previous	5.4	3.7	3.0	2.8	5.3	5.5
	Difference	14.1	15.1	15.4	16.5	19.1	18.4
Wholesale-retail spread	Revised	87.3	85.0	84.8	87.8	92.0	94.3
	Previous	112.6	113.6	112.3	114.5	116.7	121.4
	Difference	-25.3	-28.6	-27.5	-26.7	-24.7	-27.1

1/ Includes the cost for fabrication of the carcass to boxed beef at the wholesale level, rather than at the retail level.

The shift from carcass to boxed beef resulted in increased wholesale values because boxed-beef fabrication requires more processing than hanging carcasses and results in a higher valued product. Decreased retail prices indicate that the revised procedures for determining the value of 50/50 lean beef trimmings reduced the average retail price more than the increase in price from using more boneless and closely trimmed retail cuts.[2]

Each of these changes affected the composite price by more than 25 cents per pound of retail beef in the opposite direction. Though the revised retail price is lower than with the previous procedure, a substantial increase in the retail price of beef cuts occurred due to merchandising more boneless and closely trimmed cuts. The handling of 50/50 beef trimmings reduces the retail composite price. Ground beef sales have increased relative to beef cuts over time.

Month-to-month movements for the retail price series are different for some periods when comparing the revised and previous series. This is due to more weight given to ground beef products and less to table cuts, and the BLS beef prices now include more boneless product, which is inherently valued at higher prices because of less fat trim used for the composite retail price calculation.

The differences between the revised and the previous farm-to-wholesale and wholesale-to-retail spreads are mainly because the wholesale-value basis was changed from carcass to boxed beef.

Transition from the Price and Spread Series Being Replaced

A historical series comparable to the new revised price spread series is provided in appendix F. This historical series was adjusted from the previous series with the use of several assumptions. The 1989-90 data overlap period is also provided if readers would like to develop their own historical series.

Series splicing (matching previous to the revised) is completed using a constant percentage to adjust the previous series to the revised. The 1989 data were used as the base year for adjusting earlier years. These procedures are explained in greater detail in appendix F. The differences between the previous and the revised price spread series are presented in table 2.

Conclusions

Many changes in meat merchandising, data availability, and structural and marketing practices have occurred since Choice

---

[2]50/50 refers to beef trimmings with approximately 50-percent lean and 50-percent fat composition (50/50 trim).

beef prices and spread calculation procedures were revised in 1978. New revisions in price and spread calculation procedures were needed to reflect changes in the beef industry.

Major changes include replacing the carcass value with a boxed-beef value at wholesale and moving from a partially bone-in to a mostly boneless retail product. The method for valuing beef trimmings also was changed. The eight-market (four terminal and four direct markets) average live-steer price was replaced with a new weighted five-region direct market price series. Additional retail cut price information provided by BLS was included in the retail price calculations. The dressing percentage used and retail cut price weighting procedure were also revised. Details of procedural changes and the effects of these changes are covered in the appendixes.

These revisions raise wholesale values (up to 16 cents in 1989) and lower retail prices (down 4 cents), both of which reflect a different product compared with the previous calculation procedure.[3] The move to boneless cuts increased the retail price to about 25 cents. The change in the way beef trim is valued reduced the price more (almost 30 cents) than the countereffect of using boneless cuts more closely trimmed.

Choice beef price spread procedures need to be reexamined periodically as the beef industry will continue to change.

---

[3]Boxed beef versus carcass and partially bone-in versus mostly boneless retail cuts with 50/50 trimmings handled as an ingredient into ground beef.

Appendix A--Yield Coefficients for Converting Live Steers To Retail Choice Beef

ERS developed revised wholesale boxed beef-to-retail yield coefficients after considering cutting tests from various government, academic, and industry sources. ERS yield estimates reflect the trend toward merchandising more boneless retail beef cuts. The revised yields use boneless beef retail cuts except for short ribs and back ribs. However, the ERS estimates may be slightly ahead of industry practices as some bone-in steaks and roasts are still marketed.

Carcass to Boxed-Beef Yield

Carcass to boxed-beef yields are used from the most recent (January 1990) AMS boxed-beef cutout value procedures. These yields are calculated in two steps. First, various ways of breaking primals are used to reconstruct these primals according to the trading volume of fabricated wholesale beef subprimal cuts. Second, the primals are aggregated with fixed carcass proportion weights to a beef-carcass basis.

Live Animal to Carcass Yield

After surveying various industry, academic, and government sources, the conversion of Choice Yield Grade 3 live steers to a chilled-weight-carcass basis was revised to 63 percent from 61.5 percent. Estimates received varied from 62.5 to 63.5 percent but clustered around 63 percent.

Appendix B--Calculating the Revised Retail Choice Beef Price

The revised procedures to calculate retail price and price spreads are designed to weight cuts in the proportions fabricated from a Choice carcass with all boneless cuts at retail except for short ribs and back ribs. The industry has already moved to mostly boneless cuts. This methodology was used to weight the available BLS prices. Development of the new weights for the available BLS retail Choice beef prices began with retail yield estimates for selected wholesale cuts. The next step aggregates yields of retail and trimmings product across wholesale cuts. Finally, retail cuts are grouped according to primal, type (steak, roast, ground, or other), or their retail price.

The cutting tests used by ERS from wholesale-to-retail beef cuts are presented in appendix table 1. These data were obtained from an industry source and cross-checked with other sources. The sum of all the wholesale cuts represents the complete carcass. The total yield (carcass and boxed-beef basis) of a particular fabricated product (retail cut) may be determined by summing across all wholesale cuts. The carcass-basis weighting of each retail cut was calculated as the product of the wholesale cut's percentage of the carcass and the retail cut's percentage

Appendix table 1--Retail Choice YG 3 beef cut yields used for retail cut yield determination

Retail cut	Ribeye 1/ 112A	Brisket 120	Chuck 115	Knuckle 167	Top round 168	Bottom 170	Strip ln. 180	Top sirln. 184	Sir. flap 185A	Sir. ball tip 185B	Sir. tri-tip 185C
Subprimals as a % of carcass	3.39	2.59	17.92	2.87	5.82	7.26	3.91	3.39	0.49	0.54	0.69
					Retail as a percentage of wholesale cut						
Ribeye roast lip on, boneless	48.26	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Ribeye steak lip on	48.7	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Brisket roast point cut	- -	49.35	- -	- -	- -	- -	- -	- -	- -	- -	- -
Brisket roast flat cut	- -	33.09	- -	- -	- -	- -	- -	- -	- -	- -	- -
Shoulder pot roast, boneless	- -	- -	20.02	- -	- -	- -	- -	- -	- -	- -	- -
Shoulder steak, boneless	- -	- -	2.07	- -	- -	- -	- -	- -	- -	- -	- -
Underblade steak, boneless	- -	- -	6.77	- -	- -	- -	- -	- -	- -	- -	- -
Chuck pot roast, boneless	- -	- -	15.06	- -	- -	- -	- -	- -	- -	- -	- -
Chuck eye steak, boneless	- -	- -	2.68	- -	- -	- -	- -	- -	- -	- -	- -
Chuck eye edge pot roast	- -	- -	3.90	- -	- -	- -	- -	- -	- -	- -	- -
Mock tender steak	- -	- -	4.15	- -	- -	- -	- -	- -	- -	- -	- -
Neck pot roast	- -	- -	6.91	- -	- -	- -	- -	- -	- -	- -	- -
Beef cube steak	- -	- -	3.91	10.34	6.14	2.15	- -	5.94	- -	- -	- -
Tip roast	- -	- -	- -	47.39	- -	- -	- -	- -	- -	- -	- -
Tip steak	- -	- -	- -	29.73	- -	- -	- -	- -	- -	- -	- -
Top round steak	- -	- -	- -	- -	44.83	- -	- -	- -	- -	- -	- -
Top round roast	- -	- -	- -	- -	29.79	- -	- -	- -	- -	- -	- -
Heel of round	- -	- -	- -	- -	- -	14.27	- -	- -	- -	- -	- -
Bottom round steak	- -	- -	- -	- -	- -	28.55	- -	- -	- -	- -	- -
Bottom round rump roast	- -	- -	- -	- -	- -	14.19	- -	- -	- -	- -	- -
Eye of round roast	- -	- -	- -	- -	- -	11.17	- -	- -	- -	- -	- -
Eye of round steak	- -	- -	- -	- -	- -	8.23	- -	- -	- -	- -	- -
Top loin steak, boneless	- -	- -	- -	- -	- -	- -	72.44	- -	- -	- -	- -
Ball tip steak	- -	- -	- -	- -	- -	- -	- -	- -	- -	64.36	- -
Ball tip steak, thin	- -	- -	- -	- -	- -	- -	- -	- -	- -	7.00	- -
Ground beef 81/19	- -	- -	15.21	4.57	2.46	5.54	3.73	.95	24.19	15.68	2.95
Beef for stew	- -	- -	4.34	- -	2.64	- -	- -	- -	- -	- -	- -
Beef cubes small	- -	- -	- -	- -	- -	- -	- -	- -	- -	4.15	- -
Cubes for kabobs	- -	- -	- -	- -	- -	- -	- -	7.05	14.07	6.55	6.95
Flap meat strips	- -	- -	- -	- -	- -	- -	- -	- -	25.93	- -	- -
Sirloin strips regular	- -	- -	- -	- -	- -	- -	- -	- -	24.07	- -	- -
Sirloin strips thin	- -	- -	- -	- -	- -	- -	- -	- -	11.16	- -	- -
Top sirloin steak, boneless	- -	- -	- -	- -	- -	- -	- -	73.71	- -	- -	- -
Tri-tip roast	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	20.86
Tri-tip steak	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	60.32
Fat	2.60	16.82	14.55	7.04	13.62	15.1	23.61	11.8	- -	1.04	8.15
Shrink	.30	.37	.12	.46	.35	.42	.22	.32	.58	.97	.14
Cutting loss	.14	.37	.31	.47	.17	.38	- -	.23	- -	.25	.63

See footnote at end of table.

--Continued

Appendix table 1--Retail Choice YG 3 beef cut yields used for retail cut yield determination--Continued

Retail cut	Tenderloin 189A	Flank steak 193	Out-skirt	In-skirt	Special trim	Trim 73/27	Trim 50/50	Short ribs	Back ribs	Pastrami	Shank meat
Subprimals as a % of carcass	1.47	0.45	0.47	0.44	1.83	2.15	13.7	0.85	1.01	1.27	2.72
					Retail as a percentage of wholesale cut						
50/50 trim to ground beef	- -	- -	- -	- -	- -	- -	100.00	- -	- -	- -	- -
Trimmings 73/27	- -	- -	- -	- -	- -	100.00	- -	- -	- -	- -	- -
Beef cube steak	- -	- -	11.36	- -	14.72	- -	- -	- -	- -	- -	- -
Ground beef 81/19	2.99	- -	9.83	10.88	32.92	- -	- -	- -	- -	- -	- -
Beef cubes small	- -	- -	- -	- -	4.26	- -	- -	- -	- -	- -	- -
Cubes for kabobs	8.72	- -	- -	- -	12.94	- -	- -	- -	- -	- -	- -
Tenderloin roast	31.13	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Tenderloin steak	35.37	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Tenderloin tips	4.23	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Beef flank steak cubed	- -	33.04	- -	- -	- -	- -	- -	- -	- -	- -	- -
Flank steak rolls	- -	31.98	- -	- -	- -	- -	- -	- -	- -	- -	- -
Flank steak scored	- -	34.45	- -	- -	- -	- -	- -	- -	- -	- -	- -
Beef skirt steak, boneless	- -	- -	41.45	63.46	- -	- -	- -	- -	- -	- -	- -
Skirt steak boneless, cubed	- -	- -	15.54	- -	- -	- -	- -	- -	- -	- -	- -
Beef strips thin	- -	- -	15.63	- -	6.44	- -	- -	- -	- -	- -	- -
Lifter braise strip	- -	- -	- -	- -	10.40	- -	- -	- -	- -	- -	- -
Beef for stew, lean	- -	- -	- -	- -	16.43	- -	- -	- -	- -	- -	- -
Beef short ribs	- -	- -	- -	- -	- -	- -	- -	41.89	- -	- -	- -
Short ribs BBQ	- -	- -	- -	- -	- -	- -	- -	16.79	- -	- -	- -
Short ribs flank on	- -	- -	- -	- -	- -	- -	- -	32.89	- -	- -	- -
Short ribs trim	- -	- -	- -	- -	- -	- -	- -	7.57	- -	- -	- -
Beef back ribs	- -	- -	- -	- -	- -	- -	- -	- -	99.7	- -	- -
Pastrami	- -	- -	- -	- -	- -	- -	- -	- -	- -	99.75	- -
Shank meat	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	99.75
Fat	16.69	- -	5.74	25.39	- -	- -	0	.36	- -	- -	- -
Shrink	.50	.26	.32	.18	1.71	- -	0	.14	.2	.25	.25
Cutting loss	.37	.27	.13	.09	.18	- -	0	.36	.1	- -	0

- - = Not applicable.
1/ Numbers in box heads are Institutional Meat Purchase Specifications (IMPS) item numbers developed and maintained by the United States Department of Agriculture, Agricultural Marketing Service to help identify meat products marketed.

of the wholesale cut. Appendix table 2 indicates boxed-beef and retail-beef basis yields. The boxed-beef basis weighting was determined by the same method except that the wholesale cut percentage of the total wholesale weight was used rather than the wholesale cut's percentage of carcass weight. Retail fabrication yield was determined by summing the retail cut weights across wholesale cuts.

Retail cut yields were used as weights for adjusting individual BLS retail cut prices. The calculation procedure weights 14 retail beef cuts and 50/50 lean beef trimmings to arrive at the composite Choice beef retail price. Retail beef cuts were grouped by: (1) BLS cut description, (2) whether the cut was a roast or steak, (3) cut's primal source, and (4) normal reported retail price level. This aggregation of retail cuts is provided in appendix table 3. Fifty-percent lean beef trimmings are priced at their value as an input for ground beef production.

BLS Price Use and Adjustment in Revised Procedures

Prices for Choice boneless chuck steak, loin steak, loin roast, sirloin roast, and rib roast are not available from BLS but were estimated from available BLS price series (app. table 4).

Using a regression estimating procedure (fig. 1), round steak prices were estimated as 97.4 percent of the price of round roasts plus 40.9 cents per pound. Only the round primal had available BLS Choice boneless prices for both roasts and steaks. The inverse procedure was used to derive the relative price of roasts from steaks. The relationship found between round steaks and round roasts was used to estimate the prices for chuck steak, loin roast, sirloin roast, and rib roast from the steak or roast price available from the same primal.

No boneless short loin steak prices are available from BLS. Thus, the T-bone steak price is adjusted to a boneless and more closely trimmed basis to estimate the boneless and tail-off loin steak price. Nutrient composition of food tables published by the USDA's Human Nutrition Information Service (HNIS), Agriculture Handbook Number 8-13, was used to determine the amount of bone and fat in T-bone steaks that is not present when strip loin or tenderloin steaks are fabricated.[1] T-bone steak has 19-percent bone and 23-percent separable fat. Boneless tenderloin has 18-percent separable fat. It is assumed that the short loin would have the same separable fat percentage as the tenderloin and that the additional separable fat of the T-bone was present only in the tail of the T-bone steak. The yield of tenderloin and strip steaks from the T-bone steak is therefore

[1]U.S. Department of Agriculture, Human Nutrition Information Service, Composition of Foods: Beef Products. Agriculture Handbook No. 8-13. 1986.

Appendix table 2--Retail cut yields

Retail cut	Boxed-beef basis	Retail-beef basis
	Percent	
Chuck roast	13.7694	15.2564
Chuck steak	3.7326	4.1358
Loin roast	.6083	.6740
Loin steak	5.0920	5.6420
Round roast	7.9370	8.7942
Round steak	10.8568	12.0293
Sirloin roast	.1913	.2120
Sirloin steak	7.7455	8.5820
Rib roast	2.1747	2.4095
Rib steak	2.1945	2.4315
Stew meat	2.7764	3.0762
Ground beef	6.4644	7.1626
Extra lean ground beef	6.0405	6.6928
50/50 contribution	18.2108	20.1775
Short ribs	2.4587	2.7242
Salable total	90.2529	100.0000
Fat, shrink, and cutting loss total	9.7471	- -
Wholesale total	100.0000	- -

- - = Not applicable.

calculated by subtracting the additional bone (19 percent) and fat (5 percent). The estimated yield of boneless product (strip steak plus tenderloin) is 76 percent. The loin steak price is calculated as the T-bone steak price divided by 76 percent. The loin steak price is then used to calculate the loin roast price according to the regression method outlined for steaks.

If appropriate BLS price information is released for additional cuts, it will be substituted for prices estimated by ERS. Revisions of this type may result in revision of previously reported ERS Choice retail beef prices.

Contribution of 50-Percent Lean Trimmings to Choice Beef Value

Ground beef is not sold in Choice beef carcass proportions in supermarkets. Fifty-percent lean trimming is a product obtained when fabricating Choice beef carcasses. Lean trimmings or

Appendix table 3--Aggregation of individual cuts for the calculation of Choice retail beef prices

Aggregate cut	Individual cut(s)		
Chuck roast	Brisket roast, pot	Brisket roast, flat	Shoulder pot roast
	Chuck pot roast	Chuck eye edge	Neck pot roast
	Shank cross cut	Top blade pot roast	- -
Chuck steak	Top blade steak	Underblade steak	Chuck eye steak
	Mock tender steak	Shoulder steak	London broil
Loin roast	Tenderloin roast	- -	- -
Loin steak	Toploin steak	Tri-tip steak	Tenderloin steak
	Tenderloin tips		
Round roast	Tip roast	Top round roast	Heel of round
	Bottom round rump	Eye of round roast	- -
Round steak	Beef cube steak	Tip steak	Top round steak
	Bottom round steak	Eye of round steak	
Sirloin roast	Tri-tip roast	- -	- -
Sirloin steak	Ball tip steak	Ball tip steak, thin	Flap meat strips
	Top sirloin steak	Sirloin strips, reg	Sirloin strips, thin
	Flank steak, cubed	Flank steak rolls	Flank steak, scored
	Beef strips, thin	Skirt steak	Skirt steak, cubed
	Lifter braise strip	Pastrami	
Rib roast	Ribeye roast	- -	- -
Rib steak	Ribeye steak	- -	- -
Stew meat	Beef for stew	Beef cubes, small	Cubes for kabobs
	Beef for stew lean		
Ground beef	Trimmings 73/27	Trimmings 50/50 1/	Shank meat
Extra lean Ground beef	Trimmings 81/19	- -	- -
Short ribs	Beef short ribs	Short ribs, BBQ	Short rib, flank on
	Short rib, special	Chuck short ribs	Beef back ribs

- - = Available space if another individual cut were to be listed under this aggregate cut.

1/ The value of the 50/50 trimmings is expressed as a proportion (represented by ingredient costs during manufacture) of the price of ground beef times the quantity of ground beef which could be manufactured with the 50/50 trim according to the stated procedure.

Appendix table 4--Revised calculation of retail Choice beef price, December 1989

Retail cut	Retail weight	Price description	Retail cut price	Retail contribution
	Percent		Cents per pound	Cents per pound
Chuck roast	15.25640	BLS published price for chuck roast	243.2	37.104
Chuck steak	4.13575	Estimated from BLS published price for chuck roast	(243.2*(97.43%)) + 40.9 = 277.8	11.489
Loin roast	.67398	Estimated from loin steak price	(663.3 - 40.9)/(97.43%) = 638.8	4.305
Loin steak	5.64195	Estimated from BLS published price for T-bone steak	504.1/(76%) = 663.3	37.423
Round roast	8.79418	BLS published price for round roast	278.4	24.483
Round steak	12.02933	BLS published price for round steak	316.8	38.109
Sirloin roast	.21199	Estimated from BLS published price for sirloin steak	(379.4 - 40.9)/(97.43%) = 347.4	.736
Sirloin steak	8.58200	Unpublished price from BLS for sirloin steak	379.4	32.560
Rib roast	2.40954	Estimated from unpublished price from BLS for ribeye steak	(602.8 - 40.9)/(97.43%) = 576.7	13.896
Rib steak	2.43151	Unpublished price from BLS for ribeye steak	602.8	14.657
Stew meat	3.07621	Unpublished price from BLS for stew meat	242.9	7.472
Ground beef	7.16258	BLS published price for regular ground beef	150.1	10.751
Extra lean ground beef	6.69281	Unpublished price from BLS for extra lean ground beef	203.9	13.647
50/50 trimmings	20.17754	Wholesale ingredient price ratio, BLS published price for ground beef, conversion for the salable yield of manufactured ground beef	(22.73%)(150.1)(2.35) = 80.2	16.182
Short ribs	2.72420	Unpublished price from BLS for short ribs	240.6	6.554
Salable total	99.99997			269.368 1/

1/ Total may not add to sum of the parts because of rounding.

Figure 1

Regression estimating procedure to obtain additional retail cut prices

A regression model was used to compare roast versus steak prices. BLS retail Choice beef price data were used for January 1984 to March 1989 to compare boneless round steak with boneless round roasts. The regression and results are as follows:

Regression equation

Boneless round steak ($/lb) $= \alpha + (\beta *$ boneless round roast ($/lb)$) + \epsilon$,

where α represents the intercept
β represents the coefficient for boneless round roast price, and
ϵ represents the error term.

Regression results

Boneless round steak ($/lb) = 0.408963 + (0.974348 * Boneless round Roast ($/lb))

Source	Degrees of freedom	Sum of squares	Mean square	F Value	Prob.>F
Model	1	0.61052	0.61052	292.816	0.0001
Error	61	.12719	.00209		
Total	62	.73771			

Root MSE 0.04566
R-square .8276

Parameter estimates

Variable	Degrees of freedom	Parameter estimate	Standard error	T for HO: parameter = 0	Prob >|T|
α	1	0.408963	0.14476884	2.825	0.0064
β	1	.974348	.05693991	17.112	.0001

The regression model was performed with PCSAS version 6.03 with the ANOVA (analysis of variance) procedure.

boneless beef from cows or imported meat is blended with Choice beef 50/50 trimmings to make ground beef. Fifty-percent lean trim is valued, according to its cost proportion, as an input into ground beef manufacture. Previously, these trimmings were adjusted, on paper, so a portion of the fat was removed from carcass trimmings (assumed to be 40-percent fat) to provide mixes of 28.6- and 20.0-percent fat and trim, which were respectively valued as regular ground beef and ground chuck. The revised procedure provides for trimmings produced with less than 73-percent lean to be valued as an input for ground beef manufacture. The relative value of the trimmings in manufactured ground beef is assumed to be equal or greater than when used in the manufacture of other further processed products.

Use of the total poundage of 50/50 trimmings as retail product rather than the fat-corrected poundage (previous method) results in the sale of proportionately more volume but less valuable cuts or items (ground beef ingredient). Therefore, the retail Choice beef price is reduced. This reduction is counterbalanced in the overall composite retail price by the price increase resulting from using closer fat-trimmed and more boneless retail cuts in the new procedure.

The proportion of ingredient costs borne by the 50/50 trimmings is related to the retail price of regular ground beef (73-percent lean). The methodology for the calculation of the value of 50-percent lean trimmings blends 50/50 (lean/fat percentage) and 90/10 trimmings at a ratio of 17:23, respectively, and uses wholesale prices published in the National Carlot Meat Report.[2] The procedure for calculating the contribution of 50-percent beef trimmings to the manufacture of ground beef for December 1989 was as follows:

Ingredient percent lean	AMS published wholesale price	Proportion of mixture by weight	Wholesale per unit cost	Percent of ingredient cost
Percent	Cents per pound	Percent	Cents per pound	Percent
50	56.00	17/40 = 42.5%	23.80	22.73
90	140.70	23/40 = 57.5%	80.90	77.27
Total			104.70	100.00

[2]U.S. Department of Agriculture, Agricultural Marketing Service. National Carlot Meat Report. Published daily by volume (year) and No. (day). For Dec. 1989, Vol. 4, No. 5, 334-365.

Retail value of 50/50 trimmings is calculated as the product of: (1) the percent of wholesale ingredient cost for blending with 90-percent lean trimmings to manufacture regular ground beef (22.73 percent), (2) the retail price of regular ground beef ($1.501 per pound), and (3) the conversion factor of (40/17 = 2.35) determines the amount of manufactured ground beef which can be made from 1 pound of 50/50 trimmings, that is, total pounds of salable manufactured ground beef per pound of 50/50 lean trimmings.

The percentage of total ingredient cost contributed by the 50/50 trimmings will change from month to month along with the changing wholesale price relationship between 50/50 and 90/10 trimmings. A relative wholesale value change affects only the portion of the retail price received for the ground beef manufactured using the 50/50 trimmings. The quantity of manufactured ground beef will remain constant unless industry cutting procedures and tests change appreciably.

How the Revised Composite Retail Price is Calculated

Ten BLS retail cut prices are used to calculate the retail price. As explained earlier, four more cut prices and the 50/50 trimmings contribution price are also used. These 15 prices are weighted by the 15 retail-beef category weights provided in appendix table 2 to calculate the composite retail Choice beef price. In appendix table 2, the first column provides the yields obtained on a wholesale-boxed beef basis, while the second column provides percentages on a retail-weight basis. The retail weights are the basis for retail price calculation. Appendix table 4 illustrates how the weighting factors, BLS prices, and BLS price adjustments such as steaks versus roasts and 50/50 trim are used to calculate the revised retail price.

The value contribution of each retail cut to the new composite Choice beef price will be calculated as the product of the retail cut weight and its reported BLS (or ERS-estimated) retail price. The new composite Choice beef retail price then is calculated as the sum of the retail cuts' value contributions. An example of the calculation of the December 1989 price is presented in appendix table 4.

Appendix tables 4 and 5 present the revised and previous methods and can be compared in regard to cuts and weights used for retail price calculation. Only two BLS cut prices used in the previous method are used directly in the revised method (round roast, boneless, and round steak, boneless). The derived retail price, using the revised method, is lower because the effect of 50/50 trim valuation, which caused a decline in price, is greater than the effect of using more boneless and closely trimmed cuts, which caused an increase in price. Advantages of using the new method are: (1) more retail cut prices are used, (2) a derived 50/50

Appendix table 5--December 1989 retail price calculation, previous method

Choice retail cut	ERS weighting	Published price	BLS cut contribution to retail price	
	Percent	Cents per pound		Percent
Ground chuck, 100% beef	29.5	188.0	55.46	20.21
Chuck roast, bone-in	14.1	200.5	28.27	10.30
Round roast, boneless	14.4	278.4	40.09	14.61
Rib roast, bone-in	7.5	420.7	31.55	11.50
Round steak, boneless	10.3	316.8	32.63	11.89
Sirloin steak, bone-in	6.9	346.2	23.89	8.71
Chuck steak, bone-in 1/	7.6	182.6	13.88	5.06
T-bone steak, bone-in	4.7	504.1	23.69	8.63
Porterhouse steak, bone-in 1/	5.0	498.8	24.94	9.09
Total	100.0		274.40	100.00

1/ The prices for porterhouse steaks and bone-in chuck steaks have not been available from the Bureau of Labor Statistics (BLS) recently because of the below-minimum number of reported price quotes. The prices of these cuts have been derived by the Economic Research Service using the BLS published prices and the Consumer Price Index for beef and veal from month to month.

Source: Unpublished ERS worksheets.

lean trimming ingredient value is used, (3) carcass proportions are adjusted by using the total weight of 50/50 trimmings, (4) calculation of prices is based on more boneless and closer trimmed retail cuts (the current industry practice), and (5) retail procedures are updated to more nearly reflect current carcass proportions.

How the Retail Price Being Replaced was Calculated

For the period May 1981 to July 1990, the ERS Choice retail price was calculated as a weighted average of nine BLS Choice retail beef cut prices (app. table 5). The weights used for the nine retail beef cuts (available from BLS beginning in January 1980) were estimated as near to carcass proportions as possible while overlapping with the previous retail price series. The weightings were, however, adjusted so that the results maintained

the same general price level and averaged near the previous 17 months (January 1980 to May 1981) of published data. Data for the series used during 1978-81 were collected by ERS, and the series was in carcass proportions. Appendix table 5 is an example of the retail price calculation procedure used from May 1981 to July 1990 using December 1989 data.

The advantages of using BLS prices in the previous procedure were mainly data availability and reliability. The disadvantages were that the ERS weights used are 9 years old and many changes have occurred in the industry to potentially nullify the assumption that the weights still represent a composite retail price reflecting carcass proportions.

Appendix C--Wholesale Price

More beef carcasses are cut into smaller pieces earlier in the marketing channel in the 1990's than was the case in the 1960's. Over 90 percent of steer and heifer beef is traded at the wholesale level as boxed beef rather than as hanging carcasses. Because fewer carcasses are traded at the wholesale level, carcass price series are becoming fewer and less reliable, particularly for fed steer and heifer carcasses. AMS discontinued its steer and heifer carcass series on June 29, 1990. As a result of the constant changes of the beef industry, an analysis of methods and procedures for reporting retail prices and price spreads for beef was conducted in 1987 by an ERS task force[3]. This report and various observers of the beef industry (including a USDA-ERS advisory unit, the Beef Industry Users Group (BIUG)) have stressed the need to change the wholesale value in the price spreads from a carcass to a boxed-beef value.

A special article published in the Livestock and Poultry Situation and Outlook (L&PS), outlined the development of a Choice boxed-beef wholesale value series for eventual use in the Choice beef price spread series[4]. This proposed Choice beef price spread revision used the AMS boxed-beef cutout series, available in 1988, to develop the wholesale value. Current proposals differ somewhat from those in the August 1988 (L&PS) article because of a change in the available data (that is, AMS boxed-beef cutout value) and a change regarding how 50-percent trim is valued at retail.

---

[3]U.S. Department of Agriculture, Economic Research Service. Issues and Options Related to the Reporting and Analysis of Retail Prices and Price Spreads for Beef. Staff Report No. AGES871102, Jan. 1988.

[4]U.S. Department of Agriculture, Economic Research Service. "Choice Boxed Wholesale Value Series," Livestock and Poultry Situation and Outlook Report. LPS-31, Aug. 1988.

Boxed-Beef Cutout Value as the Revised Wholesale Price

AMS's composite boxed-beef cutout value is based upon weighted averages, reflecting the value of major, minor, and byproduct wholesale products from a carcass. The composite boxed-beef cutout value is calculated twice daily (11:15 a.m. and 3:00 p.m.) as the AMS Estimated Composite of Boxed Beef Cutout Values and published daily (3:00 p.m.) in the National Carlot Meat Report and as a weekly average value in the weekly Livestock Meat Wool Market News.[5] AMS revised its boxed-beef cutout values on January 2, 1990, for light (550-700 pound) and heavy (700-850 pound), Choice and Select carcasses. The Choice 550-700 pound composite boxed-beef series is used for price spread calculations because this carcass type most nearly represents beef merchandised in the retail marketplace. This is becoming somewhat less typical, however, as average slaughter weights increase due to the trend to larger, faster growing cattle. Retailers and consumers are also willing to accept meat from heavier cattle when it is boneless and closely trimmed or offered in smaller subprimals. The heaviest carcasses still are more likely to be sold through food service channels.

The new method employed by AMS (since January 2, 1990) values the animal according to the primal portions: chuck, rib, loin, round, brisket, navel, and flank. Each of the seven composite prices (one price for each primal) is based upon the weighted average value of the trades made during the last 2-day period test for wholesale cuts within that primal. The AMS boxed-beef cutout value is reported as value per hundredweight of beef carcass.

ERS adjusts the boxed-beef value for fat, bone, and kidney (the wholesale fabrication byproducts) not sold at retail. The boxed-beef value is also adjusted by a transportation differential, before it is converted to a retail-pound-equivalent basis.

Wholesale Boxed-Beef Byproduct Credit Adjustment

The wholesale boxed-beef byproduct adjustment accounts for the value of bone, fat, and kidney, previously sold as a part of the carcass. The bone and fat byproduct credits are estimated from prices for meat and bone meal and edible tallow, quoted in the AMS Estimated Hide and Offal Value Report. Wholesale kidney prices are obtained directly from AMS. This portion of the byproduct credit value (which will later be combined with the AMS reported hide and offal value) is based upon yields of bone (11.87 percent), fat (9.67 percent), and kidney (0.18 percent) from a carcass (the remainder, 78.28 percent, being boxed beef).

---

[5]U.S. Department of Agriculture, Agricultural Marketing Service. Livestock Meat Wool Market News. Published weekly by volume (year) and No. (week). 1990 is Volume 58.

The total byproduct credit from the fabrication of a carcass to boxed beef is derived by summing the yield of fat, bone, and kidney times their respective wholesale prices.

Transportation Adjustment to the Boxed-Beef Price

A transportation differential is added to the AMS beef cutout value to reflect the average transportation cost of moving beef from Omaha (location of the wholesale price quoted by AMS) to major metropolitan areas where the beef is consumed. This provides an average U.S. wholesale price delivered to the city where consumed. Calculation of the transportation differential is based on three sets of data: (1) a series of freight rates from AMS providing the per unit cost of transporting meat from Omaha to about 100 locations in the United States, (2) population estimates by State from the census, and (3) relative consumption by people residing in four regions of the United States from the USDA Nationwide Food Consumption survey.[6]

The truck freight rate is estimated for each contiguous State using the AMS data to cities and States, or is estimated on a comparable-rate-mileage basis. In some cases, a subjective rate was estimated using the freight rates to parts of the State and a knowledge of population distribution within the State. The product of freight rate for each region, the population of the region, and the relative beef consumption weight for the region are calculated. The products are then summed over all regions and divided by the product of population and consumption. This provides the U.S. weighted average transportation differential. This transportation differential is $3.49 per hundredweight of boxed beef (on a wholesale-weight basis). This differential was $3.71 during 1988. Revisions will be made when necessary (at least annually), based upon changes in fuel costs and other factors which affect transportation costs. Availability of data is the primary advantage of the new transportation procedure, providing more accurate reflections of the beef sector.

Carcass Price as the Wholesale Value

Beginning in 1978, ERS derived the wholesale carcass price as a weighted average of Choice Yield Grade 3 carcass prices in five geographical regions (East Coast, Colorado, Midwest, Amarillo area, and Los Angeles) as published by AMS. Until recently, AMS reported Choice Yield Grade 3, 600-700 pound steer carcasses for the central United States. AMS discontinued steer and heifer carcass price reporting on June 29, 1990. This required a change in price spread procedures. Previously, when carcass prices were

---

[6]U.S. Department of Agriculture, Human Nutrition Information Service. Food Consumption: Households in the United States, Seasons and Year 1977-78, Report No. H-6, June 1983.

no longer reported for a region, that region's price was estimated. The regional weights used reflected regional beef consumption.

The carcass price was used to obtain a gross carcass value which was adjusted by a byproduct value to obtain the Choice beef net carcass value.

Carcass Byproduct Adjustment

Historically, a byproduct credit value, based upon the percentage of total carcass value, for the trimmable fat and bone removed when selling all parts of a carcass at retail was used. This credit was calculated in four steps. First, the value of the trimmable fat and bone was calculated at the retail level (based upon 75 percent of the value of fat and bone if it had been sold at the wholesale level). Second, the retail meat value of the carcass was found (retail beef price multiplied by the portion of the carcass sold as retail beef). Third, a ratio of the trimmable fat and bone value at the retail level to the total value of the carcass at the retail level (trimmable fat and bone plus retail meat value) was calculated. Finally, the carcass byproduct value was calculated as the product of the gross carcass value and the ratio of the trimmable fat and bone value to the total retail value of the carcass.

Appendix D--Live-Steer Price

The trend toward more slaughter cattle being sold directly to packers rather than at terminal markets continues. ERS adopted the more descriptive live cattle price series that AMS began reporting in 1989. This series represents the market price of the majority of slaughter cattle rather than an average price for eight selected markets.

The AMS Five-Region Weighted Average Steer Price

Data for five direct live markets collected and published by AMS provides price series for both steer and heifer sales. Weighted average live weights for cattle sold on both live and carcass bases are available. The AMS price for 65- to 80-percent Choice slaughter steers sold on a live-weight basis is used. This price represents the greatest volume of slaughter cattle marketed. This market price for the weighted average of live steers will replace the eight-market average price.

Retail Byproduct Adjustment

The value of fat and bone removed at retail grocery outlets is no longer calculated. The value of the byproducts obtained during retail cut fabrication from wholesale cuts is small. Retail

stores likely do not have enough volume to render these byproducts, and the transportation cost to a renderer is relatively high compared with the value of the fat and bone. Thus, no byproduct credit is given to wholesale-to-retail byproducts. Previously, a carcass byproduct allowance was calculated.

Live-Steer Byproduct Credits

The slaughter byproduct value, as in the previous Choice beef price spread series, is based on the AMS hide and offal value published daily in the Daily Estimated Hide/Offal Value Report and weekly in the Livestock Meat Wool Market News. The hide and offal value is calculated as the sum of the average value of the slaughter byproducts of a Choice steer. Byproducts include hide, tallow, tongue, cheek and head meat, oxtail, heart, lips, liver, tripe, lungs, melts, meat and bonemeal (rendered meat scraps and bone), and blood meal. The hide and offal value is reported on a dollars per live animal hundredweight basis.

Calculating the Live-Steer Byproduct Adjustment

Total value of a steer is the summation of retail meat cut values and all byproduct credits produced during slaughter and wholesale cut fabrication. The total live-steer byproduct credit adjustment is expressed on a live-weight basis.

The new price spread byproduct adjustment procedure is based upon boxed beef rather than the carcass, as used previously. Byproducts produced during fabrication are assumed to be removed at the packing plant and reported as part of the farm-to-wholesale byproduct credit rather than as a wholesale-to-retail byproduct credit.

Previous Live Price Series

ERS previously used an average of eight AMS markets for slaughter cattle, a simple average of cattle prices at four terminal markets (Omaha, Sioux Falls, Sioux City, and south St. Paul) and four direct markets (Iowa, Texas, Colorado, and California). The eight-market price did not reflect volume differences between direct and terminal markets. Prices for these eight markets were reported weekly and their average was the most representative series in 1978 when the price spread procedures were last changed.

Appendix E--Conversion Factors Used in Calculating Choice Beef Prices and Spreads

The Choice retail beef prices and spreads series are based on the value of 1 pound of beef at retail, wholesale, and live animal

marketing levels. Conversion factors between various processing stages are necessary to express the value of 1 pound of retail beef at each level. The conversion factors are calculated on the basis of yields as the live animal is converted into retail cuts.

Retail Cuts to Purchased Meat

The difference between retail cuts produced and those sold is a result of spoilage, rewraps, conversion to other cuts, and theft. The retail cut-to-purchased meat conversion factor is 97 percent. Thus, 1.031 pounds (1 divided by 0.97) of retail cut production are necessary to provide 1 pound of purchased Choice beef. The retail shrink factor is considered when estimating the retail price. This retail shrink factor was decreased from 5 percent (previous) to 3 percent (revised) because boxed beef allows for buying cuts closer to the proportions of expected sales, reducing spoilage, rewraps, conversion to other cuts, and theft. Better security methods also likely have reduced pilferage.

For subsequent discussion, retail weight will be used to describe that retail meat sales weight after being corrected for a 3-percent retail shrink. See figure 2 to examine the effect of retail shrink on the conversion factor and edible beef per steer.

Retail Level

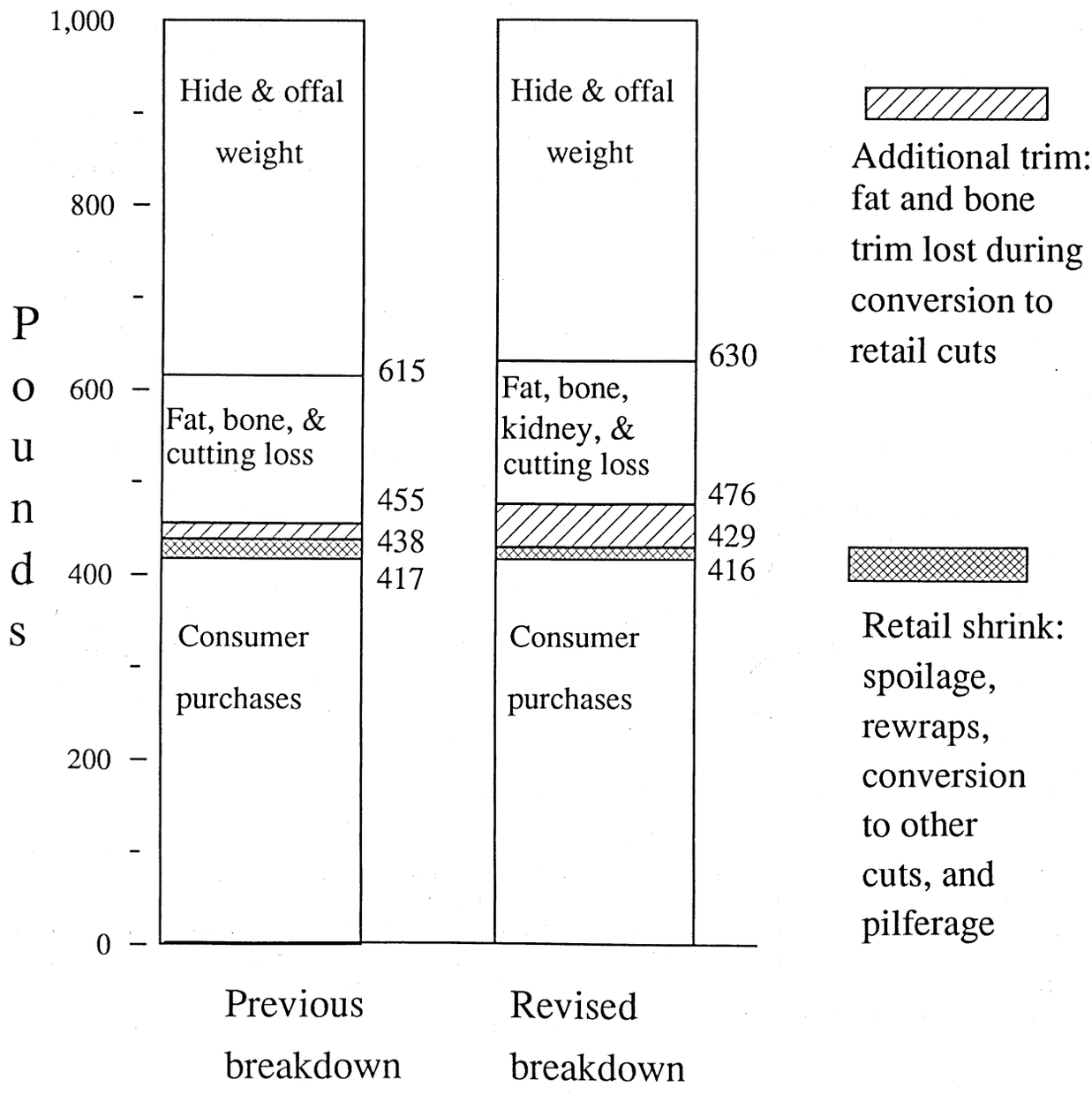
One pound of retail beef is the basis for the Choice beef price spread series; therefore, no conversion factor is necessary at the retail price reporting level. The retail-meat-equivalent basis is used because it identifies the spreads, or value added, better than either the live or wholesale basis. Retail meat yields can be determined at each pricing level, and the Choice retail beef price is easily obtained. Conversion factors can be used to adjust retail meat value to a live- or wholesale-weight basis. In recent years, price spreads have been published only on a retail-weight basis. However, a few individuals still request values on live and wholesale bases.

Wholesale Boxed Beef to Retail Cuts

The retail cut yield from wholesale boxed beef is 90.253 percent. The yield difference between wholesale boxed beef and retail cuts is 9.747 percent, which represents fat, shrink, and cutting loss (see app. tables 2 and 6). The conversion between boxed beef and retail cuts is calculated by dividing 1 by the retail cut yield (1/90.253 percent) or 1.108. Thus, 1.108 pounds of wholesale boxed beef are necessary to provide 1 pound of retail cuts.

Figure 2.

Previous and revised breakdowns of live 1,000 lb. Choice steer into retail product and other components



Appendix table 6--Beef conversion factors

Market levels	Conversion factor to next level	Pounds to yield 1 pound of purchased retail beef	Pounds to yield 1 pound of wholesale boxed beef	Pounds to yield 1 pound of carcass beef
One pound of purchased retail beef	1.000	1.000	- -	- -
Retail cuts	1.031	1.031	- -	- -
Wholesale boxed beef	1.108	1.142	1.000	- -
Carcass	1.325	1.513	1.325	1.000
Live animal	1.587	2.402	2.103	1.587

- - = Not applicable.

Carcass to Retail Cut, Bone Equivalent, Wholesale Boxed Beef

Retail prices are based on boneless cuts (except for the short and back ribs). The wholesale cuts used by AMS are both bone-in and boneless. Therefore, the percentage of bone sold at the wholesale level is estimated and accounted for when converting wholesale to retail beef.

Wholesale cutting tests from AMS were used to estimate the amount of bone sold at the wholesale level. The estimated weight of bone sold at the wholesale level accounts for the reported volume of trades for bone-in and boneless wholesale cuts. ERS estimates the proportion of bone currently sold at wholesale to be 2.955 percent of the carcass weight.

Composition of food tables are used to determine the amount of bone present in the retail short and back rib cuts. This is estimated to be 0.51 percent of the carcass weight.[7] Thus, bone removed between wholesale and retail sale is estimated by ERS as 2.445 percent (2.955 minus 0.51 percent) of the carcass weight.

Bone-in Equivalent Wholesale Cut Yield

Wholesale yield of beef cuts was estimated from AMS cutting tests at 77.925 percent and byproducts at 22.075 percent of carcass weight. These byproducts can be separated into fat (9.674

[7]U.S. Department of Agriculture, Human Nutrition Information Service, Composition of Foods: Beef Products. Agriculture Handbook No. 8-13. 1986.

percent), bone (11.866 percent), kidney (0.178 percent), and shrink and cutting loss (0.356 percent).

Yield of the wholesale cuts must be calculated on a retail-cut, bone-equivalent basis (the amount of bone assumed sold at retail) for price spread purposes. The price of wholesale cuts should not reflect proportionately more bone when the conversion of wholesale to retail cuts is estimated. The retail-cut, bone-equivalent wholesale cut yield from the carcass was estimated as 75.481 percent after accounting for the fat, bone, kidney, and shrink and cutting loss produced during wholesale cut fabrication (22.075 percent). The amount of bone sold at wholesale which is not present in the fabricated meat cuts used by ERS is 2.445 percent. The conversion factor between the carcass and boxed beef on a bone equivalent as at retail basis is calculated as 1 divided by 75.481 percent which is 1.325. Thus, 1.325 pounds of carcass are necessary to provide 1 pound of wholesale boxed beef on a retail-equivalent basis.

Live Animal to Carcass

Industry, academic, and USDA inputs were used to estimate carcass yield from a live animal. After review, the dressing percentage has been revised upward to 63 percent of live weight from the previous dressing percentage of 61.5 percent. This means that 63 percent of a live animal's weight is beef carcass, while the remaining 37 percent is byproducts--hide, gut fill, and offal. The reciprocal of carcass yield (1/0.63), 1.587, equals the pounds of live animal necessary to provide 1 pound of carcass.

Use of Conversion Factors

Conversion factors are used to estimate the weight of product at any level from live animal to retail cuts which will yield 1 pound of retail meat. The conversion factors must be multiplied in succession for these calculations. Use of the conversion factors is demonstrated in appendix table 6. The examples in appendix table 6 imply that 2.402 pounds of live animal weight are necessary to produce 1 pound of purchased retail Choice beef and that 2.103 pounds of live animal weight are necessary to produce 1 pound of boxed beef. These conversion factors can be used to estimate the product yield between any two levels in the market channel.

Appendix F--Revision of Historical Data

When beef price spreads were revised in the past, price spread data for previous years also were revised to make it as consistent as possible with the new series.

Price spreads are designed to provide data for a constant, or at least very similar, product over time. Thus, a change in the spreads from an earlier period should reflect a change in industry costs and returns or structure rather than a change in the product or services being valued in the computations.

The historical data provided in appendix table 7 are based on the assumptions listed below and provided only for those people who would like a reasonably accurate historical revision. Some people with specific uses (that is, econometric procedures) may prefer to use the previous series or develop their own historical series.

Assumptions Used

The first assumption imposed is that the five-region direct price, published by AMS, used in the revised series replaces the eight-market price with no adjustments needed in the past. After comparing the overlap period and talking with AMS personnel knowledgeable about the data, we decided to shift to the five-market series from the eight-market series during April 1989 without adjustment. In other words, the two series seemed to be at the same level at that point.

The second assumption is that the AMS boxed-beef value for Choice 550-700 pound carcasses did not need to be adjusted between 1989 and 1990 data when AMS changed its procedures. A comparison indicated very little change in the price level between the two AMS procedures.

The adjustment ratio of 0.983 was derived for 1989 by dividing the average revised retail price by the previous procedures average retail price. This ratio obtained for 1989 was used to adjust all previously published data to revised procedure levels for 1970 through 1988. This moves the revised 50/50 trim procedure as well as the closer trim and more boneless cuts effects back into the historical period. While the product may have been different (more fat and bone) 10 years ago, we want to assume the same product as now for comparative purposes.

Similarly, a ratio of 1.101 was obtained when revised wholesale prices were placed over previous prices for 1989. The 1.101 ratio was used to revise the historical wholesale (carcass) values back to 1970. Use of this ratio allows a comparison of the approximate cost of boxed beef historically with the current boxed-beef value. The previous series wholesale value was based on carcass values.

By moving more cutting back to the packing plant and the revised method of handling 50/50 trim, less fat and bone were available for sale at the retail level and the wholesale to retail level byproduct value was discontinued. Changing the method of

handling 50/50 trim also means less total fat byproduct. Thus, while the gross farm value remains the same, the byproduct (and net farm value) changes. Again using the revised over previous ratio for 1989, the historical byproduct values were adjusted. The byproduct value ratio was 0.960. The new net farm value is merely the previous gross farm value minus the revised byproduct value.

The question of whether to use the year 1989 or to extend the ratio base period to all available data (17 months or through May 1990) was examined. The ratios obtained for the two time periods were quite similar. The 12-month period was selected to avoid possible seasonality factors.

Effects of Other Changes

A number of other changes were made that are not mentioned in the assumptions required to estimate the historical series. Some of these are handled by the assumptions made because the ratios cover all the changes affecting the price or value ratioed. For instance, the changes in the particular BLS cuts used, the way the missing cuts were estimated, and the rather rapid shift to closer fat trimming in 1986-88 are all covered in the ratio to reflect the current (revised) situation historically.

The fact that the farm-to-retail conversion factor remained the same in the revised as in the previous procedures did not require a ratio assumption. The change in dressing percentage (more beef per 100 pounds live weight) was offset by the closer fat trim and more boneless cuts. In fact, the fat trimming and boneless cuts also has to offset the 50/50 trim method's salable yield increase.

Regardless, the method and assumptions used to develop the historical series were outlined so readers can determine if they want to use this historical series, use the previous series, or develop their own historical series.

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow-ance 5/	Net farm value 6/	Farm-retail spread			Farmers' share 7/
						Total	Wholesale -retail	Farm -whlsle	
	Cents per retail pound								Percent
1970:									
Jan.	98.5	75.9	67.4	6.0	61.4	37.1	22.6	14.5	62
Feb.	98.3	75.6	69.8	6.4	63.4	34.9	22.7	12.2	64
Mar.	100.6	79.9	74.0	6.5	67.5	33.1	20.7	12.4	67
Apr.	101.1	79.2	73.4	6.5	66.9	34.2	21.9	12.3	66
May	100.7	76.6	70.9	6.2	64.7	36.0	24.1	11.9	64
June	99.8	78.2	72.5	6.0	66.5	33.3	21.6	11.7	67
July	102.0	81.5	74.1	5.9	68.2	33.8	20.5	13.3	67
Aug.	101.7	79.1	71.7	6.0	65.7	36.0	22.6	13.4	65
Sept.	100.2	76.8	70.4	6.0	64.4	35.8	23.4	12.4	64
Oct.	99.3	74.6	69.1	6.1	63.0	36.3	24.7	11.6	63
Nov.	99.1	73.1	65.6	5.8	59.8	39.3	26.0	13.3	60
Dec.	98.0	71.5	64.1	5.3	58.8	39.2	26.5	12.7	60
Total	99.9	76.8	70.2	6.0	64.2	35.7	23.1	12.6	64
1971:									
Jan.	98.8	78.9	68.1	5.1	63.0	35.8	19.9	15.9	64
Feb.	102.9	84.0	76.1	5.9	70.2	32.7	18.9	13.8	68
Mar.	104.0	83.2	75.5	6.0	69.5	34.5	20.8	13.7	67
Apr.	105.8	85.2	76.9	6.1	70.8	35.0	20.6	14.4	67
May	106.8	87.2	77.7	6.1	71.6	35.2	19.6	15.6	67
June	107.6	85.2	76.7	6.0	70.7	36.9	22.4	14.5	66
July	106.8	84.9	76.7	5.9	70.8	36.0	21.9	14.1	66
Aug.	107.7	87.0	78.4	5.9	72.5	35.2	20.7	14.5	67
Sept.	108.0	85.2	77.1	6.0	71.1	36.9	22.8	14.1	66
Oct.	107.2	83.6	76.5	6.0	70.5	36.7	23.6	13.1	66
Nov.	108.5	87.3	79.4	6.1	73.3	35.2	21.2	14.0	68
Dec.	110.8	90.4	81.0	6.2	74.8	36.0	20.4	15.6	68
Total	106.2	85.2	76.7	6.0	70.7	35.5	21.0	14.5	67
1972:									
Jan.	114.0	93.0	84.1	6.6	77.5	36.5	21.0	15.5	68
Feb.	118.4	93.1	85.4	7.0	78.4	40.0	25.3	14.7	66
Mar.	118.5	89.2	83.3	8.1	75.2	43.3	29.3	14.0	63
Apr.	114.6	87.2	82.1	8.5	73.6	41.0	27.4	13.6	64
May	114.1	91.5	85.0	8.5	76.5	37.6	22.6	15.0	67
June	116.3	96.0	89.8	8.7	81.1	35.2	20.3	14.9	70
July	120.2	95.1	90.3	9.2	81.1	39.1	25.1	14.0	67
Aug.	118.7	88.6	84.2	9.8	74.4	44.3	30.1	14.2	63
Sept.	115.9	86.6	82.9	9.9	73.0	42.9	29.3	13.6	63
Oct.	115.8	86.2	83.5	10.9	72.6	43.2	29.6	13.6	63
Nov.	115.4	83.7	80.8	10.8	70.0	45.4	31.7	13.7	61
Dec.	117.8	93.1	88.4	10.1	78.3	39.5	24.7	14.8	66
Total	116.6	90.3	85.0	9.0	76.0	40.6	26.3	14.3	65

See footnotes at end of table.

--Continued

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/--Continued

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow- ance 5/	Net farm value 6/	Farm-retail spread			Farmers' share 7/
						Total	Wholesale -retail	Farm -whlsle	
	Cents per retail pound								Percent
1973:									
Jan.	125.5	102.0	97.2	10.8	86.4	39.1	23.5	15.6	69
Feb.	134.0	108.1	103.6	11.8	91.8	42.2	25.9	16.3	69
Mar.	139.3	112.0	108.5	11.7	96.8	42.5	27.3	15.2	69
Apr.	140.0	112.5	107.2	11.5	95.7	44.3	27.5	16.8	68
May	140.1	111.8	109.6	12.4	97.2	42.9	28.3	14.6	69
June	139.6	114.4	112.1	12.9	99.2	40.4	25.2	15.2	71
July	140.6	115.8	115.2	13.8	101.4	39.2	24.8	14.4	72
Aug.	148.7	126.3	129.3	14.0	115.3	33.4	22.4	11.0	78
Sept.	149.5	115.1	109.1	12.5	96.6	52.9	34.4	18.5	65
Oct.	140.4	104.6	99.4	11.7	87.7	52.7	35.8	16.9	62
Nov.	139.4	101.7	96.0	11.6	84.4	55.0	37.7	17.3	61
Dec.	138.9	105.4	95.0	10.9	84.1	54.8	33.5	21.3	61
Total	139.7	110.8	106.8	12.1	94.7	45.0	28.9	16.1	68
1974:									
Jan.	147.8	121.0	114.8	12.5	102.3	45.5	26.8	18.7	69
Feb.	155.1	122.8	111.5	11.6	99.9	55.2	32.3	22.9	64
Mar.	147.2	108.8	102.2	10.9	91.3	55.9	38.4	17.5	62
Apr.	141.2	107.3	100.0	10.3	89.7	51.5	33.9	17.6	64
May	139.9	107.9	97.9	9.3	88.6	51.3	32.0	19.3	63
June	136.9	101.8	91.4	8.4	83.0	53.9	35.1	18.8	61
July	143.0	116.8	106.6	9.7	96.9	46.1	26.2	19.9	68
Aug.	148.7	120.4	114.8	10.9	103.9	44.8	28.3	16.5	70
Sept.	147.0	108.7	100.3	9.4	90.9	56.1	38.3	17.8	62
Oct.	142.0	105.5	96.4	8.7	87.7	54.3	36.5	17.8	62
Nov.	139.7	101.4	92.1	8.0	84.1	55.6	38.3	17.3	60
Dec.	137.3	98.9	90.0	7.3	82.7	54.6	38.4	16.2	60
Total	143.8	110.1	101.5	9.7	91.8	52.0	33.7	18.3	64
1975:									
Jan.	138.1	100.3	88.9	6.9	82.0	56.1	37.8	18.3	59
Feb.	134.2	95.6	85.2	6.5	78.7	55.5	38.6	16.9	59
Mar.	132.2	97.5	88.4	7.3	81.1	51.1	34.7	16.4	61
Apr.	139.4	114.3	105.0	8.8	96.2	43.2	25.1	18.1	69
May	154.0	130.9	120.4	9.5	110.9	43.1	23.1	20.0	72
June	164.5	139.2	127.5	9.9	117.6	46.9	25.3	21.6	71
July	167.9	135.2	123.2	10.3	112.9	55.0	32.7	22.3	67
Aug.	162.2	126.7	113.8	10.2	103.6	58.6	35.5	23.1	64
Sept.	159.5	129.3	117.4	10.3	107.1	52.4	30.2	22.2	67
Oct.	159.1	123.1	114.4	10.4	104.0	55.1	36.0	19.1	65
Nov.	158.0	118.6	108.6	10.1	98.5	59.5	39.4	20.1	62
Dec.	157.4	119.3	110.0	9.8	100.2	57.2	38.1	19.1	64
Total	152.2	119.2	108.6	9.2	99.4	52.8	33.0	19.8	65

See footnotes at end of table.

--Continued

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/--Continued

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow- ance 5/	Net farm value 6/	Farm-retail spread			Farmers' share 7/
						Total	Wholesale -retail	Farm -whlsle	
	Cents per retail pound								Percent
1976:									
Jan.	155.4	109.9	99.5	9.5	90.0	65.4	45.5	19.9	58
Feb.	149.2	102.1	93.4	8.9	84.5	64.7	47.1	17.6	57
Mar.	141.5	94.1	87.3	8.6	78.7	62.8	47.4	15.4	56
Apr.	148.6	109.0	105.1	11.4	93.7	54.9	39.6	15.3	63
May	148.5	104.4	98.6	10.9	87.7	60.8	44.1	16.7	59
June	147.5	103.2	97.8	10.7	87.1	60.4	44.3	16.1	59
July	145.0	96.0	91.1	10.1	81.0	64.0	49.0	15.0	56
Aug.	142.4	94.6	89.6	9.9	79.7	62.7	47.8	14.9	56
Sept.	141.0	94.9	89.0	9.9	79.1	61.9	46.1	15.8	56
Oct.	140.2	96.3	91.0	10.2	80.8	59.4	43.9	15.5	58
Nov.	142.6	100.5	94.5	9.3	85.2	57.4	42.1	15.3	60
Dec.	146.0	103.5	96.4	9.9	86.5	59.5	42.5	17.0	59
Total	145.7	100.7	94.4	10.0	84.4	61.3	45.0	16.3	58
1977:									
Jan.	144.6	99.1	91.9	10.8	81.1	63.5	45.5	18.0	56
Feb.	141.6	97.5	91.5	10.8	80.7	60.9	44.1	16.8	57
Mar.	140.3	94.6	90.3	11.6	78.7	61.6	45.7	15.9	56
Apr.	141.1	100.1	97.2	12.6	84.6	56.5	41.0	15.5	60
May	145.9	105.7	101.3	12.3	89.0	56.9	40.2	16.7	61
June	144.8	103.3	97.2	11.2	86.0	58.8	41.5	17.3	59
July	145.9	104.4	98.6	11.1	87.5	58.4	41.5	16.9	60
Aug.	146.9	102.5	96.1	11.1	85.0	61.9	44.4	17.5	58
Sept.	146.7	103.4	97.2	11.0	86.2	60.5	43.3	17.2	59
Oct.	149.4	108.4	101.8	11.0	90.8	58.6	41.0	17.6	61
Nov.	149.9	108.1	101.0	11.3	89.7	60.2	41.8	18.4	60
Dec.	153.1	111.8	104.0	11.4	92.6	60.5	41.3	19.2	60
Total	145.8	103.2	97.3	11.3	86.0	59.8	42.6	17.2	59
1978:									
Jan.	156.8	112.4	104.7	11.8	92.9	63.9	44.4	19.5	59
Feb.	159.0	116.5	108.5	11.9	96.6	62.4	42.5	19.9	61
Mar.	164.2	122.7	118.1	12.6	105.5	58.7	41.5	17.2	64
Apr.	173.0	133.2	127.5	13.0	114.5	58.5	39.8	18.7	66
May	182.7	144.8	139.2	13.7	125.5	57.2	37.9	19.3	69
June	191.9	141.3	134.6	14.1	120.5	71.4	50.6	20.8	63
July	188.3	138.0	131.8	14.4	117.4	70.9	50.3	20.6	62
Aug.	186.1	130.5	125.8	15.6	110.2	75.9	55.6	20.3	59
Sept.	184.2	134.1	130.4	16.7	113.7	70.5	50.1	20.4	62
Oct.	184.4	133.7	130.2	16.8	113.4	71.0	50.7	20.3	61
Nov.	184.6	131.2	128.3	16.4	111.9	72.7	53.4	19.3	61
Dec.	190.3	138.4	134.4	16.2	118.2	72.1	51.9	20.2	62
Total	178.8	131.4	126.1	14.4	111.7	67.1	47.4	19.7	62

See footnotes at end of table.

--Continued

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/--Continued

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow- ance 5/	Net farm value 6/	Farm-retail spread			Farmers' share 7/
						Total	Wholesale -retail	Farm -whlsle	
	Cents per retail pound								Percent
1979:									
Jan.	201.4	152.5	145.7	16.9	128.8	72.6	48.9	23.7	64
Feb.	211.6	159.6	156.8	19.0	137.8	73.8	52.0	21.8	65
Mar.	222.1	170.2	172.7	24.9	147.8	74.3	51.9	22.4	67
Apr.	228.8	176.6	181.4	26.7	154.7	74.1	52.2	21.9	68
May	236.1	176.6	178.6	27.0	151.6	84.5	59.5	25.0	64
June	229.6	167.8	166.0	24.1	141.9	87.7	61.8	25.9	62
July	228.3	162.9	161.2	22.7	138.5	89.8	65.4	24.4	61
Aug.	217.1	154.0	151.4	21.0	130.4	86.7	63.1	23.6	60
Sept.	222.7	167.1	163.6	20.6	143.0	79.7	55.6	24.1	64
Oct.	220.5	160.6	157.3	19.6	137.7	82.8	59.9	22.9	62
Nov.	222.4	169.3	161.6	19.0	142.6	79.8	53.1	26.7	64
Dec.	228.6	171.4	163.9	18.8	145.1	83.5	57.2	26.3	63
Total	222.4	165.7	163.4	21.7	141.7	80.7	56.7	24.0	64
1980:									
Jan.	230.5	167.5	158.3	18.1	140.2	90.3	63.0	27.3	61
Feb.	230.8	170.2	162.4	16.7	145.7	85.1	60.6	24.5	63
Mar.	232.2	169.4	160.6	14.9	145.7	86.5	62.8	23.7	63
Apr.	229.3	163.2	152.8	14.0	138.8	90.5	66.1	24.4	61
May	226.5	167.6	156.2	13.0	143.2	83.3	58.9	24.4	63
June	226.7	172.2	160.7	14.0	146.7	80.0	54.5	25.5	65
July	233.8	179.7	170.8	16.6	154.2	79.6	54.1	25.5	66
Aug.	238.1	182.1	174.5	18.5	156.0	82.1	56.0	26.1	66
Sept.	240.7	176.3	168.0	17.3	150.7	90.0	64.4	25.6	63
Oct.	237.5	172.4	163.2	17.3	145.9	91.6	65.1	26.5	61
Nov.	238.2	166.8	158.0	18.1	139.9	98.3	71.4	26.9	59
Dec.	238.8	165.5	157.4	16.8	140.6	98.2	73.3	24.9	59
Total	233.6	171.1	161.9	16.2	145.7	87.9	62.5	25.4	62
1981:									
Jan.	235.4	165.7	154.5	15.8	138.7	96.7	69.7	27.0	59
Feb.	233.5	159.2	149.2	14.7	134.5	99.0	74.3	24.7	58
Mar.	231.6	155.5	146.7	15.5	131.2	100.4	76.1	24.3	57
Apr.	227.0	161.5	155.0	16.4	138.6	88.4	65.5	22.9	61
May	230.3	170.8	162.3	16.0	146.3	84.0	59.5	24.5	64
June	234.8	174.4	165.2	15.4	149.8	85.0	60.4	24.6	64
July	238.8	176.0	164.2	15.6	148.6	90.2	62.8	27.4	62
Aug.	238.6	169.7	159.1	15.6	143.5	95.1	68.9	26.2	60
Sept.	239.7	169.4	159.1	15.6	143.5	96.2	70.3	25.9	60
Oct.	237.4	158.8	149.2	15.1	134.1	103.3	78.6	24.7	56
Nov.	234.9	156.5	146.6	14.6	132.0	102.9	78.4	24.5	56
Dec.	234.0	155.2	143.3	14.1	129.2	104.8	78.8	26.0	55
Total	234.7	164.4	154.5	15.4	139.1	95.6	70.3	25.3	59

See footnotes at end of table.

--Continued

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/--Continued

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow- ance 5/	Net farm value 6/	Farm-retail spread			Farmers' share 7/
						Total	Wholesale -retail	Farm -whlsle	
	Cents per retail pound								Percent
1982:									
Jan.	232.9	159.8	146.3	13.9	132.4	100.5	73.1	27.4	57
Feb.	234.0	165.2	154.3	13.9	140.4	93.6	68.8	24.8	60
Mar.	233.0	170.2	160.0	14.5	145.5	87.5	62.8	24.7	62
Apr.	236.3	178.6	167.5	15.1	152.4	83.9	57.7	26.2	64
May	242.3	187.1	176.0	15.6	160.4	81.9	55.2	26.7	66
June	250.3	181.0	170.1	15.1	155.0	95.3	69.3	26.0	62
July	247.5	168.0	159.0	15.0	144.0	103.5	79.5	24.0	58
Aug.	242.7	165.4	157.0	15.0	142.0	100.7	77.3	23.4	59
Sept.	241.9	157.4	147.6	14.4	133.2	108.7	84.5	24.2	55
Oct.	234.6	153.0	143.1	13.8	129.3	105.3	81.6	23.7	55
Nov.	233.1	152.7	142.6	13.4	129.2	103.9	80.4	23.5	55
Dec.	231.7	152.7	142.5	12.7	129.8	101.9	79.0	22.9	56
Total	238.4	165.9	155.5	14.4	141.1	97.3	72.5	24.8	59
1983:									
Jan.	232.9	154.7	144.7	12.7	132.0	100.9	78.2	22.7	57
Feb.	234.6	158.5	148.9	12.9	136.0	98.6	76.1	22.5	58
Mar.	234.1	165.5	156.1	13.4	142.7	91.4	68.6	22.8	61
Apr.	240.3	176.5	166.6	15.0	151.6	88.7	63.8	24.9	63
May	242.5	171.6	163.4	15.0	148.4	94.1	70.9	23.2	61
June	240.0	167.4	158.6	14.7	143.9	96.1	72.6	23.5	60
July	237.9	160.2	151.4	15.1	136.3	101.6	77.7	23.9	57
Aug.	234.5	154.6	147.8	16.6	131.2	103.3	79.9	23.4	56
Sept.	230.7	149.8	141.9	15.9	126.0	104.7	80.9	23.8	55
Oct.	227.9	149.5	143.2	15.6	127.6	100.3	78.4	21.9	56
Nov.	227.2	149.7	143.7	16.4	127.3	99.9	77.5	22.4	56
Dec.	226.4	163.3	155.4	16.3	139.1	87.3	63.1	24.2	61
Total	234.1	160.1	151.8	15.0	136.8	97.3	74.0	23.3	58
1984:									
Jan.	235.2	171.6	164.1	17.3	146.8	88.4	63.6	24.8	62
Feb.	239.8	167.5	162.8	17.6	145.2	94.6	72.3	22.3	61
Mar.	240.4	170.7	166.7	17.8	148.9	91.5	69.7	21.8	62
Apr.	240.6	168.3	164.9	18.6	146.3	94.3	72.3	22.0	61
May	237.8	161.7	158.6	20.0	138.6	99.2	76.1	23.1	58
June	235.6	159.0	155.9	18.4	137.5	98.1	76.6	21.5	58
July	232.3	163.5	159.3	17.7	141.6	90.7	68.8	21.9	61
Aug.	233.1	158.5	155.8	18.0	137.8	95.3	74.6	20.7	59
Sept.	231.2	153.4	150.4	18.0	132.4	98.8	77.8	21.0	57
Oct.	230.9	150.4	148.3	17.4	130.9	100.0	80.5	19.5	57
Nov.	232.6	161.3	157.1	16.6	140.5	92.1	71.3	20.8	60
Dec.	236.2	164.6	159.4	16.2	143.2	93.0	71.6	21.4	61
Total	235.5	162.5	158.6	17.9	140.7	94.8	73.0	21.8	60

See footnotes at end of table.

--Continued

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/--Continued

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow- ance 5/	Net farm value 6/	Farm-retail spread			Farmers' share 7/
						Total	Wholesale -retail	Farm -whlsle	
	Cents per retail pound								Percent
1985:									
Jan.	235.6	161.8	155.9	15.5	140.4	95.2	73.8	21.4	60
Feb.	234.6	158.9	152.8	15.0	137.8	96.8	75.7	21.1	59
Mar.	234.5	150.8	144.6	14.3	130.3	104.2	83.7	20.5	56
Apr.	232.8	146.3	142.8	15.2	127.6	105.2	86.5	18.7	55
May	230.4	146.4	140.6	14.6	126.0	104.4	84.0	20.4	55
June	228.1	144.5	137.1	13.6	123.5	104.6	83.6	21.0	54
July	226.7	135.0	128.3	13.7	114.6	112.1	91.7	20.4	51
Aug.	221.7	131.9	126.7	14.1	112.6	109.1	89.8	19.3	51
Sept.	219.8	133.7	125.6	13.9	111.7	108.1	86.1	22.0	51
Oct.	220.4	149.7	143.1	14.9	128.2	92.2	70.7	21.5	58
Nov.	226.0	163.8	155.0	16.2	138.8	87.2	62.2	25.0	61
Dec.	232.9	162.6	154.0	15.9	138.1	94.8	70.3	24.5	59
Total	228.6	148.8	142.2	14.8	127.4	101.2	79.8	21.4	56
1986:									
Jan.	232.9	152.6	144.5	15.5	129.0	103.9	80.3	23.6	55
Feb.	228.5	143.1	136.5	14.9	121.6	106.9	85.4	21.5	53
Mar.	226.4	141.0	134.9	14.5	120.4	106.0	85.4	20.6	53
Apr.	223.1	137.8	131.2	14.4	116.8	106.3	85.3	21.0	52
May	222.9	142.8	135.7	14.7	121.0	101.9	80.1	21.8	54
June	222.7	138.4	128.2	14.3	113.9	108.8	84.3	24.5	51
July	223.5	146.9	140.9	15.4	125.5	98.0	76.6	21.4	56
Aug.	226.3	149.3	143.6	14.8	128.8	97.5	77.0	20.5	57
Sept.	227.1	149.5	144.1	14.5	129.6	97.5	77.6	19.9	57
Oct.	227.3	150.9	144.9	15.4	129.5	97.8	76.4	21.4	57
Nov.	229.8	156.0	150.5	15.7	134.8	95.0	73.8	21.2	59
Dec.	230.8	150.1	145.2	16.2	129.0	101.8	80.7	21.1	56
Total	226.8	146.5	140.0	15.0	125.0	101.8	80.3	21.5	55
1987:									
Jan.	232.6	147.5	142.8	16.4	126.4	106.2	85.1	21.1	54
Feb.	229.6	151.4	149.5	17.1	132.4	97.2	78.2	19.0	58
Mar.	229.6	153.6	151.4	17.3	134.1	95.5	76.0	19.5	58
Apr.	232.8	166.1	163.4	18.9	144.5	88.3	66.7	21.6	62
May	239.3	176.0	171.4	19.7	151.7	87.6	63.3	24.3	63
June	245.2	173.5	168.7	19.2	149.5	95.7	71.7	24.0	61
July	244.0	163.8	159.0	19.1	139.9	104.1	80.2	23.9	57
Aug.	241.2	157.0	156.5	19.4	137.1	104.1	84.2	19.9	57
Sept.	241.3	159.5	158.0	19.6	138.4	102.9	81.8	21.1	57
Oct.	241.5	159.2	157.9	20.0	137.9	103.6	82.3	21.3	57
Nov.	242.4	156.8	156.9	20.0	136.9	105.5	85.6	19.9	56
Dec.	241.1	155.4	156.0	20.5	135.5	105.6	85.7	19.9	56
Total	238.4	160.0	157.6	18.9	138.7	99.7	78.4	21.3	58

See footnotes at end of table.

--Continued

Appendix table 7--Estimated historical series for beef, Choice Yield Grade 3: Retail, wholesale, and farm values, price spreads, and farmers' share 1/--Continued

Month -year	Retail price 2/	Wholesale value 3/	Gross farm value 4/	Byproduct allow- ance 5/	Net farm value 6/	Farm-retail spread: Total	Farm-retail spread: Wholesale -retail	Farm-retail spread: Farm -whlsle	Farmers' share 7/
	Cents per retail pound								Percent
1988:									
Jan.	238.8	159.3	158.8	21.3	137.5	101.3	79.5	21.8	58
Feb.	242.1	163.3	166.0	21.9	144.1	98.0	78.8	19.2	60
Mar.	244.3	169.6	173.1	23.5	149.6	94.7	74.7	20.0	61
Apr.	245.9	172.6	176.7	23.3	153.4	92.5	73.3	19.2	62
May	248.9	183.0	181.9	22.4	159.5	89.4	65.9	23.5	64
June	255.5	174.2	170.1	21.1	149.0	106.5	81.3	25.2	58
July	254.9	159.2	159.9	21.1	138.8	116.1	95.7	20.4	54
Aug.	253.4	165.7	165.3	21.5	143.8	109.6	87.7	21.9	57
Sept.	255.3	169.1	166.3	19.7	146.6	108.7	86.2	22.5	57
Oct.	253.4	171.1	169.1	19.5	149.6	103.8	82.3	21.5	59
Nov.	256.0	171.8	171.4	19.1	152.3	103.7	84.2	19.5	59
Dec.	255.6	174.1	173.7	18.9	154.8	100.8	81.5	19.3	61
Total	250.3	169.4	169.4	21.1	148.3	102.0	80.9	21.1	59
1989:									
Jan.	259.2	175.2	175.4	18.8	156.6	102.6	84.0	18.6	60
Feb.	258.2	176.3	177.7	19.3	158.4	99.8	81.9	17.9	61
Mar.	264.7	180.5	185.7	21.1	164.6	100.1	84.2	15.9	62
Apr.	265.3	182.7	184.8	19.8	165.0	100.3	82.6	17.7	62
May	266.7	182.3	180.9	19.1	161.8	104.9	84.4	20.5	61
June	268.9	176.3	172.8	19.1	153.7	115.2	92.6	22.6	57
July	269.7	174.2	171.1	19.9	151.2	118.5	95.5	23.0	56
Aug.	268.2	173.7	175.9	20.2	155.7	112.5	94.5	18.0	58
Sept.	266.2	169.6	166.8	20.0	146.8	119.4	96.6	22.8	55
Oct.	265.0	169.5	172.8	20.7	152.1	112.9	95.5	17.4	57
Nov.	266.4	177.1	180.8	21.0	159.8	106.6	89.3	17.3	60
Dec.	269.4	183.8	186.6	21.7	164.9	104.5	85.6	18.9	61
Total	265.7	176.8	177.6	20.0	157.6	108.1	88.9	19.2	59
1990:									
Jan.	274.4	187.1	189.4	21.8	167.6	106.8	87.3	19.5	61
Feb.	271.0	186.0	188.7	21.5	167.2	103.8	85.0	18.8	62
Mar.	272.5	187.7	190.4	21.1	169.3	103.2	84.8	18.4	62
Apr.	277.9	190.1	192.0	21.2	170.8	107.1	87.8	19.3	61
May	283.6	191.6	187.9	20.7	167.2	116.4	92.0	24.4	59
June	282.1	187.8	184.2	20.3	163.9	118.2	94.3	23.9	58
July	279.9	183.3	180.6	20.1	160.5	119.4	96.6	22.8	57
Aug.	280.6	187.8	186.6	19.9	166.7	113.9	92.8	21.1	59
Sept.	280.6	187.3	186.8	20.0	166.8	113.8	93.3	20.5	59
Oct.	282.7	193.0	190.8	19.7	171.1	111.6	89.7	21.9	61
Nov.	291.6	198.5	194.5	19.7	174.8	116.8	93.1	23.7	60
Dec.	295.3	200.2	194.8	20.0	174.8	120.5	95.1	25.4	59
Total	281.0	190.0	188.9	20.5	168.4	112.6	91.0	21.6	60

1/ Reflect August 1990 revisions. 2/ Estimated weighted-average of BLS prices of retail cuts from Choice Yield Grade 3 carcass. 3/ Value of wholesale quantity equivalent to 1 pound of retail cuts. A wholesale equivalent of 1.142 is used. 4/ Market value to producer for 2.4 pounds of live animal, equivalent to 1 pound of retail cuts. 5/ Portion of gross farm value attributed to edible and inedible byproducts. 6/ Gross farm value minus farm byproducts allowance. 7/ Percentage net farm value is of retail price.

Now it's easy to order from ERS!

Order ERS monographs and periodicals with one toll-free phone call. Our courteous staff can help you get the information you need, quickly and efficiently. Your order will be filled fast, and items will be sent by first class mail.

Call 1-800-999-6779

(in United States and Canada; other areas please call 301-725-7937)

When you call, also ask to be put on our **free** mailing list to receive ***Reports***, a quarterly catalog describing the latest ERS research reports, electronic databases, and video products. It will help you keep up-to-date in the economics of food, farms, the rural economy, foreign trade, and the environment.

Or write to: ERS-NASS
P.O. Box 1608
Rockville, MD
20849-1608

Reports you can use . . . from ERS

Livestock and Poultry Update
gives you up-to-the-minute information.

Each month the *Livestock and Poultry Update* brings you ERS' most up-to-the-minute data on the livestock and poultry sector. This useful 6-page update brings you the most current figures, *delivered by first-class mail to ensure timely delivery.*

The *Livestock and Poultry Update* looks at commercial production and slaughter, livestock and meat prices, costs and returns, and livestock and poultry imports and exports, all on a monthly basis.

A 1-year subscription to the *Livestock and Poultry Update* costs just $15. Or save by ordering a 2-year subscription (that's 24 issues) for $29, or a 3-year subscription for $42.

Situation and Outlook Commodity Reports
give you the facts . . . and the forecasts!

These reports provide both current intelligence and historical data on national food and agricultural developments. They also forecast the effects of changing conditions and policies on domestic and international agriculture.

Who uses *Situation and Outlook Commodity Reports*? Farmers and trade associations, agri-industries and financial institutions, Federal, State, local, and foreign governments, news media, food service industries, and research and academic facilities all look to these reports as the most reliable source of up-to-date information.

These reports tell you what's affecting land values, production costs, farm finances, world trade, and energy for *Aquaculture, Cotton and Wool, Dairy, Feed, Fruit and Tree Nuts, Livestock and Poultry, Oil Crops, Rice, Sugar and Sweetener, Tobacco, Vegetables and Specialties,* and *Wheat.*

The cost is just $12 for a 1-year subscription per title. Or save by ordering a 2-year subscription for $23, or a 3-year subscription for $33. (A subscription to *Livestock and Poultry Situation and Outlook* report runs $17 for a 1-year subscription; $33 for a 2-year subscription; and $48 for a 3-year subscription.)

Call toll free, 1-800-999-6779
in the U.S. and Canada; other areas, please call 301-725-7937.
Or write, **ERS-NASS, P.O. Box 1608, Rockville, MD 20849-1608**

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
1301 NEW YORK AVENUE, NW.
WASHINGTON, DC 20005-4788