Factors Affecting the
Beef Choice/Select Spread

The choice/select boxed beef spread, commonly referred to as the choice/select spread, is the difference between wholesale boxed beef cut-out values for the U.S. Department of Agriculture's choice and select quality grade carcasses on any given day. The cut-out value is not a carcass price. It represents the value of a carcass based on the value of individual cuts on that day.

A beef carcass is fabricated into various primal cuts, which are then sold as boxed beef. The boxed beef cut-out value is a composite value based on primal cut value as calculated from the price of individual cuts, along with the value of lean trim and fat. Individual prices for specific cuts ultimately drive cut-out values for the different USDA quality grades and thus the difference reported in the choice/select spread.

This publication covers calculation of the choice/select spread, as well as supply and demand factors that widen or narrow the choice/select spread. Additional discussion centers on how the choice/select spread reflects cattle quality and packer demand for certain USDA quality grades.

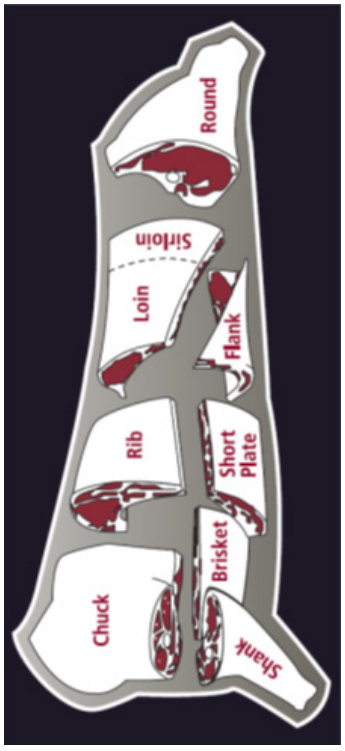
The Beef Cut-Out

The beef carcass is divided into seven primal cuts, specifically the brisket, chuck, flank, loin, rib, round and short plate. USDA calculates a carcass cut-out value by quality grade based on the percentage yield contribution, or PYC, of each primal cut to the carcass cut-out value as shown in Column 1 in Table 1.

Primal values are calculated from subprimal prices. As an example, the loin primal value is a weighted average wholesale price of its associated subprimal cuts, including tenderloins and strip steaks that are available at grocery stores and restaurants. Negotiated prices for subprimal cuts of differing quality grades reflect consumer demand as well as supply factors and directly affect the overall value for the specific USDA quality grade's cut-out.

Mandatory price reporting provides subprimal prices negotiated between packers and wholesalers.

The percentage yield contribution is multiplied by the value for a quality grade (Columns 2 and 4 in Table 1) to obtain the percentage weighted quality grade value (shown in Columns 3 and 5 of Table 1). For example, the choice rib primal cut contributed $36.72 ($324.69 x 11.31%) to the composite cut-out value of a USDA choice carcass during the week of Nov. 1, 2013. The composite cut-out value for each quality grade is calculated by multiplying each primal PYC by the corresponding primal's cut-out value and then summing across the seven primal cuts. The choice/select spread is then calculated by subtracting the select composite cut-out value from the choice composite cut-out value.



Beef Carcass, Cut-out, and Boxed Beef

Table 1. Primal Value Contribution to Carcass Value and Calculated Choice/Select Spread

Primal	Percentage Yield Contribution to Total Carcass Value (1)	Choice Primal Value ($/cwt) (2)	Percentage Weighted Choice Value ($/cwt) (3)	Select Primal Value ($/cwt) (4)	Percentage Weighted Select Value ($/cwt) (5)
Brisket	4.97%	$136.93	$6.81	$136.48	$6.78
Chuck	29.56%	$176.09	$52.05	$171.39	$50.66
Flank	3.38%	$108.18	$3.66	$107.44	$3.63
Loin	21.18%	$261.28	$55.34	$226.61	$48.00
Rib	11.31%	$324.69	$36.72	$267.85	$30.29
Round	22.44%	$178.80	$40.12	$176.81	$39.68
Short Plate	7.16%	$137.78	$9.87	$138.85	$9.94
Composite Cut-out Value ($/cwt)			$204.56		$188.99
Choice/Select Spread ($/cwt)			$15.58		

Note: Values are for the week ending Nov. 1, 2013.
Source: USDA Agricultural Marketing Service.

Differences in Choice and Select Beef

The difference in value of choice beef cut-out value and select beef cut-out value is driven by the two identifiable markets for these quality grades. Choice and select are two of the four quality grades used by the USDA to classify the amount of marbling (intramuscular fat) and maturity of beef carcasses. Carcasses that grade select have less marbling than their choice counterparts.

To grade as select, cattle must be between nine and 30 months of age. Cattle grading choice can be up to 42 months of age, although, in practice, most cattle that grade choice or select are less than 30 months of age.

The choice/select spread is the focus of attention, since roughly 86 percent of all beef graded falls into one of these two grades. Moreover, the tradeoffs between choice and select are highly related, since cattle that fail to grade choice typically grade select, thereby changing the supply of both simultaneously.

There are two separate but connected markets for choice and select beef, with separate and unique supply and demand curves for each quality grade. For example, Lusk et al. found that choice and select quality grades are substitutes during winter at the wholesale level but that select beef is not a substitute for choice beef during the spring and summer – "the grilling season."

Anything that shifts the supply or demand curves for either choice or select beef can affect the choice/select spread. Choice beef contains a higher degree of marbling than select beef that typically can be attributed either to differences in genetics or to additional days on feed. These differences result in a product that is more expensive to produce, which is reflected in a supply curve for choice beef that is different than for select beef.

Even within a quality grade, submarkets can exist for different ranges of the grade. Changes in technology and improved education of USDA graders have resulted in an increased supply of choice carcasses. Since 2008, choice beef accounts for approximately 64 percent of total pounds graded as compared to 57 percent from 2000 through 2007. Total pounds of beef graded select have fallen to approximately 32 percent since 2008 compared to 39 percent during 2000-2007.

These improvements in quality grading also have resulted in market changes that are not fully reflected

in USDA reported cut-out values. There is an increasing divide between the upper two-thirds and lower one-third of the choice market. This change is not reflected in the USDA reported cut-out values, but it allows many retailers to offer USDA choice beef in their meat cases that would previously have graded as USDA select plus. The performance of these two submarkets for choice beef is important in explaining the total strength of the choice composite cut-out value even though USDA reports do not reflect the presence of these two submarkets.

Seasonality of cattle production also affects the choice/select spread (Figure 1). Fewer cattle grading choice in the spring combined with increased demand for steaks produced from the rib and loin primals going into the summer lead to a wider choice/select spread. A tightened supply of choice grading cattle in the spring reflects younger cattle being placed in feedlots in the fall. The choice cut-out value normally increases faster than the select cut-out value during this period, resulting in a wider choice/select spread through the summer grilling months. In July, the choice/select spread begins to seasonally narrow, with an increase typically occurring in October through the end of the year. The wider choice/select spread in October through the end of the year primarily is a result of seasonal demand for choice loin and ribs (middle meats) during the holidays – demand that is not shared by select middle meats.

The stronger-than-usual spreads during the summers of 2012 and 2013, however, suggest the choice/select seasonal pattern is changing, possibly due to the previously discussed choice submarkets.

A widening (narrowing) choice/select spread provides incentives for increased (decreased) production of choice beef compared to select beef. This is partly because cattle usually must be kept on feed longer to achieve the USDA choice quality grade, thus resulting in a higher cost of production. The value of the choice/select spread is a signal from packers to cattle feeders that the marginal cost of keeping cattle on feed longer will be rewarded through higher fed cattle prices.

Differences in the choice/select spread are driven by value differences in the loin and rib. There is little difference between choice and select values of the other primal cuts (Figure 2). This reflects the importance of these two primals regarding aggregate beef demand. With approximately half of total U.S. food expenditures

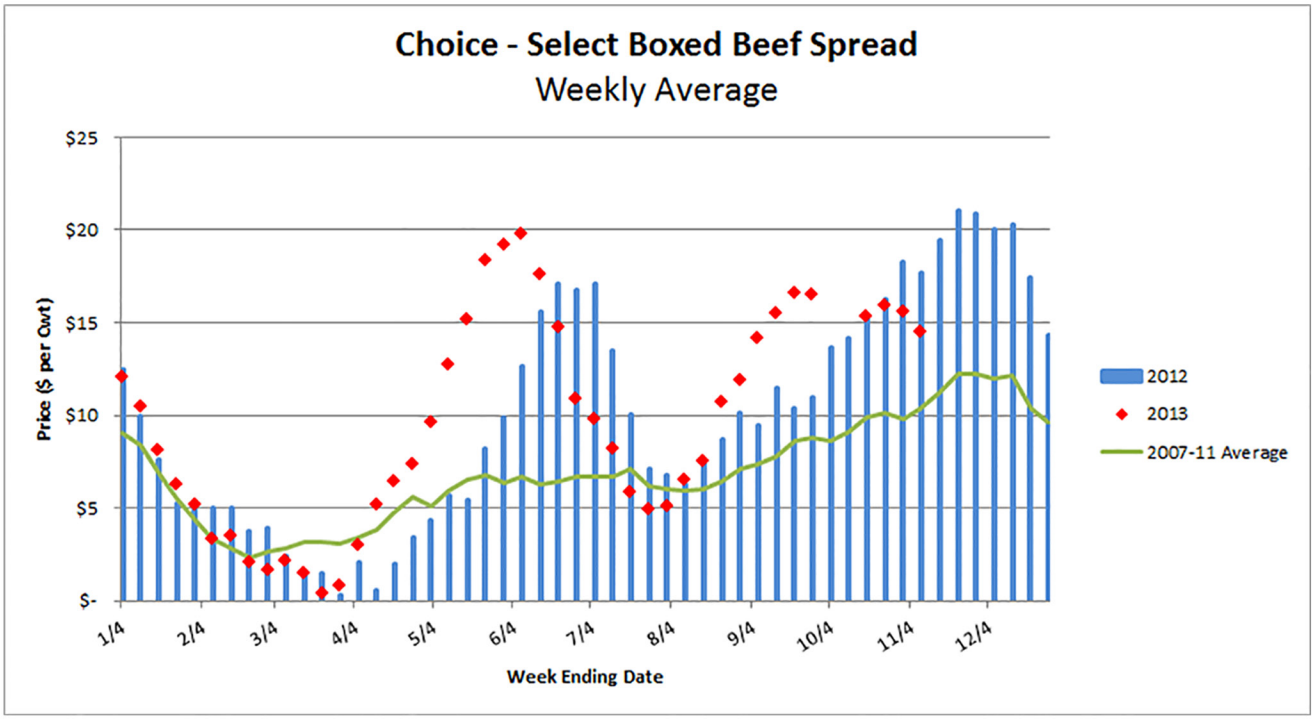


Figure 1. Choice/Select Boxed Beef Cut-Out Value Spread
Source: USDA Agricultural Marketing Service. Compiled by Livestock Marketing Information Center.

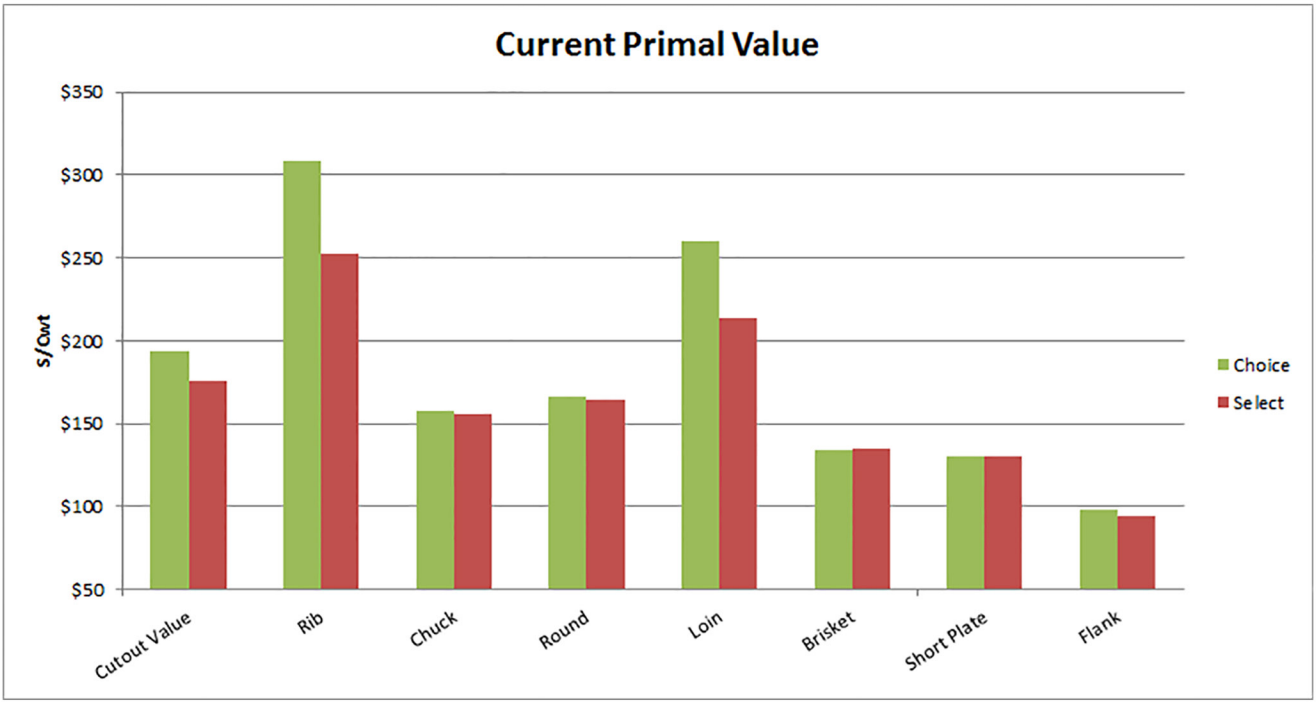


Figure 2. September 2013 Primal Cut Values.
Source: USDA Agricultural Marketing Service. Compiled by Livestock Marketing Information Center.

occurring away from home, improved beef demand at restaurants that feature choice steaks from the loin and rib primals can improve the value of the choice cut-out and widen the choice/select spread.

While there often are small or no differences between choice and select values for other primal cuts, the value of these primals is an important part of the overall carcass cut-out value. The primal cuts of the chuck and round experience seasonal strength during the fall and winter months, while the brisket primal experiences its highest prices in the winter months. Weakness in demand for primals affects the value for both the choice and select composite cut-outs and can result in lower fed cattle prices.

Year-on-year comparisons in terms of subprimal price or primal value can be important barometers to indicate the strength of demand for these meats cuts. Beef production, prices of competing meat products, weather and income also should be taken into account, however, since demand for steaks does not occur in a vacuum. It must compete against fish, pork and poultry for consumers' food dollars.

Some primal cuts, such as brisket, chuck and round, are popular in the United States, but these primal cuts often are in even higher demand in other countries, including Canada, Japan, Mexico and South Korea. The strength of export demand for these primals is reflected in the price of specific subprimal cuts, which, in turn, affects primal and cut-out values and ultimately the price of fed cattle.

U.S. beef exports have accounted for approximately 8-10 percent of domestic U.S. production in recent years, providing a significant boost to fed cattle prices. Table 2 illustrates export demand for specific primals by major U.S. trading partners. Because not every country listed below prefers choice for a specific primal cut, this provides additional support for the value of the select cut-out and results in little difference between the choice and select primal values.

Table 2. Export Demand for U.S. Beef Primal Cuts

Country	Primal Cut	Quality Grade Preference
Canada	Chuck, Loin, Rib, Round	Choice/Select
Japan	Chuck, Loin, Short Plate	Choice
Mexico	Brisket, Chuck, Rib, Round	Select
South Korea	Chuck, Short Plate	Select

Source: Lacy

Packer Demand and Quality Signals From the Choice/Select Spread

The beef industry maximizes value by providing products that consumers most desire. The USDA quality grades of choice and select are indications of the degree of marbling, which provides tenderness and taste consumers enjoy. A widening (narrowing) choice/select spread indicates consumers are willing to pay more (less) for choice beef compared to select beef.

Consumers can and do substitute select beef products for choice beef products when the industry offers too much select compared to choice, but there is a loss of value to the industry since consumers will be willing to pay significantly less for products that are less valuable to them. The choice/select spread helps the industry understand and respond to value signals.

While the choice/select spread reflects packer demand for certain types of cattle quality, these incentives are not always fully communicated through price signals, depending on the pricing system used to procure fed cattle. Pricing fed cattle on a live or dressed basis makes it difficult for a packer to fully account for the quality of the animal. This may result in a lower price for the cattle producer, since the packer faces uncertainty regarding carcass quality until after the animal is slaughtered.

As an alternative, a grid pricing system provides stronger incentives, via premiums and discounts in the grid, for producers to produce high-quality fed cattle possessing the characteristics desired by consumers. A deeper discussion of grid pricing is available in Feuz, Ward and Schroeder and Ward, Schroeder and Feuz. In short, grid pricing transfers risk and uncertainty regarding the carcass quality and its value to the producer, but the producer also can be rewarded for higher quality cattle that meet demand from consumers.

Summary

The choice/select spread is an important indicator of the strength of demand and relative supply of two separate markets for beef: the USDA choice market and the USDA select market. Prices for specific beef cuts ultimately affect the values for the choice and select composite cut-out values that result in a widening (narrowing) choice/select spread. Some primal cuts often exhibit little difference between choice and select quality grade levels and therefore have little effect on the choice/select spread, however. International demand can be an important factor in determining subprimal prices, which, in turn, affect primal cut-out values and the overall carcass cut-out value. The choice/select spread also indicates packer demand for cattle quality types since it reflects the relative strength of these two similar, but separate, consumer markets.

References

Feuz, D.M., C.E. Ward and T.C. Schroeder. "Fed Cattle Pricing: Grid Pricing Basics." Oklahoma State University Cooperative Extension Factsheet AGEC-557 (2003). Available at http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1989/AGEC-557web.pdf.

Lacy, C. "Relationships Affecting the Choice/Select Spread." University of Florida Beef Cattle Short Course, Gainesville, Fla., May 2-4.

Lusk, J.L., T.L. Marsh, T.C. Schroeder and J.A. Fox. "Wholesale Demand for USDA Quality Graded Boxed Beef and Effects of Seasonality." *Journal of Agricultural and Resource Economics* 26(1):91-106 (2001).

U.S. Department of Agriculture, Agricultural Marketing Service. *USDA Daily Boxed Beef Report*. Available at: http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELDEV3102138.

Ward, C.E., T.C. Schroeder and D.M. Feuz. "Grid Pricing of Fed Cattle: Risk and Information." Oklahoma State University Cooperative Extension Factsheet AGEC-561 (2004). Available at http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1948/AGEC-561web.pdf.

Authors

J. Ross Pruitt, Assistant Professor and Livestock Market Economist, LSU AgCenter
Kellie Curry Raper, Associate Professor and Livestock Market Economist, Oklahoma State University
Derrell S. Peel, Professor and Livestock Market Economist, Oklahoma State University

This publication was also produced as
Oklahoma Cooperative Extension Service publication AGEC-625

Visit our website:
www.LSUAgCenter.com

William B. Richardson, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

Pub. 3332 (online only) 2/14