Changes in the Ground Beef Market and What it Means for Cattle Producers

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Introduction

Hamburgers have been a favorite in the United States for more than a century, and ground beef has long been a staple, versatile and convenient for time-squeezed consumers.

Burger popularity moved to new heights over the past decade, especially when low-carb, high-protein dieting began to gain traction in 2003 and '04. Many companies assessed the market and responded accordingly, as burgers were an increasingly featured item on their restaurant menus. Much of that impetus began with fast-food restaurants racing to make bigger burgers to take advantage of beef's resurging popularity.

CKE Restaurants started the fray by introducing a half-pound burger in its Carl's Jr. restaurants. McDonald's soon followed by introducing its new sandwich – the Big N' Tasty. That set off a whole wave of burger-mania, including:

- Hardee's introducing its new line of Thickburgers (choice of 1/3-, 1/2- and 2/3-pound) with an emphasis on taste and quality.
- Carl's Jr. also introduced the Low Carb Six Dollar Burger – a 1-pound offering.
- Wendy's initiated its own burger promotion in 2004, test marketing "Meals for Carb Counters." The promotion featured a cheeseburger meal with only six grams of carbohydrates and the ability to add a second ¼-pound beef patty.
- Burger King's promotional campaign was entitled the "Angus Diet" – an intentional play on the Atkin's Diet trend that included a character called Dr. Angus.

At the time, the *Wall Street Journal* ran an article entitled, "Beef is What They're All About," (August, 2004) noting that, "…the nation's big fast-food chains have given red meat a more prominent spot on the promotional grill."

The affinity of hamburgers among consumers was subsequently reinforced amidst the financial crisis. The burger allowed food service to stay relevant in a stagnant economy. That reality was prominently highlighted in November 2009, when the *Technomic/American Express Restaurant Market Brief* noted that restaurants were, "…finding one virtually foolproof way to please their regular customers and attract new ones: burgers, both traditional and innovative….Nearly half of consumers say restaurants should offer a variety of burger sizes, from dainty mini-burgers to half-pound behemoths."

The report went on to further establish:

> *Americans eat more than 11 billion burgers every year and eight out of 10 U.S. foodservice establishments serve hamburgers….The conclusion is inescapable: Any restaurant that purveys burgers, at any price point, had better pay attention to trends and consumer preferences to boost the bottom line….American consumers take their burgers seriously, and burgers are one menu item where they are less willing to cut back despite the current tough economic environment….Meat is the meat of the matter. Three-quarters of consumers rank quality of meat as the first or second most important attribute they look for in choosing a burger. When asked what makes a burger "premium," more than seven out of 10 specified a high-quality breed of beef (such as Angus) and/or a high-quality cut (such as sirloin).*

Most restaurants, even high-end, now feature hamburger on their menus. Moreover, the U.S. has witnessed the successful proliferation of burger chains such as Smashburger, Five Guys, BurgerFi, Mooyah, The Habit Burger Grill and others over the past several years. Furthermore, the restaurant industry's burger focus has further driven surging demand for premium ground beef. Meanwhile, many retailers offer increased variety of ground beef (including attribute-based, leanness and/or premium brand) options to their customers. And finally, that same emphasis is making its way into the mainstream restaurant sector; for example, Carl's Jr. recently announced it will soon be serving an "All-Natural Burger" featuring "all-natural, grass fed, free-range" beef that has "no added hormones, antibiotics or steroids."

Perhaps one of the most important drivers of change in recent years at the retail level revolves around price. As beef prices have risen, retailers have used ground beef more prominently in their advertised sales as a product that can be more competitively priced with other proteins and offered as a "hot front page ad." Moreover, while price per pound is typically a key consideration among consumers when making purchasing decisions, total package cost is another. Smaller chubs allow consumers to enjoy beef while avoiding larger total expenditures at any one time (versus purchasing whole muscle cuts, e.g. chuck roast, that may be upwards of five pounds).

All that said, ground beef has traditionally been thought of as an industry by-product. The category deserves more attention – especially in light of trends during the past five years. Growth in the ground beef industry inherently leads to questions about implications for cattle producers and the broader industry. *Ground Beef Nation* (published in early 2014 by Rabobank AgriFinance), in particular, prompted much needed dialogue and pushed the industry to ask some of these questions around the current paradigm within the beef complex.

The publication received a large amount of industry attention, in effect forcing industry leaders to closely analyze the current production system, value incentives and subsequent impact on consumer prices. Specifically, the publication suggested the industry would be well-served to modify its practices to capitalize on the changing marketplace for ground beef, perhaps altering current production systems to improve efficiency (and lower costs) associated with ground beef production. The paper suggested failure to do so would risk ignoring an increasingly important segment of the market and ultimately lead to weakened market share for beef over time.

The purpose of this white paper is to explore and outline some of the important dynamics around the ground beef category. It addresses the ways in which the beef industry has responded to market signals around ground beef, exploring the economics and efficiencies associated with meeting the growing demand for ground beef within the current structure.

Ground Beef Sales

Ground beef/hamburger is the largest fundamental category of beef products. From a business perspective, the ground beef/hamburger category is often considered singularly. In reality, an assortment of products falls under that header. The table below depicts the seven key sub-categories and differentiating characteristics of each. As such, the ground beef market is complex, representing a wide array of ingredients from a variety of sources coming together to make different types of products.

Types of Ground Beef Products

Category	Skeletal Muscle	Skeletal Trimmings	Head Meat Trimmings	Cheek Meat (up to 25%)	Added Beef Fat	PDCB (Partially Defatted Chopped Beef)	PDBT (Partially Defatted Beef Fatty Tissue)	Edible Lean Organ Meats	Water, Binders, Fillers, Extenders
Primal-specific Ground Beef (i.e. Ground Chuck)	Y	Y	-	-	-	-	-	-	-
Ground Beef	Y	Y	Y	*	-	-	-	-	-
Hamburger	Y	Y	Y	*	Y	-	-	-	-
Pure Beef Patties	Y	Y	Y	*	-	Y	-	-	-
Pure Beef Patty Mix	Y	Y	Y	*	-	*	-	-	-
Beef Patties	Y	Y	Y	*	*	Y	*	*	*
Beef Patty Mix	Y	Y	Y	*	*	*	*	*	*

Source: Derived from USDA's "Ingredient Standard List and Labeling Requirements for Ground Beef Products

Y = Ingredients allowed and not required to be listed on the label

* = Ingredients allowed and must be listed on the label

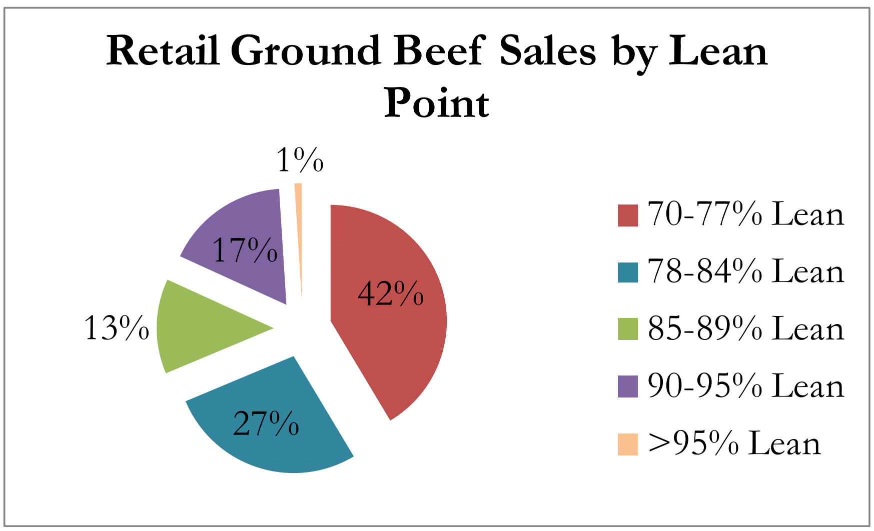
- = Not allowed

Proprietary data available from IRI FreshLook and Technomic further reveals that ground beef sales vary by sales channel. Ground beef sales represent approximately 63% of total foodservice beef sales volume (lb) and 37% of total revenue. Meanwhile, ground beef in retail channels comprises 49% and 39% of sales volume and revenue, respectively. Within both channels there have been key developments in recent years.

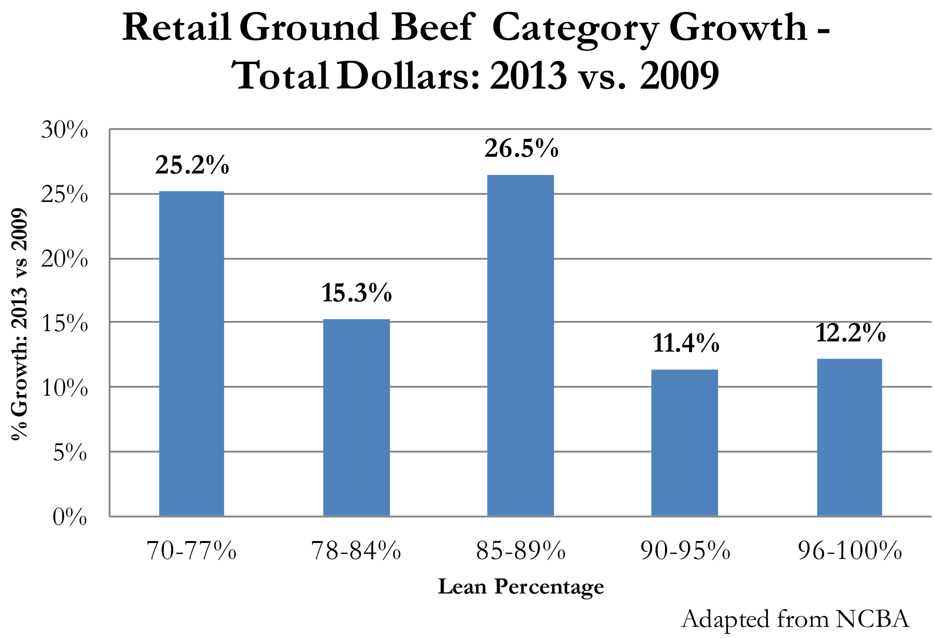
As noted in the previous section, ground beef has traditionally been the anchor for the quick service restaurant (QSR). As beef demand improved, this segment initially responded by selling larger burgers – many of which were typically sold on a 75% lean basis. While some have strived to market a leaner burger (McDonald's McLean in the mid-'90s), most have found a 75-80% lean product the best balance of taste, cost and ability to patty. More recently, upscale burger chains (such as Five Guys and Smashburger) have led a new emphasis on premium ground beef at higher price points. Also noted previously, those chains have found good success: 2013 sales grew at 10.4% (year-over-year) versus 0.9% for the traditional burger segment (Technomic).

At the retail level, ground beef is a highly diverse category and has changed dramatically in recent years. It is important to note that as retailers have changed from in-store butchers to case-ready programs, or moved to case-ready trim subprimals (limited trimmings produced by retailer), more trim and thus ground beef production has been generated at the packer-processor level. (Today many retailers choose NOT to grind any beef in their stores for food safety reasons and liability risk– a trend that will likely continue.)

Ground beef is now typically offered in both the full-service and self-service meat case, and in both patty and bulk pack form. Many retailers now supplement their traditional overwrap offerings with exact-weight, retail-ready ground beef chubs sourced directly from suppliers, and often provide more than 30 ground-beef SKUs across their fresh and frozen meat sections. Ground beef can be offered with precision (e.g. 1- or 3-lb) at varying price points depending upon leanness. With respect to leanness categorization, retail sales occur as follows (source: Freshlook):



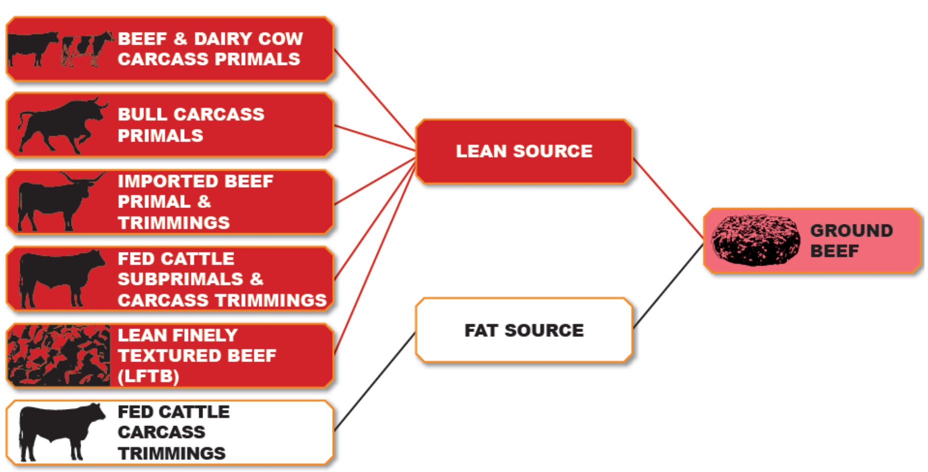
As beef prices have risen, not only have retailers used ground beef more prominently in feature ads because it can be priced competitively, but they have also established ground beef as an enhanced value offering. This often occurs with new creativity through added seasonings and/or other ingredients thereby creating opportunity to market higher-end fresh burgers. The ground beef category at the retail level has also witnessed new segmentation by type (natural or organic) and various lean points (e.g. 90%) offerings.



Ground Beef Production

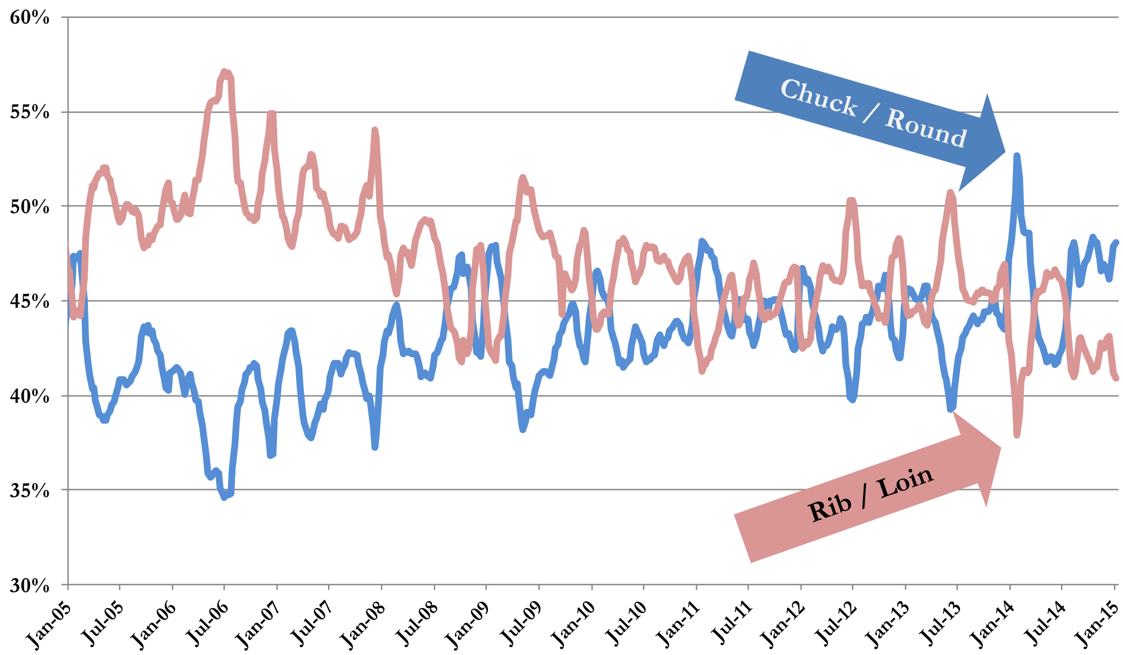
Despite the large number of existing products and ongoing expansion of the ground beef category, for the purpose of this paper, ground beef/hamburger can be distilled to broader terms for consideration of business flow. Regardless of the specific sub-category, ground beef originates from three primary sources: 1. fed cattle, 2. mature cattle (cull beef and dairy cows and bulls), and 3. imported lean beef (fed and non-fed).

In general, fed beef subprimals and trimmings are ground exclusively or blended with lean trimmings from mature cattle and/or imported lean beef in varying proportions (depending on the desired lean/fat ratio) to derive the bulk of ground beef/hamburger within the consumer market. That process includes the following general venues of production: 1. Packers grinding trim and subprimals from their own fed beef production; 2. Packers grinding internally sourced or purchased lean trimmings (non-fed domestic or imported) to mix with 50% lean trim from fed beef production; 3. Downstream grinders utilizing trim and/or subprimals, both domestic and imported; 4. In-house grinding at retail or restaurant level (from a variety of meat sources including packer grinds, grinding shop trim, cuts pulled from retail cases and/or whole subprimals); 5. Grinding operations mixing lean, finely-textured beef (LFTB) with low percent-lean trim from fed-beef production.



Because multiple sources and types of product are available to make ground beef, many combinations of meat products are utilized to reach the desired end point of lean-to-fat ratio at any one time. For example, whole subprimals may be used for grinding, if it makes sense economically. Undoubtedly, ground beef's popularity and varying utilization of cuts has contributed to alteration of the relative contribution of middle versus end meats to the cutout value in recent years.

Choice Cutout:
Relative Contribution of Middle vs. End Meats
Weekly Values
(adapted from USDA:AMS - though December, 2014)



To that point, the decision of how to most appropriately combine materials is based on a least-cost (and/or value maximization) approach given the market for various cuts at any given time. Least-cost formulation allows processors to produce ground beef, simultaneously managing quality and economic considerations. That's especially true considering seasonality, source availability and demand for beef products. For example, there may be weeks in which a whole muscle cut (e.g. Inside Round) is more likely to be used for grinding versus being sold as a whole-muscle cut. The decision is complex and dynamic across time.

Within that broader view, though, several key analyses help trace dollars through the beef industry. The trimmings markets (both lean and 50/50) and, secondly, the relative value of ground beef/hamburger in comparison to beef in general are respectively addressed in the sections below.

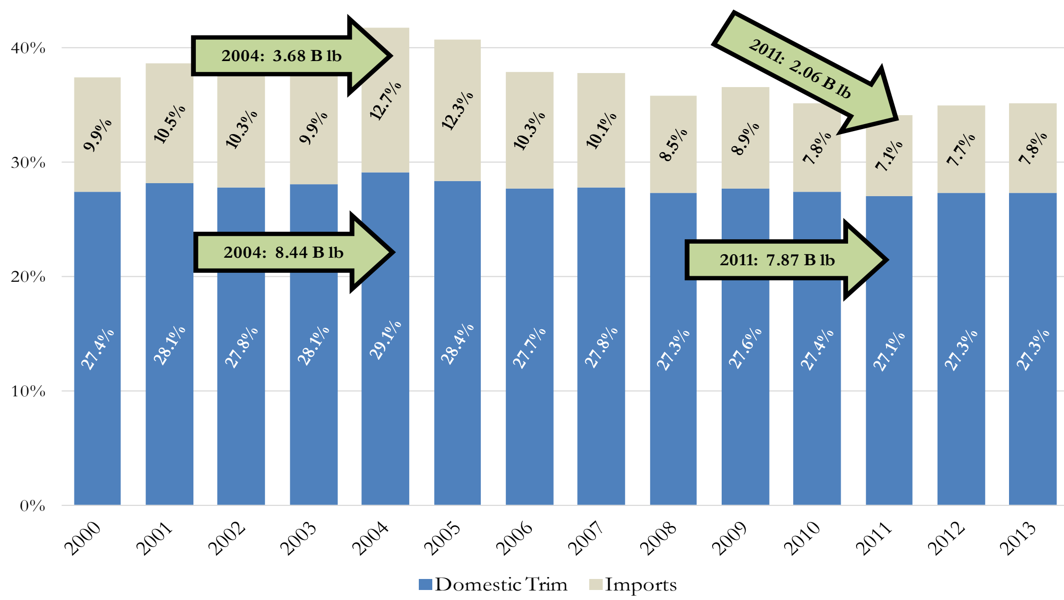
Trimmings Market

The trimmings market is a function of numerous drivers making it somewhat cumbersome to analyze. First, there's an array of domestic sources to consider as highlighted above, including domestically-sourced lean trim (from cull cows and bulls). Second, imports play an important role.

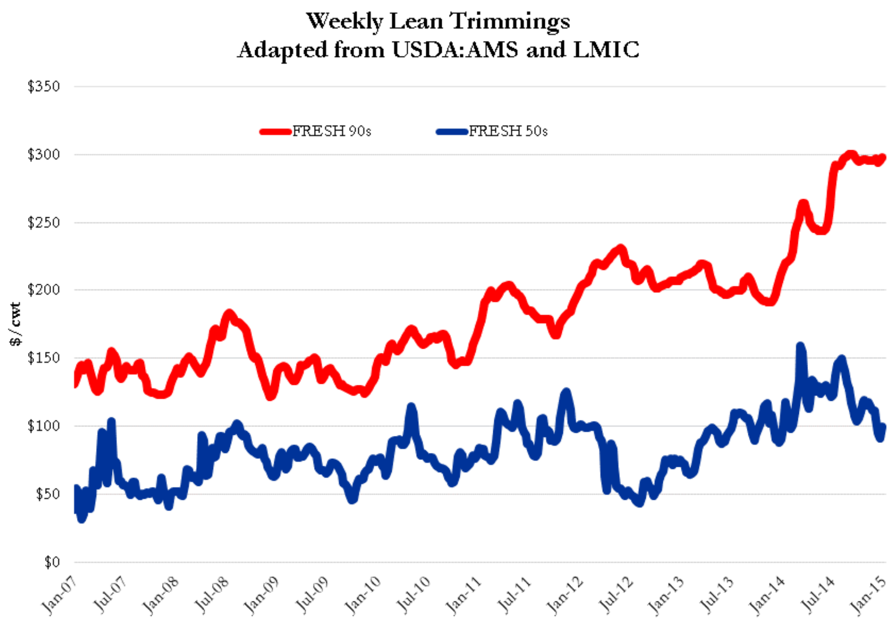
Beef imports are overwhelmingly comprised of fresh, chilled and frozen boneless beef – consistently representing about 85% of all imports since 2000. Much of the beef is imported to blend with 50/50 trim to make ground beef/hamburger. Three countries (Australia, Canada and New Zealand) comprise the bulk of those imports –70% of the total tonnage in 2013.

The figure below details the proportion of lean grinding material from domestic and international sources in the total beef supply. Domestic trim (sourced from both fed cattle and mature cattle) regularly represents slightly more than 27% of the nation's beef supply. Meanwhile, imported beef supply peaked in 2004 at 12.7% or 3.68 billion (B) lb. However, that supply steadily declined through 2011, marking a bottom at 2.06 B lb or 7.1% of available beef supply.

Annual Domestic Trim Production and Imports as % of Total Beef Supply - Adapted from LMIC

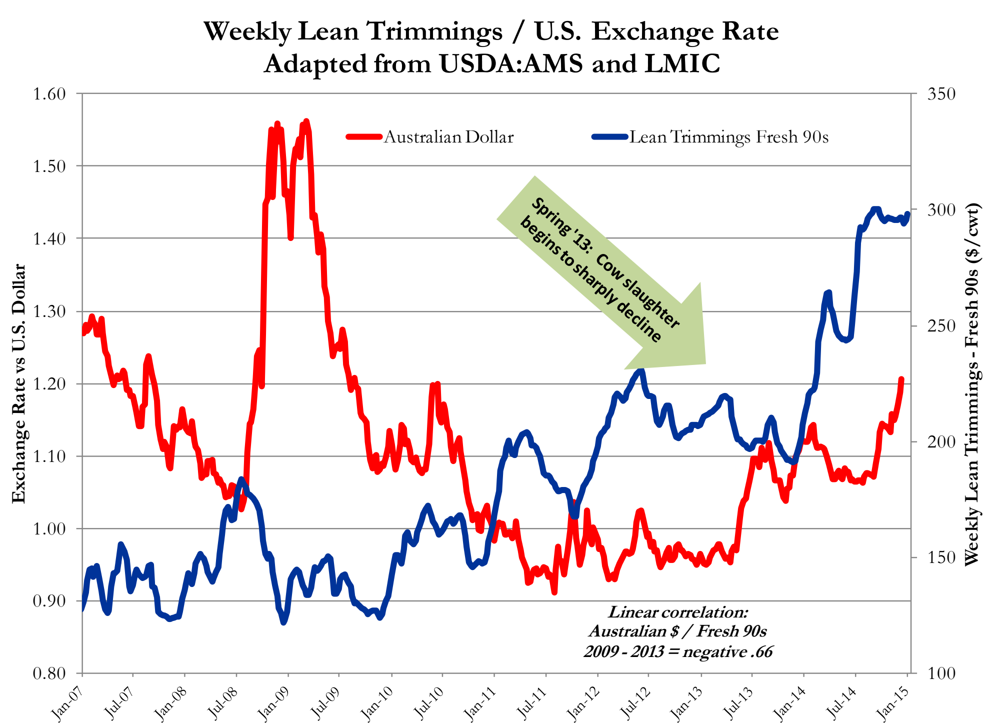


In other words, imports declined by 1.6 B lb (44%) in the span of just seven years. The decline clearly served to underpin the domestic lean trimmings market – most notably 90% lean trimmings (as detailed in the figure below). The market moved to new levels following BSE-induced trade disruption and reached new all-time highs in the summer of 2008.



However, from there the market becomes more complex. Change in foreign trade over the long run is often driven by shifting currency exchange values. The decline of imported beef over time has largely been spurred by a general weakening of the dollar (effectively making imports more expensive). International trade and the lean trimmings market came under a new influence in the 2008-2011 time period: the Great Recession.

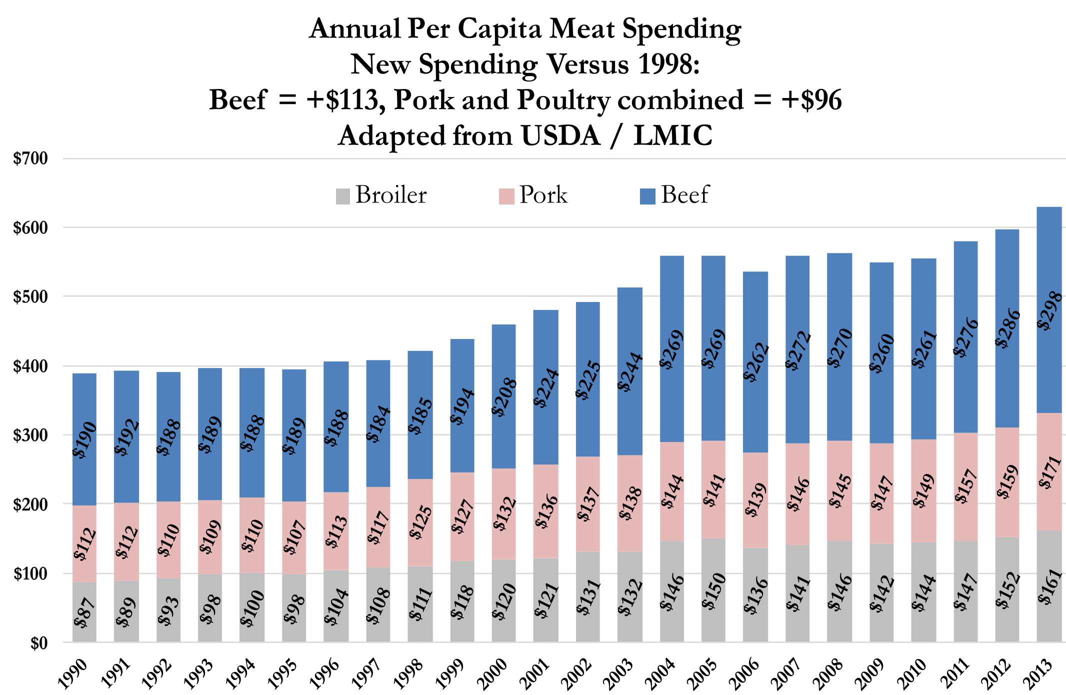
At the outset, amidst global financial uncertainty, the U.S. dollar spiked for a brief period of time (a general flight to safety), during which the USD/AUD exchange rate moved from par (1.0) to almost 1.6 in just five months. Then the influence of the first round of Quantitative Easing (QE1) in late 2008 began to have its full effect in mid-2009 and sharply devalued the U.S. dollar beginning in March 2009. The Federal Reserve's program was reinforced in late 2010 with QE2. Accordingly, the USD/AUD steadily declined through the middle of 2011.



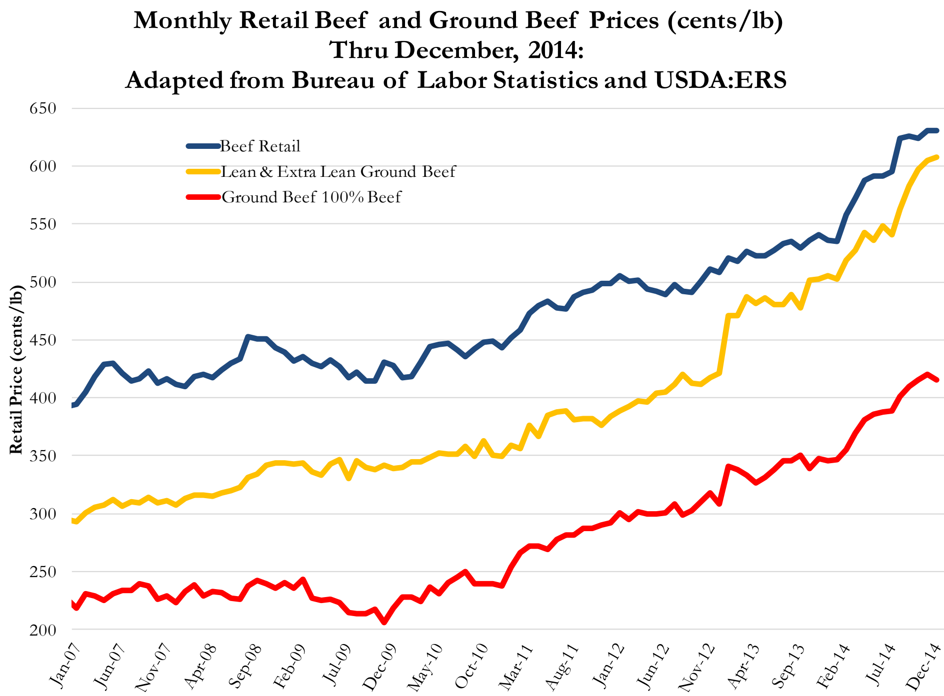
This ultimately forced ground beef suppliers to increasingly procure product from domestic sources. That dynamic helped underpin the cull cow and bull market to generate a bigger supply of domestic trimmings. And then finally, the lean trimmings market was confounded even further during spring 2012 with the shutdown of BPI Products Inc., though it does explain the market's move higher in 2012. Grinders were in the market looking for lean trimmings to blend with 50/50 trim, as many of those grinders had been including 10-20% LFTB in their ground beef products.

Ground Beef Market

The foundation of prosperity for the cattle business rests upon consumer demand for beef products – including ground beef. Protein spending has changed over time, with beef capturing more new spending than pork and poultry. Since 1998 (the low-point of beef demand), consumers have increased beef spending by $113/person – nearly $20 ahead of cumulative new spending for pork and poultry. In other words, the beef sector is garnering an increasing share of protein sales.



This last year was especially important for its new price records across all classes of cattle and beef products. In fact, 2014 witnessed a key threshold: The Bureau of Labor Statistics (BLS) data placed monthly ground beef prices at $4.013/lb in August – the first time the price series eclipsed the $4 mark.



The figure above highlights price trends for overall retail beef prices, lean and extra-lean ground beef, and ground beef, respectively. Several key factors are noteworthy: Ground beef trades in a heterogeneous market. Not surprisingly, within that segmentation, consumers have exhibited increasing willingness to pay higher prices for leaner beef. Furthermore, that market has also been boosted from the supply side and gained some price support in recent years, primarily due to the loss of LFTB and declining slaughter.

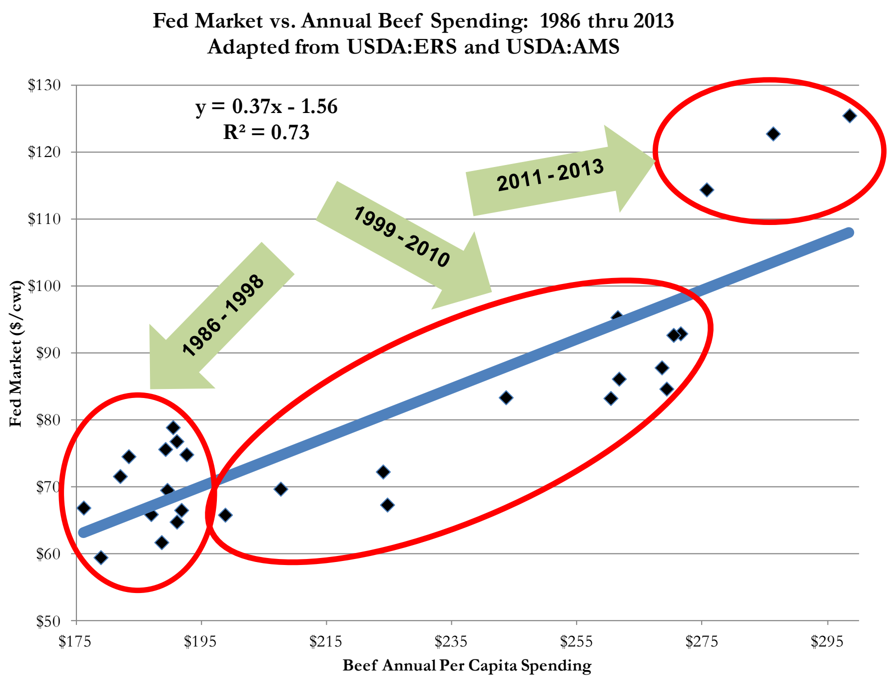
Enhanced value in the ground beef category has been especially important to the industry's overall prosperity during the past ten years. Ground beef is a significant component of beef's total volume and an important contributor to consumer perception. Moreover, it's the primary category that most directly competes with pork and poultry (from a cost perspective).

What's more, despite the parallels among pork, poultry and ground beef from a pricing standpoint, the beef industry has managed to differentiate the ground beef category. That premise is further underscored by Mark et al. (2014):

> *…demand for the premium brand is not affected by the economy and continues to grow despite periods of both contraction and expansion. This finding is counterintuitive, because we expect the sales of premium brands to decrease during a recession. More importantly, we find support for cross-category indulgence, in that there was a significant positive substitution effect between dining in and dining out even after controlling for income effects…This research is important because it emphasizes the need for premium and luxury brand managers to promote the quality and leadership positions of their brands, especially during a weak economy. Because consumers' desire for hedonic consumption persists despite the economy, some consumers will use cross-category indulgence to satisfy this desire. Premium brand managers that recognize this marketplace behavior and promote their brand [or product] accordingly, may experience an increase in demand for their products even during a recession.*

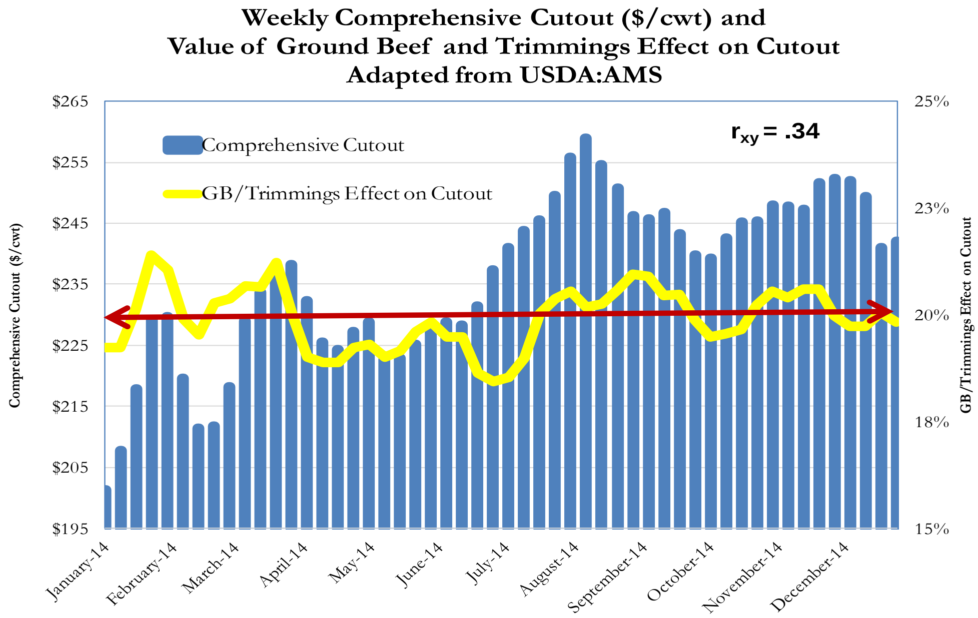
Stated another way, the beef industry has been successful in beating the "Commodity Trap" (as defined by Sheth, 2010); Sheth's description of the deterioration trap is one in which low-cost players (e.g. pork and poultry) disrupt the status quo. As such, the higher cost competitor can't match low-end rivals due to their advantages of economies of scale and cost structures. And even if they could, it would accelerate the deterioration as the low-cost products simply use their advantages to punish the competitor. Therefore, the high-end competitor is best suited to turn the trap to a competitive advantage and "contain the low-end players' market power to the low end."

That reality pays real dividends for beef producers. The figure below details the relationship between per capita spending and fed cattle price, but let's be clear that this is not, nor is it intended to be a direct reflection of beef demand. The graphs underscore the importance of total dollars being spent by consumers on all beef products and total dollars coming into the industry.



However, from a producer perspective, the most critical aspect to deriving the fed cattle market revolves around cutout values that include *__all__* beef products – both whole muscle and ground beef or trimmings. Wholesale prices are the most direct translation back into live cattle values at any given time. And within that framework, ground beef and trimmings as a component of the overall wholesale market remains relatively muted.

That's best demonstrated by new data available through USDA. The agency's comprehensive cutout value increased nearly 25% in 2014 (from ~$200/cwt to $250/cwt). Meanwhile, USDA began reporting in 2014 the portion of the cutout value attributable to ground beef and trimmings; that percentage has consistently run between 20-21% of the total cutout .



The "Grinding Steer" Concept

As noted, *Ground Beef Nation* (GBN) raised some key questions about the beef industry's competitiveness. The paper provided alternative scenarios for the beef industry to consider in an effort to more efficiently address consumer demand. Perhaps most notable was the concept that the industry should consider moving towards a structure in which:

"Between one-third and one-half of [young] animals should be raised primarily for ground beef, by shorter-feeding cattle on a lower energy ration."

That reference is to non-breeding animals slated for harvest at a young age, would likely encompass some 8 to 12 million beef steers and heifers annually. To facilitate such a shift, lower quality-grade-potential animals would have to be identified by some means, then short-fed on lower-energy rations to produce the targeted leaner (and lighter) carcasses. The proposal contends the industry could potentially lower production costs while better meeting consumer demands, thus becoming more price competitive.

In response, at least two logical questions should be asked:

(1) Would such redirection result in greater revenues and/or lower production costs within the beef industry?

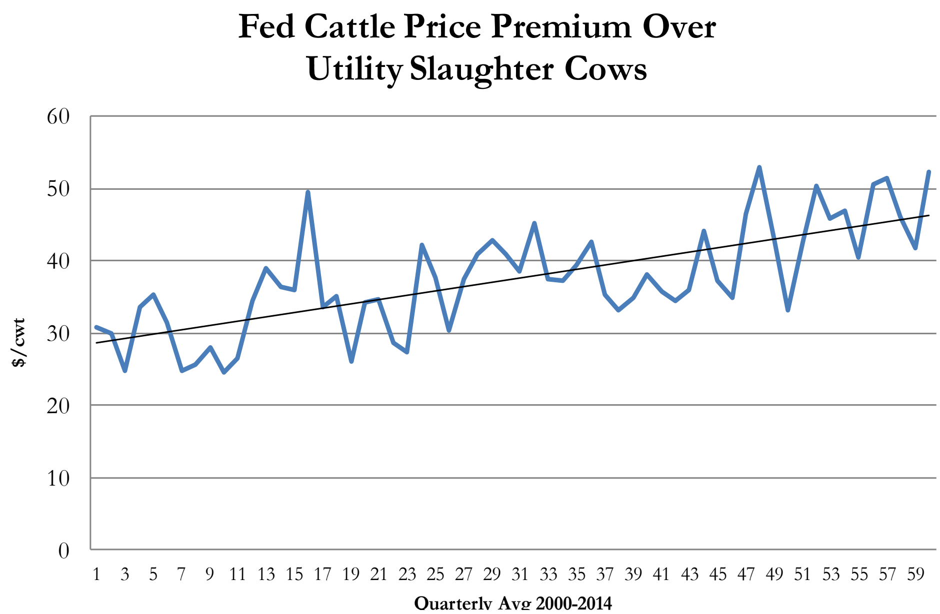
(2) How could cattle feeders, packers and other producers have perpetually failed to recognize this opportunity to make their businesses stronger and more profitable, if it really does exist?

The second question becomes largely rhetorical, as economic analysis will lead to the conclusion that suggested changes would never be attempted in an open-market economy such as that currently in place in the U.S. Were this alternative model imposed by forces outside the market, it would reduce industry revenues, elevate production costs and unnecessarily raise consumer beef prices. Instead of becoming more competitive and more aligned with consumer demands, beef producers would find themselves in an unproductive state with strong financial incentives to revert back to doing business exactly as they are today. Cattle feeders and packers are already listening closely to beef consumers and have structured their business actions appropriately.

"Grinding Steer" Concept - Revenue Impact

As highlighted above, retail beef prices across all cuts and products averaged more than $6 per pound in 2014 (and as noted earlier, ground beef crossed the $4/lb threshold in 2014). Voluntarily shifting a greater percentage of production toward a lower-priced part of the beef case would have a negative impact on profitability. There is simply no way to increase total revenues by selling more pounds at a lower price while simultaneously marketing fewer pounds of higher-priced items.

We gain further perspective by comparing historical fed cattle prices to the cull cow market. As shown in the chart below, fed cattle have been trading at a growing price premium versus cows over the past 15 years. Even in 2014, when cow slaughter dropped 14% to its lowest level in a decade, the fed cattle price advantage continued to widen (Source: Cattle-Fax).



Fed cattle carcasses are comprised of a higher-percentage of beef cuts (including some high-value and premium-priced cuts), and proportionately less trim and grind. Cows are the opposite: fewer merchantable muscle cuts and a significantly higher percentage of the carcass finding its best use in the grinder.

Short-fed cattle aimed for lighter and leaner harvest (targeting more grinds) would obtain an intermediate price, lower than traditionally fed cattle, but higher priced than cull cows. They would produce fewer marketable beef cuts and more ground beef as intended, but in doing so would shift downward to a lower price plane, greatly devalued versus their potential as traditionally-fed cattle.

For discussion, we might assume that half of the 2014 fed cattle price premium over the cow market could have been captured by a short-fed steer harvested at perhaps 1,100 pounds. Fed cattle traded more than $40/cwt. above cows last year on a live weight basis, so the ground-beef-oriented steer would be priced at least $20/cwt. less than a normal fed steer. That represents a potential devaluation and decline in revenue of more than $200 per head, certainly bringing no opportunity for *increased* revenue.

Undoubtedly, some animals possess little potential for earning premiums. They represent a distinct cost to the industry from a quality perspective and greatly influence averages across the industry. However, the beef industry is limited in its capability to efficiently identify steers and heifers for an alternative track.

Perhaps the first challenge is establishing an industry standard or widely accepted working definition of poor quality. If the best definition revolves around an inability to reach at least the Select quality grade, very few animals would qualify. USDA data pegs cattle grading sub-Select at just 5.4% of all cattle quality graded since 2010. A portion of those failed to reach Select due to sickness, leaving an even smaller percentage genetically incapable of doing so. Attempting to draw that line at "incapable of reaching Choice" creates a much larger set of problems in sorting, given the unknown potential of most cattle today. And it's important to note that the 2014 USDA Select cutout price averaged $24/cwt higher than the cow cutout.

As such, no sizable pool of very-low-quality cattle exists and therefore cannot be identified and then "sacrificed" in the name of making more ground beef. Moreover, there are no aggregate economic signals to redirect animals into an alternative production scheme. As shown by the short-fed animal discount of more than $200 per head, there is no incentive to intentionally create such cattle at the ranch level. A much better solution is to keep improving low-quality cowherds by breeding them to bulls with high-quality genetics. Then each successive calf crop can create as much value as possible---reaching not just the Select grade, but the higher, better paying grades as well.

"Grinding Steer" Concept - Production Cost Impact

There is no revenue-increasing opportunity for short-feeding a sizable portion of the beef industry's steers and heifers. But might there be a decrease in production costs? Perhaps less feed expense would offset the declining revenues.

The key consideration is not just feed saved per animal, but *unit-cost* of production: Dollars spent per pound of live weight and/or beef produced. A breakeven production cost provides us with the right metric for this type of comparison, and the lower the better when it comes to breakevens.

Breakeven on a 750 lb steer costing $225/cwt

	Breakeven (cwt.)	Weight (lb)
Day of Purchase	$225.00	750
After 88 Days on Feed*	$179.11	1098
After 175 days on Feed **	$163.32	1341

* Shortened feeding period of 88 days at $80/cwt cost of gain
** Traditional feeding period of 175 days at $85/cwt cost of gain

As shown in the accompanying table, reducing days on feed leads to higher (not lower) breakevens. The table compares steers going on feed at 750 pounds for either 88 days or 175 days. The current practice, 175-day feeding, results in the lowest breakeven, because the purchase price of the steer is "cheapened back" further by adding more low-cost pounds in the feedlot. Even with an assumed lower cost of gain, the short-fed steer ends up with a higher breakeven. Ultimately, fewer reduced-cost pounds are added in the feedlot to offset the high price of the initial 750 pounds that were purchased at $225/cwt.

Growing the short-fed animal on a forage-based diet will not change the underlying breakeven disadvantage this approach inevitably encounters. The assumed cost of gain in this analysis could be unrealistically cut in half (from $80 to $40/cwt) and short-feeding would still result in a higher breakeven compared to the traditional feeding period.

The only possibility to meet the breakeven requirement is by substantially reducing the purchase price of the feeder animal for steers and heifers targeted toward the hamburger model. Normal functions of the market do not stimulate production of more animals with significantly lower planned value. No cow-calf or stocker operator would produce or sell calves and feeder cattle at a discounted price just so a revenue-reducing, less cost-efficient system could be used to make more ground beef.

"Grinding Steer" Concept - Beef Tonnage Impact

If followed en masse, one consequence of the grinding steer model would be to reduce overall beef tonnage. Lighter carcass weights on short-fed versus traditionally fed cattle would lead to fewer pounds of beef on the market. Suppose 250 to 300 pounds of live weight per animal was subtracted via short-feeding on 5 million head of cattle annually (that represents about 20% of actual steer and heifer harvest in 2013 and 2014). Carcass weight beef supplies would decline by 750 to 900 million pounds, 3.1% to 3.8% of yearly beef production. The result would be an artificially created supply shortage beyond that currently being experienced. A further run-up in retail beef prices could be expected, unnecessarily widening the retail beef price premium versus pork and chicken. Not a good outcome by any perspective, especially given that lower quality beef is most susceptible to substitution for other proteins.

"Grinding Steer" Concept - Overall Impact

Ground Beef Nation made for some interesting discussions about industry structure and rationale, undoubtedly increasing awareness of the significance of the ground beef category. Moreover, it challenged the industry to take a fresh look at current practices and help avoid complacency in the face of current success. Cattle feeders and packers in recent years have greatly improved their responsiveness to requirements established by the end-users at the wholesale, retail and food-service level. There's always room for improvement, but there are no "big misses" in what the industry is doing today.

An Effective and Efficient Marketplace

Responding to the market, feedlot managers have increased the number of days they kept cattle on feed during the past 15 to 20 years. Average time on feed for a 750-lb. steer stood at 151 days in 1995. By 2014, that had risen to 175 days (Source: Professional Cattle Consultants). Why? Because more of the nation's fed cattle were being marketed on carcass-merit pricing systems, and because of improved growth genetics that allow cattle to be fed efficiently to heavier weights. Feedlot managers learned quickly when they started marketing cattle on grids and formulas that added days on feed meant more dollars in their pockets.

Grid- and formula-marketed animals are affected by more time on feed in the following ways:

- -Heavier live weights
- -Heavier carcass weights
- -Higher dressing %
- -More back fat and larger rib-eye areas
- -Higher numeric Yield Grades (lower red-meat yields per pound of carcass beef)
- -Increased marbling and higher Quality Grades
- -Higher value per carcass and increased profit per head aligned

These effects actually resulted in a net decline in the percentage of lean trimmings from each fed steer and heifer. However, the overall value of these animals went up significantly, because of the beneficial increase in the percentage of higher-priced cuts they produce.

Marketing more fed cattle on grids/formulas placed cattle feeders in close alignment with the wholesale beef market. They responded by giving the market more of what it was asking for and were rewarded accordingly. More high-quality cuts and less lean grinding meat is a higher value mix for fed cattle. That is what the market has been communicating to the cattle production sector, and cattle feeders have heard this message and responded in the appropriate manner via added days on feed. In general terms, this also explains why the industry has been selecting for higher marbling genetics that perform well both in the feedlot and on the rail.

In addition to the cattle feeder, packers listen closely to the beef market every hour of every day. Their success depends on maximizing the value of every piece and part of each carcass they fabricate. There are choices to be made. Packers work hard to produce the optimal mix of cuts and grinding meat in an ever-changing market environment. Some intermediate and lower value cuts are occasionally more valuable when directed toward ground beef. Constant comparisons on the price of these cuts versus their value as ground product are made. The most commonly ground cuts flex back and forth between being sold in muscle-cut form or as grinds.

The table below provides perspective on how frequently some of these most commonly ground cuts have potentially been more valuable in ground form. When the price of a given cut (adjusted to a 90% lean basis) drops below the price of 90-percent lean trimmings (90s), it may make sense to grind such cuts into hamburger for maximum revenue capture. Conversely, when the price of these cuts is above the price of 90s, they will almost always be sold in muscle-cut form.

Note that from 2004 to 2014, the average value of these cuts when adjusted to a lean equivalency was worth more in ground form at a weekly frequency of about 12%. That means for 88% of the weeks covered in this time period, selling them as cuts – not grinds –was economically advantageous. Last year was a bit different in that most of these cuts were priced such that they could (and likely were) ground about twice as often, but 90s hit record-high prices in 2014 as U.S. cow slaughter dropped more than 14% compared to the previous year. The 170 Gooseneck Round, for example, was quite possibly more valuable in ground form about two-thirds of the year.

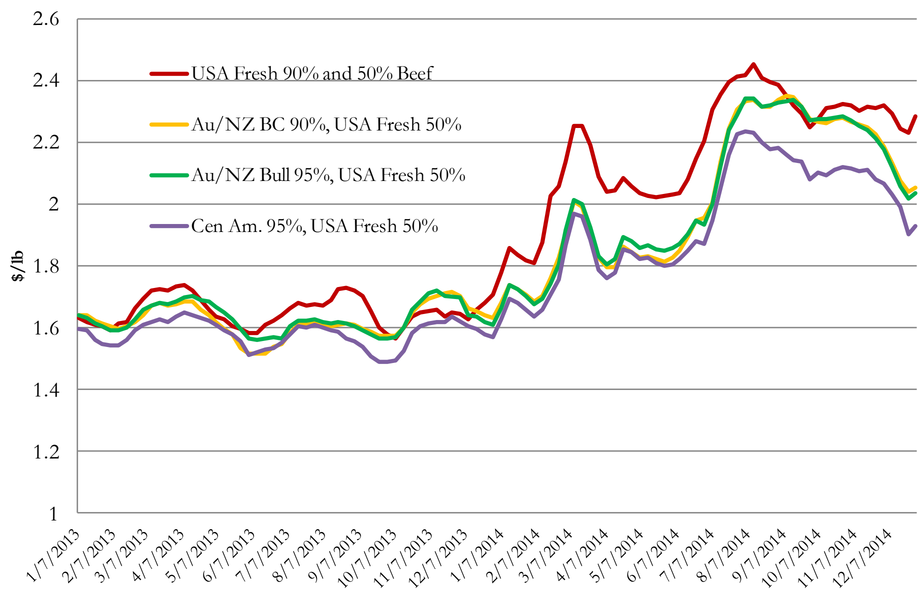
Substitution Options of USDA Select Cuts for 90% Lean Trimmings		
	% of Weeks Lean Equivalency Value Less Than 90s	
Most Common Cuts for Grinding	**Jan 04 - Dec 14**	**2014**
Cap & Wedge Meat	5%	4%
Pectoral Meat	3%	0%
113C 1 Semi-boneless Chuck	25%	25%
114 1 Shoulder Clod	18%	34%
114A 3 Shoulder Clod Trimmed	5%	11%
116B Chuck Tender	16%	30%
170 Gooseneck Round	29%	68%
167A Knuckle	8%	28%
168 Inside Round	12%	34%
169 5 Denuded Inside Round	0%	0%
Average of Ten Cuts	**12%**	**23%**
		Source: USDA and CattleFax

While not perfect, this comparison communicates a powerful message about how packers manage their production mix when it comes to cuts and grinds. Market economics called for more frequent grinding of these cuts in 2014. Packers answered that call by shifting their mix toward more lean trimmings. They have the understanding and production capability to get that job done right, and are constantly analyzing various market opportunities to maximize the value of each of these ten cuts and hundreds of others.

We recognize that 2014 was an extreme year, with domestically-produced lean beef trimmings in very short supply. Beef imports increased 30% over 2013 to help satisfy this shortage. Yet the price of these ten commonly ground cuts dropped below the price of 90s only 23% of the time. The other 77% of the time, they were more valuable in cut form—and that includes cuts in the Select grade. There was actually excess capacity to produce more lean trimming meat from these cuts than was needed. Due to strong demand and strong prices for these cuts in muscle-cut form, packers would have de-valued these cuts had they more frequently converted them to ground form. Ramping up imports was the less expensive alternative.

The chart below shows the comparative costs to produce a 75% lean patty using raw material of various sources. When evaluating least cost options, U.S.-produced lean and fat has historically been higher priced than blending imported lean material with U.S.-produced 50s.

Raw Material Costs to Produce 75% Lean Ground Beef



An important observation from this analysis is that the U.S. beef business is already structured with great flexibility. Packers are willing and able to make more lean grinding meat out of domestically-produced beef cuts if economics dictate. At the same time, they will continue to sell middle- and even lower-value cuts in cut form when the market says that is the best value opportunity available. Price is the determining factor in driving packer decision-making on a daily and weekly basis, as it should be, because price is the best reflection of consumer demand.

Conclusion

There is no question that ground beef is an important part of the U.S. beef market. Flexibility and a relatively low price point are just two of its attributes that consumers appreciate. Who doesn't like a good burger now and then? Ground beef helps the beef industry compete more favorably with pork and poultry, which is why domestic and imported grinding beef will continue to play a huge role in the overall beef business.

Undoubtedly, part of the advancement in beef spending overall is due to successful efforts to de-commoditize the ground beef category. Despite industry concerns about consumer resistance to higher retail prices, beef has continued to wield pricing power in the meat case. The industry's long-run commitment to quality, consistency and customer satisfaction has underpinned stronger beef demand across all categories of beef, especially ground beef. As such, the beef industry is more and more favorably positioned within the protein market going forward.

However, top prices for ground beef remain $2/lb. below overall retail beef prices. While ground beef represents nearly 60% of total volume, it is consistently only about 20% of total value at the wholesale level. It is a growing market category, but that relatively small share of total revenue voids any perception that young animals should be aimed, solely or mostly, toward hamburger.

There is no empirical evidence that a sizable portion of the U.S. beef supply chain should be permanently changed to directly target ground-beef production. Shifting away from muscle cuts to a higher percentage grinding beef would reduce revenues, increase production costs and artificially raise consumer-level beef prices by reducing beef tonnage. Such a change would be a mistake.

END