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Ground Beef Nation: The Effect of Changing Consumer Tastes and Preferences on the U.S. Cattle Industry

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U.S. consumers want ground beef. Over the last 40 years, the U.S. has become a nation of consumers who eat an escalating share of their beef in ground form. Burgers, sauces and tacos are on the plates and in the drive-thrus of Americans, while at the same time, the U.S. cattle industry is operating within an infrastructure that pays a premium for high-performing cattle. This contradiction must change for beef to remain competitive with other proteins and for the industry to remain as efficient and profitable as possible. Early identification of end use, and managing the choice/prime and select grade animals in a manner consistent with their best end use, is key to the U.S. cattle industry developing a long-term, sustainable future.

- **U.S. consumers' beef preferences have shifted dramatically in the last 40 years toward ground beef items, due to both price and convenience.**
- **The U.S. cattle industry remains structured around producing high-end, choice and prime grade products.**
- **The current structure makes ground beef and other select grade product much less competitive with other proteins.**
- **In order to make the beef production industry more efficient and competitive, the end-use of cattle should be determined as early as possible and the animals directly managed toward the end goal.**
- **Between one-third and one-half of the animals should be raised primarily for ground beef.**

Introduction

In the late 1990s, in an effort to improve beef's consumer image, the industry adopted the goal of ensuring a quality eating experience each time a beef product was consumed. This shift to a consumer-focused mind set, along with the introduction and popularity of the Atkins diet, are largely credited with curbing the decline in beef demand that had been taking place since the mid-1970s.

Despite the fact that the U.S. has since become an overwhelmingly "ground beef nation", the beef production model has changed very little over the years. Little consideration has been given to which cuts of beef consumers are selecting and why.

Preferences and buying habits of U.S. beef consumers have changed significantly since the 1970s. Consumers increasingly seek ingredients for quick meals, grab a quick burger on the go, or simply shop for value. The industry production model must follow suit.

The quality-focused production model means most cattle are currently managed to target the choice grading standard, with little consideration for the changing tastes and preferences of this nation of ground beef consumers. To remain competitive in this ground beef nation, the industry must change with the times to a production model that more carefully aligns the product with its intended end use, as early as possible in the process. This categorization for best end use will influence calf selection, cattle management, production costs and feeding regimens throughout the life of the animal.

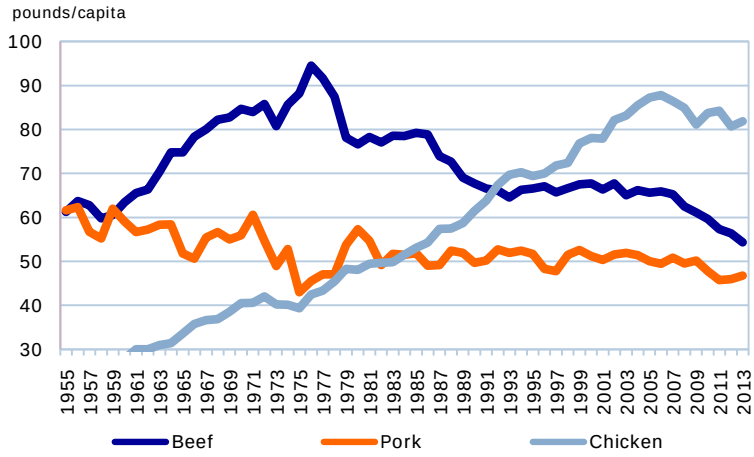
Consumers Selecting Less Beef

In the mid-1970s, cattle numbers were high and Americans were eating a substantial amount of beef. However, U.S. cattle numbers peaked in 1974 with total inventory estimated at 134 million head, and immediately following, U.S. per capita consumption peaked at just below 95 pounds per year. From 1974 to 2008, per capita consumption

dropped to around 67 pounds. From 1993 to 2007, per capita consumption stabilized and even recovered slightly from 65 pounds to 67 pounds.

In 2008, U.S. consumers were dealt a blow in the form of the housing crisis and recession. Also that year, cattle producers were dealing with a drought that forced accelerated liquidation in total cattle numbers and an escalation in feed grain prices that reduced supplies and raised prices. As a result, beef consumption habits resumed the ominous downward spiral, dropping 3 pounds that year. Since 2008, consumption has continued to plummet and is expected to drop from 54 pounds per year in 2013 to 53 pounds in 2014 (*see Figure 1*).

Figure 1: Annual U.S. Retail Meat Consumption, 1955-2013



Source: USDA, LMIC, 2013

Beef: Pricing Itself Out of the Protein Market?

Although it may not be simple to pinpoint an exact reason for the dramatic decline in U.S. beef consumption as the situation is complex, it can be broadly attributed to a few key drivers: cost, convenience, and quality.

It has been argued that the decline in U.S. beef consumption was due to quality. However, this argument is not supported by objective measures of quality, such as the percentage of choice and prime cattle in the grading mix, which has steadily increased despite the inexorable decline in per capita beef consumption (*see Figure 2*). Choice and prime grade carcasses have increased from just over 50 percent of fed slaughter in 2006 to over 70 percent in 2013. While some argue that the decline in beef consumption would be even more dramatic if quality had not improved, it is obvious there is more driving the decline in consumption.

Figure 2: Choice and Prime Grade Beef Growing in Overall Shrinking U.S. Market, 2004-2013

Source: USDA-AMS, 2013

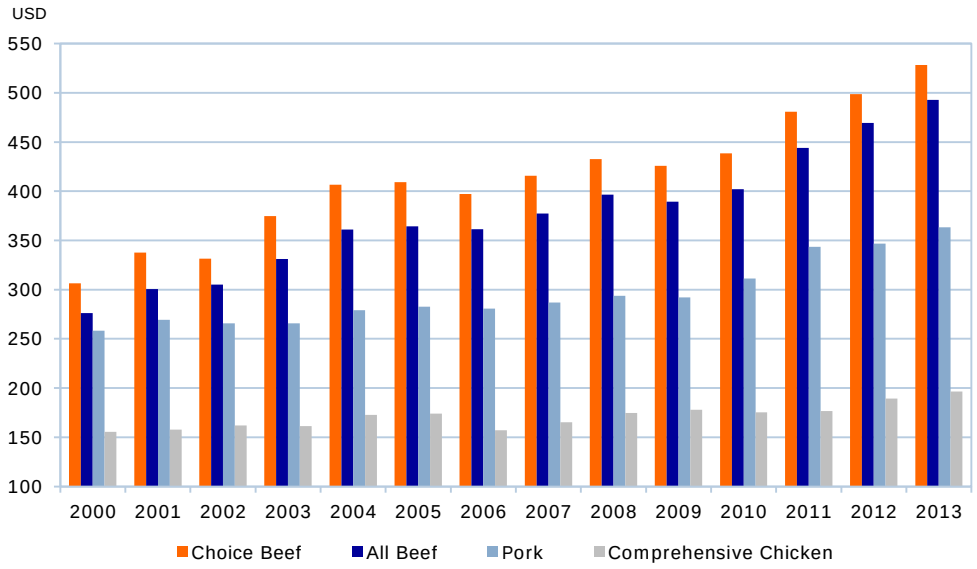
Cost is a more likely driver of the continuous decline in beef consumption; especially when compared with other competitive proteins. The pork and poultry industries have grown in scale and efficiency, which has made their products more readily available at competitive prices.

Relative prices are a key factor driving consumers to substitute other proteins for beef. The increase in retail beef prices relative to competing meat prices has simply driven consumers to more competitively priced protein options.

Using non-deflated prices from 2000 as a baseline, the composite chicken prices increased an average of 2 percent per year over a 13-year period, for a total of 24 percent. Retail pork prices saw an average increase of 2.7 percent per year over the same period, with a total increase of 41 percent. Choice Beef prices, by comparison, increased at an annual average rate of 4.4 percent with a total increase of 72 percent, while All Beef prices posted a total increase of 78 percent or 4.6 percent annually (*see Figure 3*).

While the cross-protein price comparison clearly illustrates one reason for the declining total beef demand, it is far from the entire story. All Beef prices, as measured by the Bureau of Labor Statistics (BLS), have been escalating at a faster rate than Choice Beef prices, indicating that while consumers continue to demand beef, they are increasingly selecting lower priced beef options.

Figure 3: Annual U.S. Retail Meat Price by Species, 2000-2013



Source: USDA-ERS, 2013

Ground Beef Winning Consumer Interest

Changing consumer tastes and preferences have led U.S. consumers to spend their discretionary food dollars on fewer high-end, high-quality Middle Meats.[1] While beef demand has held up reasonably well despite higher price increases relative to alternative protein sources, changing tastes and preferences are causing shoppers to choose more competitively priced items when purchasing beef.

Data published by the Beef Checkoff indicates that in 2012, domestic beef consumption on a ready-to-eat basis was just over 15 billion pounds. Nearly 8 billion pounds, or 52.66 percent, was consumed in the foodservice sector and 7.13 billion pounds was through retail purchases. The data also shows that 63.8 percent of the beef consumed in the foodservice sector was some form of ground beef, while in the retail sector, which accounts for 46.9 percent of total beef consumption, 49 percent of the beef consumed was in the form of ground beef. According to the study, combined consumption of beef in both sectors was 57 percent ground products. However, according to reports from sources in the retail sector, Rabobank believes that retail ground beef consumption could in fact be as high as 60 percent of all retail beef sales.

[1] Middle Meats are cuts from the Rib, Loins and Sirloin that are typically the high priced items.

Based on the core data from the Beef Checkoff and the additional Rabobank retail beef sales research, we estimate ground beef as a percentage of all domestic beef consumption to be close to 62 percent. The conventional wisdom was that ground beef comprised around 50 percent of total consumption. By any analysis, this proportion of ground beef consumption is astonishing and presents enormous implications for the U.S. beef cattle industry.

Cost and Convenience Driving Up Ground Beef Demand

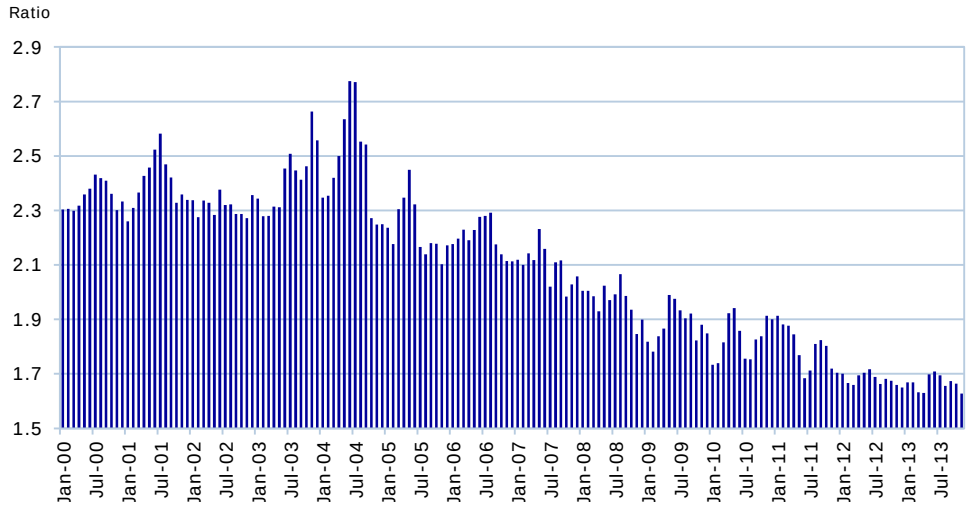
So why are U.S. consumers moving so rapidly toward consuming beef in ground form? Several factors explain the remarkable upsurge in ground beef consumption.

- Price differentiation between beef cuts is the primary driver behind beef consumers downgrading their beef purchases to less expensive ground beef.
- Aside from traditional steakhouses, beef choices away from home are not radically different from what is prepared and eaten at home.
- The vast majority of consumers do not pre-plan meals, deciding on the content of the evening meal shortly before it is prepared. This leads consumers to purchase protein items that can be prepared in a limited window of time. Ground beef is well suited for quickly-prepared meals.
- Scant preparation skills lead consumers to purchase a limited number of cuts.

Growing Ground Beef Demand Altering Beef Price Relationships

Retail data, published by Bureau of Labor Statistics and USDA[2], illuminate a radical shift in the price relationship between all steaks and all ground beef. Historically, all steak prices traded in a range of 2.3 to 2.7 times that of all ground beef (*see Figure 4*).

Figure 4: All Steak Price over All Ground Beef Price, 2000-2013



Source: BLS, 2013

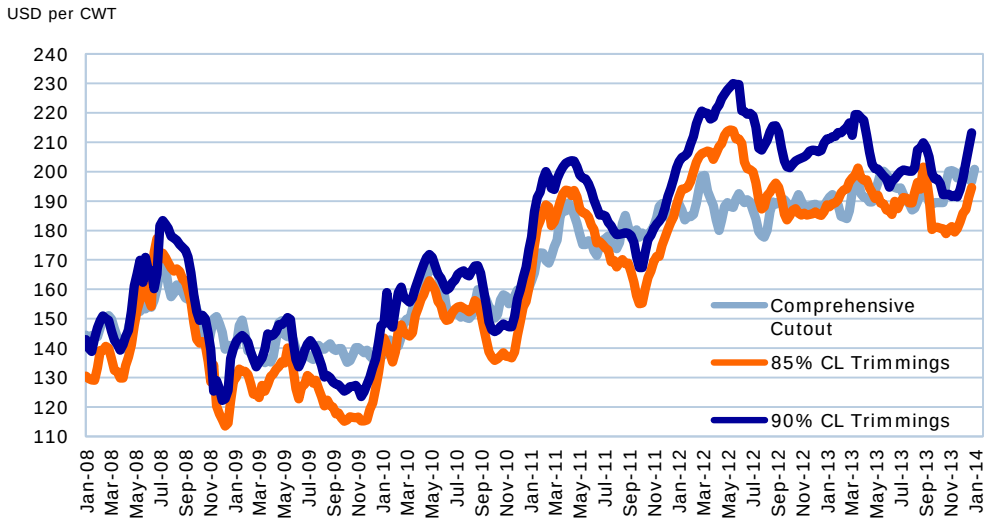
However, in 2004, the price relationship between steaks and ground beef began narrowing. By 2013, the price of all steak was just under 1.7 times the price of all ground beef. Interestingly, while all beef prices have increased, the change in the relationship has been entirely driven by strengthening ground beef prices. The narrowing price relationship is far from being settled and we expect the trend to continue for the foreseeable future, highlighting that convenience and price are becoming as important as quality to the U.S. beef consumer.

Long-held conventional thought regarding cattle management and production practices is that cattle must be fed to meet the optimal grading rate in order to capture the value of the middle meats. As a result, the cattle management decisions and cattle feeding regimens are structured to support the 20 percent of the carcass that is the Rib and the Loin, or the 27 percent that is Rib, Loin, and Sirloin. Where the remaining 73 percent to 80 percent of the carcass is concerned, the requirement to meet a grade choice or better is often irrelevant, and in the case of some beef primals, may be a detriment.

[2] The price relationships are calculated using Bureau of Labor Statistics Monthly Retail Meat Prices which are published by USDA's Economic Reporting Service (ERS)

Historically, beef trimmings, the components from lean beef sources, and fat trimmings that made up the ground beef supply, consistently sold at a discount to the Comprehensive Cutout. The combination of lean trimmings and 50 percent trimmings that are used to meet all the combined ground beef blend points were viewed as lower value components (*see Figure 5*).

Figure 5: Comprehensive Cutout, 85CL & 90CL Trimmings



Source: USDA-AMS, 2013

However, over the past five to six years, the value of lean trimmings has consistently traded at a premium to the over-all cutout. The premium to lean trimmings indicates that there have been changes to what consumers want and what they are willing to pay for. It also suggests that if the ground beef products are consistently selling at a premium to the Comprehensive Cutout, there is clear economic incentive for the industry to adjust and to provide those desired products in the most economically efficient way possible.

Costly Fed Beef Cuts Are Increasingly Supplying Ground Beef Demand

One of the biggest factors inhibiting greater efficiency in the beef industry and limiting its ability to compete with competitor proteins is the growing percentage of fed beef primals that end up in the marketplace as ground beef. As previously discussed, today some 62 percent of beef consumption is in some form of ground beef, while only 20 percent is rib and loin. Of the remaining 18 percent, around half will come from the popular items of sirloin, briskets, flanks, and short ribs, with the rest in some form of non-middle meat muscle cuts, which in many instances will end up being sold as ground product. The point is that while over 60 percent of the carcass can find its way into lower value or ground products, the production model requires most of these animals to be fed an expensive ration that aims to perfect the quality of, at best, 30 percent of the carcass. Essentially, the industry is producing an extraordinarily high-grade product for consumers who wish to purchase a commodity. This is the crux of the problem. Beef is expensive to produce and is becoming increasingly uncompetitive.

Sources For Additional Grinding Material Are Limited

The trend toward grinding fed beef muscle cuts is likely to continue for the foreseeable future as we see little likelihood of additional conventional supplies of lean beef products coming to the market. The conventional source of ground beef in the U.S. is 50 percent chemical lean (CL) trimmings from the fat produced in fed beef production combined with 90 percent CL trimmings from cow beef, bull beef or from imports of lean beef trimmings from Australia, New Zealand and a few other markets.

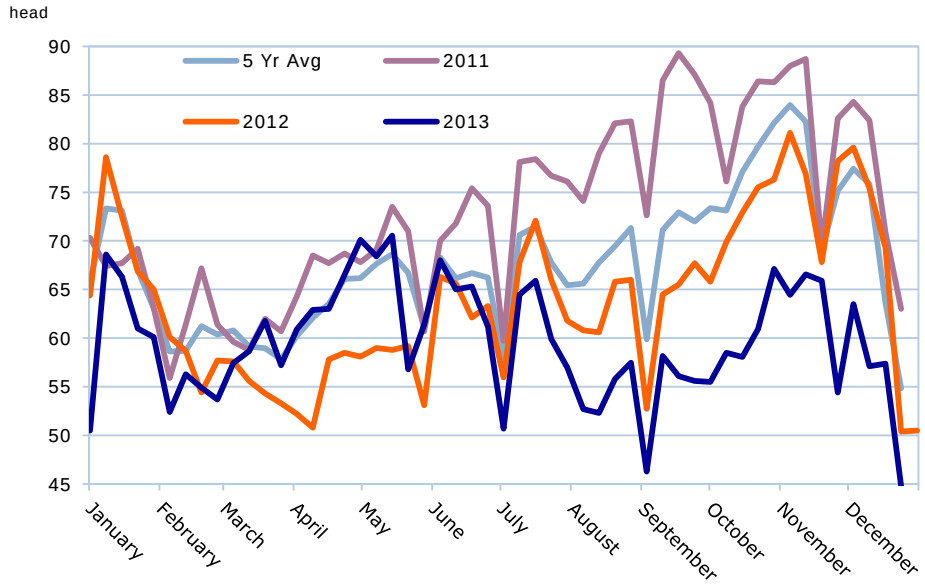
Cow slaughter in the U.S. in recent years has been elevated from the long-running liquidation of cows and bulls due to poor economics. Since 2011, that supply of cows and bulls has accelerated the rate of liquidation due to drought over much of the U.S. cow production areas.

The combination of record calf prices and much-improved pasture and range conditions has sharply curtailed the liquidation of breeding stock. During the second half of 2013, weekly cow slaughter averaged a 14 percent decline from the second half of 2012. That reduction in cow slaughter has been the result of producer retention for the purpose of rebuilding herds (*see Figure 6*). Consequently, expectations are that beef cow slaughter could see year-over-year double digit declines through all of 2014, which could carry over well into 2015.

There are three realistic options for increasing lean beef supplies: process more cows and bulls, increase the amount of lean beef imports, or grind more whole muscle cuts from the fed beef supply. Any additional liquidation of the breeding herd is unlikely given anything close to normal weather conditions, as well as unwise for the long-term stability of the industry.

Increased imports of lean beef are a likely possibility. Both Australia and New Zealand suffered drought conditions in 2013 and the Australian drought continues in 2014. New Zealand's weather conditions stabilized and improved late in the year, and that has enabled conditions to stabilize. Australia suffered a severe drought, which led to the largest annual slaughter in 34 years. New Zealand's imports of beef for 2013 were up 8 percent and will likely be near unchanged in 2014. Australian beef shipments to the U.S. are down 7 percent for 2013 and are expected to be smaller in 2014. Australia beef shipments to China are up in excess of 623 percent for the year. The combination of liquidation and the established trade relationship to China will likely lead to smaller shipments to the U.S. in the years to come.

Figure 6: Beef Cow Slaughter



Source: USDA, 2013

One prospect that offers some chance of increased supplies in the medium term comes from announcements in recent weeks that could make notable changes to U.S. beef imports. USDA-APHIS announced in December and posted to the Federal Register a proposal that the U.S. will accept fresh beef from 14 Brazilian states, with the opening shipments expected by mid-year 2014. This is the first time uncooked Brazilian beef has been allowed into the U.S. At this time, the proposal for accepting fresh Brazilian product is open for comment and receiving strong opposition from industry groups due to fears that the imported beef shipments could bring foot-and-mouth disease to the U.S.

Also in late December, there was an announcement that private industry, with economic aid from the Mexican federal and Durango state governments, is planning to build a large cattle feeding and processing complex in Durango, designed to export 60 percent of the plant's production. Implementation of these two initiatives will likely be game changers to U.S. beef imports and exports for years to come.

The bottom line is that beef imports from conventional channels are expected to be limited at best and likely more expensive. New trade developments and policies are expected to open the U.S. to supplies of beef from Central and South America. Alternatively, the U.S. can adapt traditional production practices and supply the product that meets the changing consumer demands of the domestic market.

How to Keep the Ground Beef Nation Competitive

The U.S. consumer wants ground beef. Under the existing industry model, the U.S. cattle industry manages almost all fed beef as if it was destined for the center of the plate at a white table cloth restaurant. However, the data shows that an excess of 60 percent of total beef consumption ends up finding the consumer in some form of ground product. If the industry is to be healthy, it would be wise to listen to the customer and adapt to the new reality. Continuing to produce ground beef in a business model designed for high-end cuts will result in the continued erosion of market share for U.S beef, both domestically and abroad.

The future for the U.S. beef industry is a production model that better optimizes inputs to deliver the best product at the best price for a given market. In the U.S., the consumer wants more competitively priced, convenient ground beef. The U.S. cattle producer and feeder must produce a product for this market, and this means early identification of an animal's genetic potential, and tailored management of that animal to meet the end-market requirements. By identifying the best one-half to two-thirds of the calf crop as early in the process as is possible, those cattle would continue to be managed as they are today, targeting their final use for the high-end, high-quality end-use markets.

We estimate that the number of cattle in the upper-end grades of Choice and Prime would not change significantly. By ensuring lower quality genetics do not enter the high-quality system, the performance of the top end would be improved through efficiency gains.

For the segment of the cattle population that is not selected for the Choice and Prime market, a different management approach is required. This share of the calf crop should be left on some type of natural forage for a longer period of time in order to capitalize on the lower costs of gain. This is not a grass production model that is used in many other parts of the world, but a modified feeding approach. This approach spans a shorter feeding period, and will likely involve a lower energy ration in order to reduce costs in the production process.

As a result, the industry would not be pushing lower quality cattle into a grading percentage they cannot realistically or efficiently accomplish, nor would it be over-feeding the animal in hope of reaching the higher grading rate. This animal will, in theory, finish at a marginally lower weight with a carcass in which the rib and loin can comfortably reach a Select to low Choice grade. For the remaining share of the carcass, reaching a target of 80 percent CL trim and grinding the balance of the carcass to meet the growing demands of the domestic ground beef market would be the best use.

Evolving to an alternative production model will widen the price spreads of calves and feeder cattle and will likely force cow-calf producers to better determine their respective target markets and produce for them. It will also likely enhance the value of the backgrounding sector, because the cattle in the ground beef profile will be grown to larger weights on lower cost rations.

Changes to the commercial feed yard sector could be minimal. Cattle in the alternative model will still be fed, possibly for a shorter period of time and with lower energy rations. Cattle turnover would be higher. The greatest change would be to the packer because it would alter the way cattle are currently being priced. It would also potentially force radical changes in the fabrication process.

A model such as this benefits retailers and end users as it produces a larger supply of the products that currently have the highest degree of demand and growth rate, while at the same time does not radically disrupt the supply of products for those looking for conventional or higher quality products.

The bottom line is the existing business model has been lowering head count and losing market share for the last 40 years. While change is often difficult, the industry can either adapt to the realities of the modern end-user market or continue with the status quo of contracting supplies and shrinking demand.

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