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Macro Influences on the Beef Business

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BACKGROUND

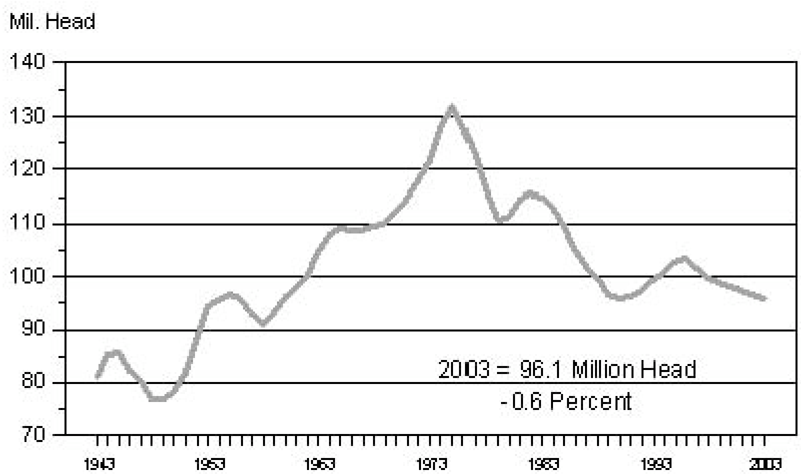
There are many major economic focuses at work in the sector. In late 2003, a start to the herd building phase of the cattle cycle is imminent. Export markets are coming back after faltering during 2002, and beef demand, domestic and international, is growing again. We have not seen the combination of heifer holdback to build the herd, which will reduce per capita beef supplies, and increased demand for beef since the early 1970's. Unless corn prices surge, and this is unlikely, calf prices will go above $1.00 and generally stay there for the next several years—perhaps as long as 5 to 6 years.

As the supply-side cycle and resurgence in beef demand contribute their influences, the organizational structure of the marketplace continues to change. Quality grades in beef have been outdated for 25 years. Such important product attributes as tenderness have not been brought into the grades, and that policy failure has ensured that the price driven system could not be effective as a means of coordination and quality control. Our meat scientist colleagues were finding toughness problems in 20 to 25 percent of the Choice fresh cuts in the 1980's, and little progress has been made in more recent years. Selling everything at one average price each week does not give the producer any reason to change genetics and management and marbling only explains about 30 percent of the variation in tenderness. That simply is not good enough. The first step the producer-initiated vertical alliances typically take is to guarantee tenderness which is testimony to the importance of this quality issue. It is hard to have the consistently positive eating experience all of us want to see with the beef consumer when the product failure rate in the form of "too touch to chew" is as high as 25 percent. The pricing mechanism could have provided the coordination and quality control, perhaps, if grades had been modernized and technology adopted to get to individual animal measurement and pricing. But that did not happen, and we moved to non-price means of coordination and quality control.

When the industry moved to the controversial non-price means of quality control like vertical alliances and contracts, we saw a surge in the much needed investments in new quality-assured and consumer-friendly product lines by the large packers. I hope we don't cut off those new investments by passing laws to block the trends away from the failed price-driven systems. If we like price-driven systems, and I do, then we need time and energy spent on modernizing the quality grades so the price-driven system would have a chance to work, but I predict that will not happen. About one-half of the cattle feeding sector is being paid more than their cattle are worth, and they will not join in any consensus effort to get the grades changed. Remember the debate surrounding taking the B-maturity cattle out of the Choice and Select grades? Recognizing, then, that producers will get caught up in forced change and controversy about policy and process, there is nonetheless a big opportunity in front of us. Let's look at the important economic forces that will be at work in the coming years and look for the strategic moves that should be considered at the producer level.

THE SUPPLY SIDE CYCLE

The January 1 cattle inventory was at 96.1 million head in 2003. It is likely to be down again on January 1, 2004. Poor pasture and hay conditions have killed producers' interests in holding back heifers and the record prices in the second half of the year, coming with the closing of the Canadian border, have made it hard to hold heifers. We are at or near the late 1980's and early 1990's numbers, and I think the next direction is up as we start heifer holding during 2004. Figure 1 shows the numbers.



Livestock Marketing Information Center
Data Source: USDA/NASS

Figure 1. January 1 Total Cattle Inventory

As the herd expands, per capita consumption of beef will decline because per capita supplies will decline. The USDA is projecting 62.2 pounds per capita in 2004, and we will see numbers in the low 60's for several years starting in 2005. Some loss of market share will result, but this is not always a negative. We have to go through that dip in per capita consumption to get heifers into the breeding herd and establish a base for a bigger industry to regain market share as we move toward 2010.

> **Expand your herds if you have the resources. Look for bred heifers and cow-calf pairs to generate cash flow quicker. Improve genetics in the process. Check out the price grids and vertical alliance premium programs, and move quality and size of cattle toward what the new, more consumer-driven marketplace wants.**

DEMAND

After declining for 20 consecutive years, demand for beef bottomed in 1998 (www.aaec.vt.edu/rilp for yearly demand index for beef). Table 1 shows quarterly demand indexes for beef with 1980 as the baseline. Note the 1998 numbers were near 50 which suggest a cumulative 50 percent decline in demand after 1980. The index has also been converted to 1998=100, so changes since the bottom in 1998 can be read directly from the index. The 116.492 for quarter 3 of 2003 is preliminary until final data on prices and per capita consumption are in, but the index is saying demand has increased 16.5 percent since the bottom in 1998. *CattleFax* has said demand increases like those we saw in 1999, 2000 and 2001 added $40 to $50 per head each year to fed cattle calves. After a brief slide in 2002 due to lagged fallout from 9/11/01 and the BSE problem in Japan, the 2003 numbers are up sharply from 2002 and from 2001.

The demand increases are coming from a number of sources. But the improved product offering as the big packers moved away from a business model of being low-cost commodity operators and spent money on developing new branded and quality-assured product lines was huge in its importance to cow-calf producers. Since 1995, I believe the expenditures on new product development and promotion by the big 3 packers are in the billions. The check off funds in recent years have been focused on being a catalyst and encouraging new products like the steak sandwich in all Dairy Queen outlets. Consumers have paid for a better product offering both domestically and in the international markets.

> **The key to long run viability and the chances to make a profit are demand. We need to see a continued aggressive pace in packer-level investments in new consumer-friendly product lines. Any market intervention that threatens those investments should be made with care.**

There are papers on various types of market interventions, including this year's "Packer Ban" legislation, at www.aaec.vt.edu/rilp home page. Under the "Publications" tab, there is also a brief paper by Feuz et al. in the spring of 2002 that explores some of the possible unanticipated implications of market interventions. I have major concerns that well-intended legislative initiatives could end up hurting producers due to unanticipated negative implications, and I urge caution in efforts to legislate solutions to economic problems.

Table 1. Quarterly Beef Index for 1980-2003

Quarter 1			Quarter 2			Quarter 3			Quarter 4		
Year	***1980=100***	***1998=100***	***Year***	***1980=100***	***1998=100***	***Year***	***1980=100***	***1998=100***	***Year***	***1980=100***	***1998=100***
1980	100.000	208.336	1980	100.000	188.619	1980	100.000	195.550	1980	100.000	203.752
1981	93.750	195.315	1981	92.901	175.230	1981	101.814	199.097	1981	88.691	180.710
1982	83.420	173.794	1982	90.391	170.495	1982	93.253	182.356	1982	84.881	172.947
1983	82.855	172.618	1983	90.189	170.113	1983	90.941	177.836	1983	81.008	165.056
1984	82.052	170.945	1984	85.929	162.078	1984	82.801	161.918	1984	81.029	165.098
1985	76.309	158.980	1985	85.232	160.764	1985	82.910	162.130	1985	73.105	148.954
1986	72.059	150.125	1986	81.649	154.005	1986	81.413	159.204	1986	71.490	145.663
1987	66.917	139.412	1987	73.815	139.229	1987	74.090	144.884	1987	66.829	136.166
1988	67.028	139.644	1988	73.976	139.533	1988	72.448	141.673	1988	64.780	131.991
1989	63.242	131.756	1989	69.344	130.797	1989	66.528	130.096	1989	64.197	130.802
1990	60.926	126.930	1990	69.910	131.863	1990	65.575	128.233	1990	62.930	128.222
1991	60.385	125.803	1991	67.835	127.951	1991	64.588	126.303	1991	58.533	119.263
1992	57.207	119.183	1992	63.496	119.766	1992	60.843	118.978	1992	56.362	114.839
1993	55.818	116.290	1993	61.711	116.399	1993	59.951	117.235	1993	55.435	112.950
1994	54.459	113.459	1994	59.364	111.971	1994	56.891	111.250	1994	53.733	109.482
1995	52.765	109.930	1995	57.729	108.888	1995	57.320	112.089	1995	52.830	107.642
1996	52.470	109.314	1996	56.953	107.424	1996	52.848	103.344	1996	50.847	103.601
1997	48.373	100.779	1997	54.416	102.639	1997	51.625	100.953	1997	48.606	99.036
1998	47.999	100.000	1998	53.017	100.000	1998	51.138	100.000	1998	49.079	100.000
1999	47.682	99.340	1999	55.053	103.841	1999	53.178	103.989	1999	51.483	104.897
2000	50.428	105.059	2000	56.579	106.720	2000	55.635	108.795	2000	51.413	104.755
2001	52.339	109.041	2001	59.888	112.960	2001	57.357	112.161	2001	54.799	111.655
2002	51.760	107.834	2002	59.795	112.786	2002	55.944	109.398	2002	53.844	109.709
2003	53.371	111.191	2003	61.491	115.984	*2003*	*59.571*	*116.492*			

TRADE

The U.S. is a major exporter and importer of beef. Export volume is equivalent to about 9 percent of domestic production with beef and veal exports in the 2.25 to 2.50 billion lb. range from 1999 through 2003. Imports in recent years have been in the 3.0 to 3.3 billion lb. range and are from 10 to 12 percent of domestic production equivalent. Figures 2 and 3 record the data.

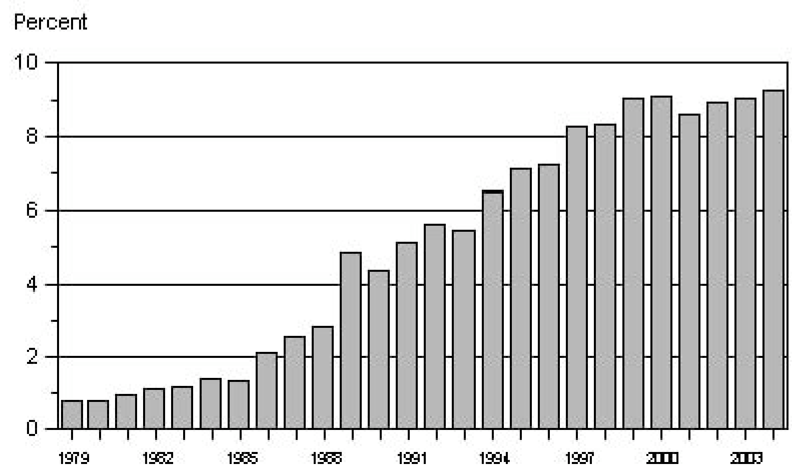


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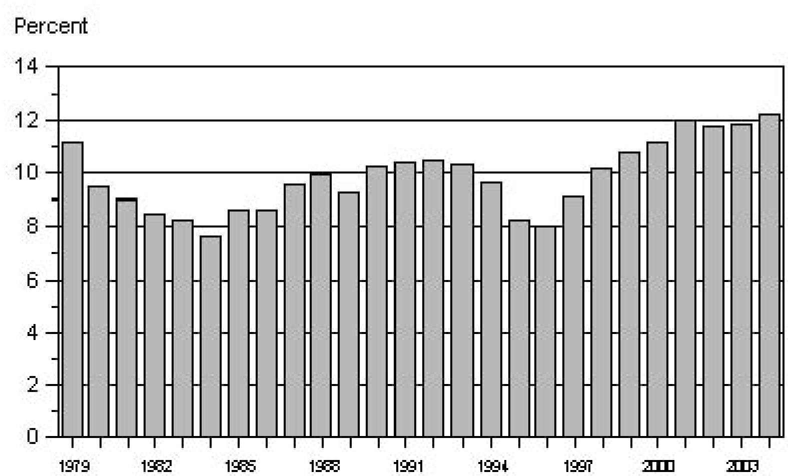
Figure 2. U.S. Beef & Veal Exports
As a Percentage of Production, Carcass Weight, Annual



Livestock Marketing Information Center

Figure 3. U.S. Beef & Veal Imports
As a Percentage of Production, Carcass Weight, Annual

Generally, we export high quality cuts of beef and import processing beef. Top buyers for beef exports are Japan, Mexico, Canada and South Korea. We buy beef from Australia, New Zealand and Argentina and live cattle from Canada and Mexico. The dramatic and record high prices this year came primarily from the abrupt closing of the Canadian border which eliminated roughly 9 percent of the available numbers of slaughter cattle. The record prices were from a supply-side phenomenon, not a surge in demand. From September 2002 through September 2003, slaughter cattle prices in Nebraska were up 40 percent and Choice boxed beef values were up 41 percent. Across the same period, retail prices were up about 12 percent. During October and November, as the price increases worked up through the supply chain to food stores and restaurants, the record prices faltered and settled in around the 18 to 20 percent price increase we would expect from a 9 percent decrease in supply with demand constant. (Elasticity of demand is about -0.5 at the producer level, meaning a 9 percent decrease in supply will prompt an 18 percent increase in price if demand is constant.)

Trade is controversial in some quarters, but the growth in export markets for beef has been one of the reasons for the bottoming and subsequent surge in beef demand. Research that tries to account for the influences of both exports and imports shows that growth in exports has increased beef and cattle prices and supported a larger beef cattle industry than would otherwise be the case. (*Impact of Exports on the U.S. Beef Industry,* E. Van Enoo, E. Peterson, W. Purcell, May 2000 at www.aaec.vt.edu/rilp under *Publications*.) The most recent data show beef export values at about $5.5 billion with import values close to $3.5 billion. Shipping high value beef cuts into the world market helps the domestic industry in net, even though the pounds we import are larger than the pounds we export.

> **Trade is often controversial, but the research shows a positive net benefit. We need to see the “forest” here and not get caught seeing only the “trees” like imports of cattle from Mexico and Canada. The high value cuts being exported were, according to my research, a significant factor in the turnaround of beef demand in 1998.**

MARKET INTERVENTIONS

Efforts by Congress to legislate solutions to actual or perceived economic problems will influence the type of beef industry we will have in the future, will make a significant difference in the growth and economic vitality of the industry, and will impact producer-level profitability and viability. The non-price means of coordination and quality control that have emerged to replace the failed pricing system are controversial. If I had my druthers, we would have a price-driven industry with grades that identify and measure all important product attributes (like tenderness) that influence consumers’ buying behavior. The system might then send clear price signals and economic incentives to producers to keep what we are producing in line with what consumers want and are willing to pay for. The price system we have is not capable of bringing that type of coordination and quality control.

If we pass laws that make it hard for packers to buy the cattle or hogs they need to support the new branded product lines, we run the risk that they will stop investing big dollars in product development work—and that would be deadly for producers. There is no doubt in my mind that the new pre-cooked beef lines that can go through the microwave are a major reason for the turnaround in beef demand. We risk discouraging those efforts when we try to legislate behavior in our concentrated markets.

There are issues in concentrated markets that are no longer relying on the price system for coordination. Market access is an issue, especially for the independent-thinking producers who do not want to change their genetics and management programs to meet the needs of these new branded product lines. Maybe it will all work out. If we go after the non-price approaches that have the incentives wrong, like the formula arrangements with a base price from a market where the packers are active buyers, perhaps we can find a compromise that moves us forward. As noted earlier, there is a set of 2003 papers on market interventions including *Coventry of Origin Labeling, Mandatory Price Reporting,* and *Packer Ban* at www.aaec.vt.edu/rilp. When Congress intervenes and requires new programs that add costs along the supply chain, producer prices will go down unless the new program or new legislated requirement can add more value than the programs cost on a per head basis. Mandatory price reporting may be an example of a cost-increasing program that did little or nothing to enhance producers' prices, and COOL may be another one.

Do read the papers that try to lay out these issues and what we know from a research perspective. My advice is to be well informed and to pay close attention to the unanticipated consequences of market interventions. A classic example for me would be banning vertical alliances and contractual procurement in cattle or in hogs and realizing later that it cost the producing sector the billions of dollars spent by the big packers on new product development. The alliances and contracts have allowed higher levels of inter-stage coordination and quality control, and the expanded investments came with that newly-found quality control.

> **Be very careful with market interventions. Cow-calf producers need investments in new product forms from the large packers. If you pass laws that tend to discourage those investments, the demand growth we are seeing will falter in future years. The residual claimant of the consumer dollar (the producer), after all middlemen extract an operating margin, will bear the price pain if demand is allowed to falter.**

LOOKING AHEAD AT THE BIG PICTURE

When the volatility in 2003 from an unprecedented set of circumstances settles out, the beef business can be facing a positive future. If we do the right things and do not shoot ourselves in the foot, the next 5-6 years can be good years for the beef cow owner. Let's look at some of the things that need to be done.

Be Consumer Driven: The only dollars available to be allocated to the profit centers along the supply chain are the dollars out of the consumer's pocket. The only way to increase the size of the economic pie is to offer a product line that will pull more dollars out of those pockets.

Across the past 20-25 years, the price-driven system has failed miserably in efforts to meet this need. In the 1980's, some of us were bemoaning the wrong signals that were being sent when an entire pen of cattle was sold at the same price. There are always big differences in value within that pen, and the need was to get to individual animal evaluation and pricing, but we did not go that way. The change was, instead, to selling the entire show list at one price, and that was a step backwards. Selling everything at one price does not send a profit-based message for change in the form of price premiums or discounts to the producer.

The industry may get help here, in spite of its own tendencies, by the development of an individual animal ID system. For disease and security reasons, we may go to individual animal identification and record keeping which will meet the necessary conditions for a producer to figure out how well his or her cattle are meeting consumer level needs. If we add an understanding of how critically important it is to serve the consumer, the historically huge divide between what we offer and what the consumer wants might be further reduced. We know consumers want high quality, consistent and positive eating expenses and a beef entrée that is easy and convenient to prepare. If those wants are met, the consumer will reward the sector in general, and producers in particular, by pouring more dollars into the marketplace.

Take Advantage of Opportunities: The herd building phase of the cycle will come. As new investments in breeding stock are made, it is important that genetics be moved toward what has commercial value along the supply chain and up to the consumer. Until the scientists get control of tenderness in the genetics, it will be important to identify the right slaughter date and weight for the steer or heifer. Slaughter before the animal is able to get into Choice is a costly mistake for some breeds, and slaughter after the animal is past the point on the growth curve where conversions take a big dip can be very costly.

Independent cattle and hog producers complain to me on occasion that the big packer does not appear to very interested in their slaughter livestock. This scenario plays out more often in hogs than in cattle, but there is a message for all livestock producers. It goes something like this:

"They don't appear to want my hogs."

and I ask:

"Are they uniform and consistent?"

and the reply is:

"They are like peas in a pod and are very uniform."

and I ask:

"What if they are uniformly wrong?"

At that point, there is a sometimes prolonged sentence. If the load is in fact uniformly wrong in terms of weight, size of the loin or for a number of other product attribute reasons, the packer/processor has a major problem. They might have to essentially develop another marketing and product line program or just sell the pork (or beef) as a commodity product because the hogs or cattle do not fit the new branded product line the packer is emphasizing in its new business plan.

We will have a chance to grow the beef sector and regain part of the lost market share that went from 95 lbs. per capita in 1976 to 65 lbs. and lower in the early 1990's if the consumer is well served. Support state and national programs that help make sure this is the case.

Have an Open Mind: It is useful to think about the beef business as if it were a single firm, and you were the manager. Assume you did own the industry, and you spend scarce investment dollars on a new and branded fresh beef product line. Then you find the performance of the line is too variable. The problem is that the slaughter cattle you are producing do not consistently support your new, consumer-driven product line in terms of tenderness, or portion size, or some other product characteristic. As owner and manager of the "firm," what do you do?

You will get your management team together and fix the problem of quality and performance variation. The obvious need is to get the variability in the cattle under control, and you do that by laying out detailed specs and expect the production department to grow you the right types of cattle. That coordination and quality control is exactly what is needed in the marketplace of today if packer or processor or retailer money is to be spent on new products.

Managing the new approaches such as vertical alliances is not easy, even if your view of the industry as a single firm helps to identify the issues. There is a paper on management and compensation guidelines (Purcell, Wayne D. and William T. Hudson. "Risk Sharing and Compensation Guides for Managers and Members of Vertical Beef Alliances," *Review of Agricultural Economics*, (2003) 25(1): 44-65). There is an early version of this paper from August 2001 under "Publications" at www.aaec.vt.edu/rilp. That work surfaced an important issue, and I will close with it as I share new insights on this important issue.

In the alliances, what used to be separate profit centers (producers, cattle feeding, packing, retailing) are now working together. Often, major new investments by one or more of the new "partners" are required. Examples would be scanning technology in the feedlot to find the correct slaughter date for each animal or electrical stimulation to ensure tenderness in the slaughtering and fabricating phase. These technologies have few alternative uses and there is, therefore, suddenly very strong interest in the performance of every member of the new team. *To get involved and to make the needed investments, there may need to be more formalized (contract, marketing agreement, production contract) arrangements to lay out responsibilities and compensation.* The price system may not be adequate, especially if there should be compensation for contributing to the team effort cattle and providing product attributes that are not identified in the current pricing system. It is relatively clear in this setting why the price system has been abandoned. If it is to make a comeback, there needs to be major changes in quality grades and in other value-related dimensions so it can be effective and correctly reward the costly new investments. If changes are not made, then we need to be careful in insisting on a return to "competitive" price driven systems. We could lose the willingness of for-profit business firms to make investments in new technology that will be needed to carry the beef industry into the future.