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AUG 17 1981

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OUTLOOK AND PROSPECTS FOR THE WESTERN BEEF CATTLE INDUSTRY

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During the recent five year period major changes have occurred in the beef industry. Beef demand has apparently been affected by changing consumer attitudes and food consumption patterns as well as inflation pressures on family budgets. At the same time, feedlot operations are being affected by relatively higher finance and grain costs. Both the demand and cost changes can impact beef, the production operation and location. The production of "lean" beef to meet apparent consumer demands would encourage the placement on feed of older and heavier animals, a shorter confined feeding period, the use of less concentrate feed and lighter finish weights. Such changes in the beef production operations could also encourage a shift in the share of finished beef production to the West and Southeast.

Changed Beef Demand?

Beef demand has been affected by changing consumer attitudes concerning the nutritional and health attributes of beef as well as changing price relationships among beef, pork and poultry. At this point, it is probably not possible to determine the amount of substitution of poultry for beef that has been caused by changing consumer attitudes and amount caused by lower poultry prices relative to beef prices. The apparent change in consumer attitudes and the decline in relative poultry prices occurred

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*Presented at WAEA meetings, Lincoln,
July 19-21, 1981.*

roughly during the same time interval. During the early seventies, nutrition and health studies began linking or associating plasma cholesterol and coronary heart disease [Page and Friend; Kritchevsky; Cleuck; McGill; U. S. Health, Education and Welfare; Jansen]. By 1977, the Dietary Goals for the U. S. developed by the U. S. Senate Committee on Nutrition and Human needs was released. The dietary goals suggested that consumers "decrease consumption of meat and increase consumption of poultry and fish" and decrease consumption of butter, fat, eggs, and other high cholesterol sources" as well as other suggestions related to calorie and sugar consumption [U. S. Senate].

During the mid-seventies surveys appeared to indicate changed consumer attitudes toward beef. A United States Department of Agriculture survey indicated that approximately one-half of the households surveyed were trying to change their dietary patterns due, for the most part, to medically determined or self-perceived health problems [Jones]. In a more recent survey made by the same group during 1979, some 64 percent of the households during the prior three years had made dietary changes [Jones and Weimer] for health or nutritional reasons or planned to make dietary changes. In both cases nearly two-thirds of the households changing food consumption patterns were doing so due to self-perceived or medically diagnosed health problems. The other one-third were making dietary changes to maintain healthfulness. Most common changes, except those made by diabetics, included a reduction of fatty red meat and an addition of poultry and fish consumption as well as lean red meat. Other food consumption changes included reductions in fried foods, eggs, butter, sweets, soft drinks, sugar and salts and an increase in the intake of fruits, vegetables, low-fat milk and cheese.

During the mid-seventies the acceptability of beef as a product also appeared to decline. In a separate survey made by the U. S. Department of Agriculture, consumers ranked their satisfaction with beef lower than most of the other food groups included in the survey [U. S. Department of Agriculture, Economic Research Service]. Seventy-six percent of the consumers sampled reported that they were "always or almost always satisfied" with chicken while only 59 percent indicated being "always or almost always satisfied with beef." Beef appeared to rank only sixth in consumer satisfaction out of the total 32 food groups included in the survey. Adjustment of the beef grades would improve consumer satisfaction somewhat, but some of the evidence appears to indicate that the beef product as a whole is not satisfactory to the consumer.

As consumer attitudes have apparently been shifting, the red meat and poultry industry has also been adjusting to other impacts. During the mid-seventies the beef industry accumulated production from the liquidation phase of the inventory cycle. During this period the ratios of beef prices to both pork and poultry prices were relatively low [U. S. Department of Agriculture, Economics and Statistics Service]. More recently, the ratios have been at their highest point in the last twenty years. The relatively high price of beef to pork and poultry is a major consideration in explaining the recent substitution of poultry and pork for beef in the national diet. Since the mid-seventies poultry and pork per capita production and consumption have increased roughly 30 retail lbs. while per capita beef production and consumption has declined by about 11 retail lbs. [U. S. Department of Agriculture, Economics and Statistics Service]. Prices of all three meats have generally risen over the five year period despite an increase in the per capita consumption of the sum of the three meats. The net result

has been a general increase in consumer expenditures for the three meats separately and as a sum. But the expenditures per person for all three meats as a percent of income have declined. The possibility of a decline in the demand for beef over the last several years seems more apparent when prices and expenditures are deflated. Real prices of beef have only increased slightly while production per capita has declined around 20 percent from 1976 to 1980. Most elasticity calculations based on deflated prices and income for beef over that period are near one but are not significant. However, the use of "dummy" variables in regression analyses for that period indicate a significant shift in demand level for beef. Real prices of pork and poultry have reacted more "normally," declining as production increased.

Regional Beef Production Shifts: A Possibility in the Future

The demand for "leaner" beef by consumers could lead to regional shifts in the production of finished beef to the West and possibly the Southeast.^{1/} With less grain required there are additional incentives to hold feeder cattle and roughages in the area of origination and import concentrates and grain to the cattle. The West originates about 12 percent to 15 percent of the feeder cattle but finishes only 7 or 8 percent of the fed cattle marketed.

^{1/} Regional designations used here are the same as those defined by the Economics and Statistical Service of the U. S. Department of Agriculture for feeder cattle. The West contains Alaska, California, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, and Washington. The Great Plains contains Colorado, Kansas, Nebraska, North Dakota, South Dakota, and Wyoming. The Southwest includes Arizona, New Mexico, Oklahoma, and Texas. The Southeast region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia. The North Central includes Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. The Northeast includes Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

However, the West carries only a small portion of the grain concentrate-- around 1 percent of total United States grain stocks on October 1.

Currently, the West, Southwest, and Great Plains^{1/} together hold over one-half of the beef cow inventory and produce one-half or more of the feeder calves. Due to the heavy concentration of feeding in the Great Plains nearly three-fourths of total U. S. fed beef production originates from this area. In the last ten years (1970-1980) both the Great Plains and the Southwest have gained a greater share of the U. S. fed beef production. The Great Plains region has gained 8 percentage points of the total. The gains by the Great Plains and Southwestern regions have been balanced by a loss of 12 percentage points in production share by the North Central region.^{2/} In short, the pattern of regional shifts to more western areas has already been experienced and further incentives could at least provide further movement "on the Margin" to the West.

As leaner beef is produced production practices may shift to heavier weight feeder cattle being placed in confined feeding and finished to lighter weights [Cook, et al.]. If placed feeder weights reach 800 pounds, it would cost almost the same to ship the feeder as it would to ship the 18 bushels or so of grain to finish the animal to 1,000 pounds. At \$2.00 per loaded truck mile it would cost around 3.6¢ per mile to move the 18 bushels of grain. It would also cost the same to move an 800 pound feeder

^{1/}

Regional designations used here are the same as those defined by the Economics and Statistical Service of the U. S. Department of Agriculture for feeder cattle as listed in the previous footnote.

^{2/}

Regional information was obtained from the Western Livestock Marketing Information Project, Economics and Statistical Service, U. S. Department of Agriculture, Denver, Colorado.

steer. Rail, barge, and back-haul rates would reduce the grain transport costs to lower levels. In addition, back-hauling could also be available for feeder cattle, which would provide the basis for cross movement of feeder cattle and grain.

The potential for reduced fat accumulation and reduced grain consumption should not be over-exaggerated, and the potential for region shifts should be considered on the margin. Recent publications indicate that fat and fat trim could accumulate to 12 billion pounds, and reduced fat levels could save as much as the entire Iowa corn crop [Farm Journal]. More modest calculations based on trim by grade indicates a carcass fat trim for 1980 of around 2.5 to 3 billion pounds. The other apparent 8 or 9 billion pounds in retail cuts is hardly possible since total carcass production of fed beef is only 13-15 billion pounds.

Recently the feed lot industry has been subject to over 20 months of almost continuous losses. As a consequence, a number of commercial feed yards have closed or significantly restricted feeding activities. Cost of production figures for the commercial feed lots in the West and Midwest are somewhat comparable but are above those feed yards that are seasonal and supplemental enterprises to other farm activities [U. S. Department of Agriculture, Economics and Statistical Service]. As a result of the apparent decline in demand for traditionally produced beef it is the larger commercial yards that are currently making adjustments in production levels and techniques. In addition, commercial custom feed yards tend to be more heavily dependent on borrowed capital and are more sensitive to the current restrictive monetary policies. Other sectors of the meat economy, such as poultry and pork, are also at or near break-even levels. Incomes in the meat sector have been affected by product prices as well as energy-related capital

labor and feed costs. The Schluter-Lee index indicates "a reduction in net income to producers of meat animal products during the mid-seventies as a consequence of higher prices paid for feed grains and hay"--a rise again in 1977 and 1978 and a decline since 1978 [Schluter and Lee].

The feed lot industry in the western regions is particularly sensitive to feed grain and capital costs. The western regions, for the most part, do not produce enough grain to sustain the export and feed market if the feeder cattle produced in the western regions were fed there. Local feed prices are also highly variable when the local area is in a feed surplus situation--prices tend to conform to the central market price minus transport costs. When the local area is in a feed deficit situation prices follow the central market plus transport costs. Recently, deficit positions were created as grain was held under the reserve program.

The cattle industry in western regions is disproportionately affected by capital costs because a larger share of commercial custom feed lots and ranches are located there that depend heavily on borrowed capital and because interest rates tend to be higher in western regions than in other areas of the United States. Currently, the rebuilding of the energy industry [Western Agricultural Economics Research Council and U. S. Environmental Protection Agency and U. S. Department of Agriculture] is competing for capital in the West and possibly attracting "tax shelter" investors away from custom feeding operations. Some gains have been made in attracting "tax shelter" investors to cattle embryo transplant investments. However, neither the energy exploration nor cattle embryo transplant investments have been tested in the tax court, and the level of "tax shelter" investments is not reported.

The Future

The apparent shift in demand for beef will probably encourage several beef industry changes. The underlying forces causing the cattle cycle may have been partially destroyed. The beef feeding operations will most likely adjust to reflect the demand for leaner beef. A surplus of feed lot capacity may be created due to the lower level of demand for beef and the higher turnover rates that can be achieved if less finish is necessary in the feeding operation.

If the demand for beef simply sifts downward without a significant adjustment in elasticity, the beef industry would adjust to lower levels of production. However, if the elasticity of demand has become more elastic, the cattle price and inventory cycle could become somewhat more muted. There has also probably been a change in management style after the recent losses and adjustments in the industry. The "long shot" managers have suffered the largest losses due to their persistence in feeding despite past poor financial performance of the feed lot. The remaining beef production industry managers are probably more inclined to be calculated risk takers. In addition, segments of the feed lot and slaughterhouse industry have been purchased by larger companies seeking some synergistic effects from cattle feeding and the slaughter industry. Companies owning feed lots or slaughterhouses, with synergistic effects in mind, will probably further affect the cattle cycle since these motives for investment and expansion or contraction of the operations do not follow the traditional financial incentive and reaction mode. Finally, relatively higher financing costs resulting from restrictive monetary policies will impact expansionary activities. More muted cyclical activity in the beef industry may lead to additional efficiencies not attained in the past. Capital labor and

management spent in the rebuilding phase that is liquidated during the declining phase can be partially saved.

In the past, turnover rates of as high as three times per year could be achieved. However, if grading characteristics are changed to allow 90 or 100 day feeding periods, turnover rates of as high as four can be achieved allowing a substantial increase in the number of head that can be fed for a given feed lot size--overall, roughly 30 percent. With a reduction in demand for beef the number of head required could actually be reduced from current levels while the potential feed lot capacity is expanded.

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