Grazing Lands: Prices, Value, and the Future

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Western cattle ranches have been one of the most volatile of all assets ever since their development in the 1870s. Enormous profits were made by the early cattlemen due to the availability of cheap land in the West and rapidly expanding demand for beef in the industrializing East. This favorable situation reached its peak during World War I (1914–1918) when agricultural capacity in Europe was severely reduced and industrial demand exploded. Since 1920 the trend in profitability of western cattle ranching has been in a gradual decline with periodic reversals such as during World War II, the Korean War, and the Vietnam conflict (Holechek et al. 1994).

Historically western grazing land values have followed the general business cycle in the country with peaks generally occurring during periods of prosperity and bottoms occurring during recessions. The 1970s were a particularly favorable period for western grazing land values because of a loose monetary policy by the federal government that caused double digit inflation. This caused investors to dump financial assets such as stocks and bonds and buy real assets such as farmland, ranches, gold, and various agricultural commodities (beef). Many ranchers realized a 10 percent or more annual increase in the value of their ranches from 1968 to 1981. However this situation was rapidly reversed when the Reagan administration brought inflation under control by raising real interest rates to historic highs (Holechek et al. 1994).

Fair Market Value for Western Ranches

We have calculated the present value on a per acre basis for different types of western grazing lands based on their recent earnings (1989–1993) and the average historic corporate PE multiple of 15 (Pring 1992) (Table 1). These val-

Table 1. Forage production, financial returns, and fair market value of grazing land in good range condition using the 1989–1993 cost price structure.

Range type	Type of operation	State	Forage production (lb./acre)	Financial returns ($/acre)	Fair market value ($/acre)[1]
Southern pine forest	Cattle-cow	Louisiana	2500-4000	8-14	120-210
Tallgrass prairie	Cattle-cow	Kansas	2500-3500	9-12	135-180
Coastal prairie	Cattle-cow	Texas	2500-3500	9-12	135-180
Coastal prairie	Wildlife/cattle (W/C)	Texas	2500-3500	25 (15 W + 10 C)	375
Southern mixed prairie	Cattle-cow	Texas	2000-3000	6-8	90-120
Southern mixed prairie	Cattle/wildlife (C/W)	Texas	2000-3000	17 (10 W + 7 C)	255
High plains-shinnery	Cattle-cow	New Mexico	800-1700	3-4	45-60
Oak-savannah	Sheep/goats	Texas	2000-3000	8-14	120-210
Oak-savannah	Wildlife/cattle (W/C)	Texas	2000-3000	28 (20 W + 8 C)	420
Shortgrass prairie	Cattle-cow	New Mexico	800-1400	4.50-5.50	68-83
Shortgrass prairie	Cattle-yearling	New Mexico	800-1400	4-10	60-150
Shortgrass prairie	Sheep	Wyoming	600-1000	3.80-4.50	57-68
Desert prairie	Cattle/sheep	New Mexico	500-900	2.50-3.50	38-53
Northern mixed prairie	Cattle-cow	Montana	900-1600	2.50-3.00	38-45
Annual grassland	Cattle-cow	California	300-1500	1.00-3.00	15-45
Palouse prairie	Cattle-cow	Oregon	500-800	1.25-2.50	19-38
Palouse prairie	Wildlife/cattle (W/C)	Oregon	500-800	4 (2.50 W + 1.50 C)	60
Chihuahuan desert	Cattle-cow	New Mexico	300-700	0.60-1.00	9-15
Sonoran desert	Cattle-cow	Arizona	100-400	0.30-0.60	5-9
Salt desert	Sheep	Utah	150-350	0.30-0.70	5-11
Salt desert	Cattle-cow	Nevada	150-350	0.15-0.40	2-6
Mojave desert	Cattle-cow	California	50-200	0.10-0.30	1-5
Big sagebrush	Cattle-cow	New Mexico	250-500	0.50-0.80	7-12
Big sagebrush	Cattle-cow	Wyoming	300-800	1.00-2.00	15-30
Big sagebrush	Cattle-cow	Nevada	150-400	0.50-1.50	7-23
Piñon juniper	Cattle-cow	New Mexico	100-500	0.25-1.00	4-15
Coniferous forest	Cattle-cow	Eastern Oregon	400-800	2.00-3.00	30-45
Coniferous forest	Cattle-cow	New Mexico	400-1000	2.40-3.00	36-45

Source: Holechek and Hess 1993.
[1]Fair market value in the 1989-93 per acre earnings multiplied by 15. Historically investors on average have paid 15 times annual earnings for corporations in America.

ues likely overstate the current fair market value of grazing lands because cattle prices have dropped 30% from the 1989-93 peak and cattle ranching is a mature rather than growing industry. Realtor listings in various parts of the country in the 1989–1993 period and valuations from New Mexico State University experiment station reports (Table 2) indicate that the asking prices for grazing lands exceeded the market values by 10 to over 100 percent, but there were many exceptions. Ranches in the central Great Plains were generally near fair value, but those in the intermountain West carried hefty premiums over what their earnings potential alone would seem to justify (Table 2). Our analysis of actual sale prices in the intermountain West reflect primarily what buyers were willing to pay for private rangeland. We believe these prices are inflated when applied to public grazing permits. This is because on public land the permittee does not have development or sub-division potential. Further there is now considerable uncertainty on BLM and Forest Service lands over what grazing fees and regulatory policy will be in the future.

Table 2. Fair market value based on returns from livestock production and actual value (1993–95) of New Mexico rangeland using the 1989–93 cost-price structure[1].

Range type	Type of operation	Net returns per acre ($)[2]	Fair market value ($/value)	Actual market value ($/acre)
Shortgrass prairie	Cow-calf	5.00	75.00	85.70
Chihuahuan desert	Cow-calf	0.70	10.50	30.00
Sagebrush grassland	Cow-calf	0.60	9.00	22.00
Pinon-juniper	Cow-calf	0.75	11.25	31.50
Desert prairie	Cow-calf	2.50	37.50	39.00
Shortgrass prairie	Cattle-yearling	5.00	75.00	84.00
Desert prairie	Cow-calf/sheep	3.00	45.00	32.00

[1]Actual value reflects what buyers actually were willing to pay for these grazing lands in the 1989-1993 period based on New Mexico State University experiment station reports, and interviews with real estate agents..
[2]Returns are for rangeland in good ecological condition.

Influence of Range Condition on Rangeland Value

In the present pricing of rangeland the true grazing capacity does not appear to be fully reflected in prices. Realtors across the West, report no definite pricing premium for rangeland in excellent or good condition compared to rangelands in fair ecological condition. However, there has been some recognition in sales prices that rangeland in poor condition is less valuable than rangeland in fair to excellent condition. For instance ranch sellers routinely did not differentiate the value of land dominated by black grama or blue grama from land dominated by tobosa grass or threeawn. However it was generally recognized that lands with high amounts of bare soil and/or brush were less valuable than those with a grass cover.

Influence of Infrastructure on Rangeland Value

It is our experience that most realtors and sellers give fairly reasonable unit appraisals to watering points and fences on western ranches. However pricing inefficiencies center around the optimal balance between the quantities of infrastructure and the amount of grazing capacity. There has been a historic tendency to substitute watering points and fence for grass when ranch grazing capacity is established. Knowledgeable buyers look for ranches with minimal infrastructure and high amounts of forage. They know that it is usually much cheaper to create infrastructure than increase forage. On most arid land ranches in the Chihuahuan desert or sagebrush types infrastructure costs become excessive relative to potential earnings when watering points exceed a 21/2 mile spacing and the average pasture size is less than 2,000 acres (Holechek and Hawkes 1993). In the more productive prairie areas of the Great Plains average watering point spacings under two miles and pasture sizes of less than a section would usually represent excessive capitalization. However it is important to point out that more infrastructure is justified on ranches with high grazing capacity than those that are degraded, or have low forage production potential. Fence and watering points improve the efficiency of range forage use. As forage production per acre increases, there is more potential to increase financial returns from improvements in forage harvest efficiency with fence and water development (Holechek 1992). The key here is to know future value of the extra forage that can be used compared to the cost of the infrastructure. As a general rule additions to infrastructure should come after increases in forage productivity rather than proceed them.

When to Buy

Historically the time to buy any commodity based asset has been when the selling price of that commodity nears or drops below production costs (Casey 1993). The last good buying opportunity for western cattle ranches occurred in the 1985–86 period but another one will likely occur sometime between 1997 and 1999. A cumulative 3–4 year period (beginning in 1994) of unfavorable cattle prices will probably force most marginal ranching operations into liquidation. Most western ranches experienced negative financial returns from cattle in 1994 and 1995. Another reason that this could be a bottom has to do with the nation's economy, and this merits a separate discussion.

Western Real Estate and Debt: An Accident Waiting to Happen

Many investors are now concerned that the massive building boom throughout the western United States since 1992 will end in a bust (Casey 1993, Davidson and Rees-Mogg 1993). Since 1991 credit institutions dropped the down payment requirements on home purchases from 10% to 0–5% because the federal government indirectly agreed to stand behind these risky, low equity loans through guarantees to home mortgage companies. In addition, there was a drop in credit standards for home purchase.

Values of rangeland and farmland have historically been closely tied to housing values. Drops in housing values were associated with even greater drops in agricultural land values in the 1930s depression and later during the 1981-82 recession (Casey 1993, Knutson et al. 1995).

Ever since the late 1960s more pessimistic analysts have predicted that consumer and public debt expansion in the United States would lead to a severe economic depression (Davidson and Rees-Mogg 1993). However the day of reckoning has been delayed by productivity increases, inflation and a wide variety of innovative ways to expand credit. Based on history, all debt is leveled sooner or later by payback, default, and/or inflation. Many economists believe the greatest problem that confronts the United States over the next 10 years will be how to deal with its debt problem (Casey 1993, Schiller 1994). The course of range management and the future of western ranching could be determined indirectly by the outcome of this issue.

We also believe a sharp downturn could occur in ranch sales after the presidential election in the 1997-99 period due to exhaustion of both demand and credit (Casey 1993, Davidson and Rees-Mogg 1993, Burkett 1995). This in conjunction with low cattle prices has the potential to cause a sharp drop in western ranch values.

The Future

While large drops in the value of most western grazing lands may occur in the near term, there could be some positive developments for those ranchers who remain in business or who buy at the bottom of the market. Stockmen in the next few years may be forced to recognize that one of their biggest problems is the various cost subsidies provided by the federal government that depress livestock prices (Schiller 1994, Knutson et al. 1995, Holechek and Hess 1995, Merline 1995). The subsidies include government cost sharing for emergency feed in drought, brush control, watering point development, fence, and predator and insect control. The net effect of all these cost subsidies is to increase meat (beef) supplies well beyond what unaltered market forces would bring forth. Research by Workman et al. (1972) indicated that every 1% increase in beef supplies drops prices by about 1.5%. More recent research indicates that drops as great as 3 to 4% can occur for every 1% increase in beef supplies (Knutson et al. 1995).

The cumulative effect of the various cost subsidies on the supply of beef over the past 10 years is not easily determined. However data we have collected from the USDA on emergency feed program payments and range improvement cost sharing indicate they have increased beef supplies by 10% and probably more. This added supply could easily mean 25–35% lower cattle prices compared to those that would exist without the cost subsidies. In addition the recent North American Free Trade Agreement has resulted in increased exports of beef from Mexico to the United States further increasing meat supplies and depressing prices.

Cost subsidies might be justified if the beef industry in the western United States was characterized by rapidly expanding demand relative to supply. Even if this were true, however we predict that supply would quickly respond to demand without cost subsidies. This was true in the 1870s and 1880s when eastern cattlemen produced unprecedented amounts of meat for a rapidly expanding population. This was done without the aid of federal subsidies.

Per capita beef consumption in the USA is declining (Figure 1) (USDA 1994). Many countries such as Argentina and Australia now produce beef at much lower cost than the USA (Holechek et al. 1994). New production technologies will likely cause further decreases in the price of all agricultural commodities including beef as we move into the 21st century (Davidson and Rees-Mogg 1993, Casey 1993, Walker 1995). At the same time health concerns over red meat consumption (Carper 1995) and drops in the price of chicken relative to beef are likely to cause further per capita consumption shifts away from beef (Godfrey and Pope 1990, Holechek et al. 1994).

The federal government could be forced to greatly reduce agricultural and other business subsidies during the next few years (Knutson et al. 1995, Merline 1995).

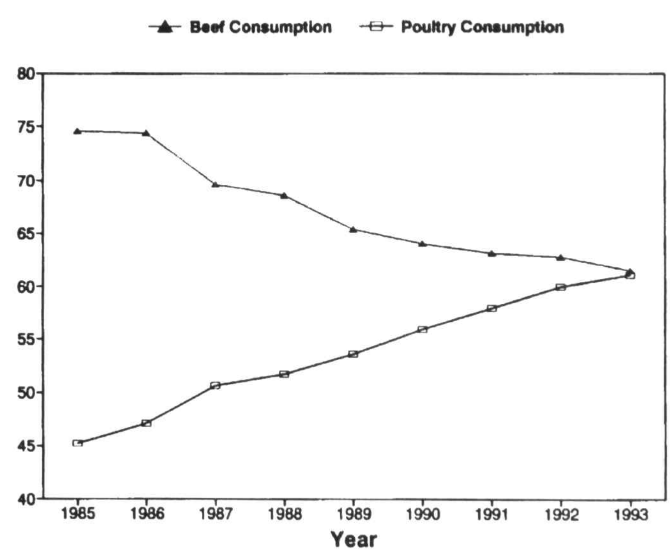

Fig 1. *Per capita beef and poultry consumption (lbs/person) in the United States (USDA 1994).*

New Zealand provides a good example of what can happen when government subsidies are removed from agriculture. Since New Zealand scrapped its farm subsidies in 1986, the farm and ranch economy has thrived (Merline 1995). Although the output of some agricultural commodities (beef, mutton, wool) fell immediately after reform due to the end of subsidized over-production, efficiency of production greatly improved. Government officials found that ranchers not only adjusted their output but their management practices also improved. Presently there is not a single farm or ranch organization in the country calling for a return to subsidized farming and ranching. Perhaps most interesting is that New Zealand's free market reforms have resulted in an annual average economic growth rate of 5%, an inflation rate under 2%, and dropping unemployment (Stein 1995). Prior to the 1986 reforms, New Zealand's economy was stagnant and characterized by high inflation, high unemployment, and burgeoning public debt. We believe New Zealand's experience is applicable to the problems and solutions of livestock production on western rangelands.

Without an end to government cost subsidies private western grazing land values could decline to less than 50% of their present value with the exception of those lands that have high development potential. The reason for this is that the cost subsidies which generally create oversupply differentially affect cattle growers in the eastern Great Plains and southern pine forest compared to those in the West. Because their production costs per animal unit are lower, eastern ranchers can remain profitable in an oversupply environment long after western ranches are put out of business by negative profit margins (Holechek and Hawkes 1993). This situation might be avoided if western ranchers are able to diversify into alternative enterprises such as dude ranching, fee hunting, raising exotic animals, or raising plants for xero-scaping that would increase per acre earnings. However it is important to keep in mind that all these enterprises depend on a vibrant, growing economy.

Conclusion

During 1995 the economy in the United States was in the fourth year of a weak expansion caused in large part by a building boom in the West. Much privately owned western grazing land is priced double or more its value based on earnings from livestock grazing because of future subdivision and other development potential. Grazing lands in the Great Plains appear to be much more reasonably priced relative to earnings potential from livestock than those in the intermountain West. However there is considerable doubt about the future earnings potential of all western grazing land because of a huge imbalance between supply and demand for beef. The environmental movement may be less a threat to western ranchers than the cost subsidies by the federal government. Large numbers of western ranchers could be forced into insolvency during the late 1990s if they are unable to subdivide their land or diversify into other enterprises. However elimination of government cost subsidies in conjunction with application of improved technologies, could again make livestock production profitable on western grazing lands.

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