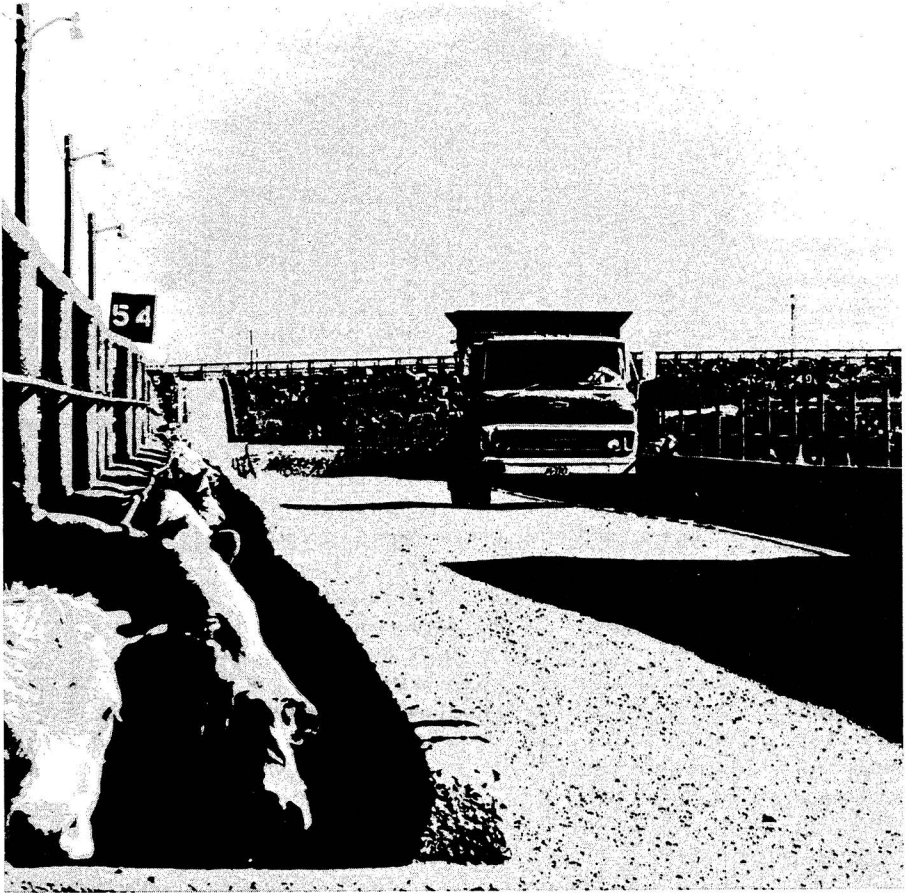


The Changing Structure of U.S. Cattle Feeding



by

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HIGHLIGHTS

This study examines the current cattle feeding crisis in relation to the changing structure of cattle feeding that has accelerated since the previous cattle feeding cycles. Production and marketing economies do not suggest the feedlot structure as found in parts of the Plains and West. This study examines the financial advantages of large feedlots and of multi-lot firms controlling several feedlot plants.

In effect, dispersal of risk has enabled cattle feeding firms to expand their size. Feedlots grew in size as custom cattle feeding arose to disperse ownership of cattle on feed in the firm. Many outside individuals own the cattle on feed within one firm. While ranchers and farmers own cattle on feed in custom feedlots, outside investors also have found cattle feeding beneficial.

Investors in relatively high income tax brackets found cattle feeding a ready vehicle for deferring income from the current year into future periods when their other income and tax rate may be lower and thus allow a saving on total income taxes paid over time. The impact of the tax shelter investor on the industry may have deepened the present cattle feeding period of losses.

The nontraditional investor in cattle feeding was the focus of public offerings of limited partnership funds in the national securities market. Feedlot firms of under 30,000 head size were generally unable to justify the overhead expenses of these public investment offerings. Cattle feeding systems that dispersed risk widely were operational only for the relatively large size cattle feeding firm.

As a result of the expanded size of feedlots in recent years, the cattle feeding industry is now much more concentrated than several years ago. USDA data show approximately 2,000 feedlots produce over two-thirds of the nation's beef. However, individual firms are found to own more than one feedlot. Seventeen firms were noted to be supplying one-eighth of the nation's fed beef. Data based on 1972 levels showed three percent of the nation's fed beef being produced by two cattle feeding firms.

Beyond the rising concentration in cattle feeding is the expanded role of the nontraditional cattle feeder. A consideration is the volatility of this outside capital. In total, outside investors were estimated to be financing one-fourth of our nation's fed beef in mid-1973. This sizeable block of investors in our nation's fed beef supply have only short-term contractual interests in cattle feeding, without ownership of feedlot facilities and supportive enterprises of breeding stock or feed grain production. In effect, the tax shelter contractual investor in cattle feeding may have made the structure of the industry highly dependent upon him for equity capital. This may leave the cattle feeding industry with another factor that further increases its instability and cyclical nature.

If the outside investor will not continue in cattle feeding contracts, then the industry may take further structural shifts in order to disperse the risks of cattle feeding. Either the large firms could turn to feeding cattle for ranchers on contract, or merge into conglomerate-type operations to disperse financial risks of the firm owning the cattle on feed. If the large feedlots cannot continue to disperse market risk, then the smaller feedlot sector of the type found in the Cornbelt may return to a more dominant role in cattle feeding.

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INTRODUCTION

This report is addressed not only to members of the cattle industry but also to all those citizens who are interested in the broader issues of structural change in agriculture.

The cattle feeding industry is presently (mid 1974) going through such an economic crunch that numerous changes are likely to be forthcoming that cannot be anticipated at this writing, even though the writers are attempting to be timely. Nevertheless, the material here should be useful in understanding how the industry has evolved to its present stage.

Major structural shifts have occurred in the cattle feeding industry in recent years [12]. Because of this, one needs to ask if the 1973-74 bust in cattle prices is simply another recurrence of the age-old cattle feeding cycle of boom-bust or if new forces are at work in the industry? This study will trace the evolution of the present structure of cattle feeding, with particular emphasis over the past decade. In the decade since the last major cattle feeding financial collapse, the commercial sector of cattle feeding has seen dramatic changes in both size of feedlots and ownership of cattle on feed. These structural changes are related to the current cattle crisis. Also, it seems inevitable that the current cattle feeding crisis will affect the evolution of the structure of the cattle feeding industry. While more data are needed for understanding fully the relationship between structural change in the industry and the current cattle crisis, this overview of past developments provides a basis for further evaluation by those persons following the industry in the months ahead. The "commercial"^b cattle feeding industry of the High Plains will be the main focus, because it has been the center of change in the past decade.

CURRENT PROBLEMS

The agricultural press is rife with accounts of feeding losses of \$50 to \$150 a head on cattle sold from October 1973 to the present. It is generally agreed that cattle feeders have experienced the worst set of losses since 1953-54. Moreover, it is likely that ranchers and cow-calf producers will increasingly feel the brunt of these depressed conditions for many months ahead [6].

^aMuch of this report is drawn from Dr. Meisner's Ph.D. dissertation, *Investor Capital, Taxes and the Structure of Cattle Feeding*, University of Missouri, 1974

^bThe USDA practice of classifying lots of 1000 or more head one-time capacity as "commercial" is followed.

Various factors have been proposed as contributing to the current problems of the cattle feeder. Of these the following have been cited by analysts:

- rapidly rising feed grain prices in the past year greatly increasing the cost of feeding;
- continued high prices for feeder cattle in relation to feed prices and prices for finished cattle at the market;
- repercussions from government handling of price controls that disrupted the continued flow of finished cattle to the market in late 1973;
- other cost increases, such as removal of DES from feed rations and rising rates of interest.

Only the second point is relevant to the thrust of this paper. It is, however, a most crucial point. Cattle feeders traditionally meet major cost increases by bidding down feeder cattle prices, and cutting output which leads to higher fed cattle prices. It is not much of an oversimplification to say that the feeding losses for the 10 months since September 1973 have reflected a striking failure of feeders to pursue these usual actions.

This paper will argue that the unprofitable relationship of feeder and fed cattle prices was, in part, a result of the forces causing structural change. It should be emphasized that these structural forces are only part of the explanation. Market conditions were such as to promote over-optimism of cattle feeders.

Price pressures continued upward on feeder cattle in spite of lower feeding margins because of a major factor more recent to the industry: The large custom feedlots that dominated the feeding in the Plains and Western States, especially in the past decade, had a rapid growth from relatively recent investments by high income non-agricultural individuals. These nonfarm sources of funds were used to continue bidding for feeder cattle even when expected returns from feeding were already squeezed. The incentive of tax savings through income deferral from cattle feeding programs made expectations of even zero economic returns in cattle feeding attractive to the outside investor. As a further development, the cow-calf sector of the beef production system received relatively high prices for feeder cattle. This caused a further build-up in cow herds. Leaders in the cattle feeding industry warned in 1972 that the outside capital, with tax savings considerations, would likely disrupt the normal supply adjustment patterns of beef industry [5].

Now that cattle markets have faced major losses, will the future of cattle feeding continue as in recent years, with an increasing share of the nation's fed beef coming from the large feedlots of the Plains and West?

Recent losses by custom cattle feeders—especially of the outside investor type—has led to a greater decline in new feeder cattle placements in the large commercial lots of Texas and Arizona than in the Cornbelt. The Cornbelt has the more traditional cattle feeders.

If the major losses of equity in recent cattle feeding has wiped out many of the outside investors in the cattle feeding in the larger commercial lots of the Plains and West, who will take up the void now that they are gone? Will new tax shelter investors enter cattle feeding funds of the large lots as soon as profitable margins return to the industry?

A further question is will more attractive investment alternatives arise for nonfarm investors formerly in cattle feeding and take them from supplying fed beef in the future? If so, will large size feedlots seek to merge with other firms in a conglomerate to absorb or cushion the risks of cattle feeding and thus further change the control over the nation's fed beef? These questions cannot all be answered at this time. However, a fuller understanding of the structural evolution in cattle feeding will aid one in anticipating future changes that may unfold over the months ahead.

THE STRUCTURAL EVOLUTION

Summary Factors Accounting for Rapid Change. Three major factors explain this remarkable evolution, which has few if any, parallels in agriculture.

- (1) A large and steady increase in demand for fed beef the past 20 years created the opportunity for a big expansion in cattle feeding, and a generally quite profitable climate [9, p.2].
- (2) Large increases in the feed grain surpluses produced in the High Plains (Texas, particularly), associated with the rapid development of irrigation and the availability of new hybrid milos, led that area to develop livestock feeding locally as a market for its grain. Without that base of feed grains, there would be much less cattle feeding in the High Plains and a much less concentrated feeding industry [7].
- (3) The successive capture of three types of small but significant economic advantages by the large, commercial lots.

The rapid growth of the big commercial lots in the High Plains since 1960 was the product of an opportunity spawned by entrepreneurs in a region with rapidly increasing feed surpluses. It is hardly surprising that the vehicle used was not family-farm-feeding, which had little precedent in the area, but rather the commercial lot, transplanted from several years of successful use on the West Coast. Established firms and financial interests, along with others, built with astonishing speed a commercial feeding industry in this new area.^a Since practically all of the growth of the High Plains feeding was in commercial lots and, conversely, since most of the growth of commercial lots was in the High Plains, it is very difficult to separate analytically the competitive geographical (feed, climate, etc.) advantages of the High Plains from those of the big commercial lots.

For most of the growth period of the commercial lots in the High Plains, that area has had cheaper feed prices than the Corn Belt, although the differential has become very narrow in recent years. Nevertheless this regional advantage of cheaper feed was quite important.

Economic Advantages of Large Commercial Lots. The first and perhaps the least important economic advantage of the large lots was production economies of size. While the numerous studies of production economies of scale have not been in total agreement, it is clear that such scale economies do not explain the growth of numerous individual lots to sizes in excess of 32,000 nor of multi-lot firms.^b A 1970 summary of such studies by Gustafson and Van Arsdall concluded that most economies in nonfeed costs are achieved at capacities of 5,000 to 7,500 head [17]. Some studies find small, additional cost savings up to 25,000 head or so. Apparently, there is a very wide range of feedlot sizes in which average production costs are really quite similar, but the commercial lot of 5,000 to 25,000 head probably has some small cost advantage in non-feed costs over the farmer-feeder.[18] However, these non-feed costs are less than 20 percent of the costs (not even considering the costs of the feeder cattle), so they could easily be dwarfed by differences in feed costs.

^a Thus, commercial fed cattle production in the case of the area served by the Southwestern Public Service Company of Amarillo, Tx. grew from a few thousand head in 1960 to 1,210,000 in 1966 and to 4,963,000 in 1973.

^b Feedlots of 32,000 head size and larger produced 19 percent of the nation's fed beef in 1973.

The second economic advantage was the marketing advantage of size. It is obviously cheaper for a packer buyer to travel 20 miles to a big lot and bid on 500 cattle than to travel 100 miles to a farm lot and bid on 50 head.

Packer buyers in the High Plains commercial feeding area can travel fewer miles and buy more cattle per buyer than in Corn Belt farmer-feeder areas. The cost saving is small—probably in the range of \$.50 to \$1.00 per head. In a competitive national market for fed cattle, presumably some or all of that saving is passed back to the cattle feeders.

The third advantage was the ability of the large lot to attract customers who would pay well for feedlot services while assuming much of the feeding risks. Explanation of this third economic advantage of the large custom lot requires a more extended examination of this practice from the viewpoints of both the lot and the customer.

Custom Feeding. The practice of custom feeding greatly facilitated the rapid structural evolution of cattle feeding. Custom feeding enabled feedlots to pass much of the burden of capital provision and risk-bearing to their customers. A 25,000 head lot will require an investment in facilities of approximately \$1,250,000. To own the cattle and feed would require another \$10,000,000 or more depending upon cattle and feed prices. In addition to the large capital requirements of owning all the cattle in a large lot is the very important consideration of risks. Large size feedlots have tended to depend upon custom feeding for outside investors as a method to spread risk and utilize the feedlot's heavy investment in fixed plant and equipment. As feedlots increased in size a higher percentage of the cattle were generally custom fed.

Texas studies of the state's major commercial feeding area found that two-thirds of the cattle on feed in 1966-67 were owned by customers rather than the feedlots, and that by 1969-70 nine-tenths were customer-owned [3,p.6].

Studies during the 1960's generally found a relatively close correlation between feedlot size and the percentage of its cattle being custom-fed for individuals not associated with the ownership of the feedlot.

The cattle feeding movement grew rapidly in the plains through the 1960's. Growing lots initially began custom feeding for neighboring ranchers and farmers. In time, individuals from nonfarm pursuits joined with the farmers and ranchers in feeding cattle.

Types of custom cattle feeders. Custom feeding during the era of rising demand and generally high profits has been attractive to many people who had some investment funds and some acquaintance with the industry. Local professional men and merchants were often willing to invest some money. There were even a few professional feeders who did nothing else, and counted on large personal assets and considerable industry acumen to weather the occasional losses. Then there were the owners, managers, and chief employees of the feedlots who often became customers.

The custom cattle feedlot provided a full line of order buying, feed purchases, medicinal treatment, and final marketing services for the nonagricultural investor who had sufficient investment money but lacked cattle feeding know-how.

CONCENTRATION IN CATTLE FEEDING

While concentration in cattle feeding is rather small by many industrial standards, it is very large compared to most of agriculture. Moreover the change has occurred swiftly. In 1962, the commercial cattle feeders fed about one-third of the fed cattle; in 1973, they fed two-thirds (see table). This dramatic increase in the market share of the commercial

National Feedlot Structure, 1962 and 1973

Lot Capacity in Head	<i>Number of Lots</i>		<i>Cattle Marketed (000 head)</i>	
	1962	1973	1962	1973
Under 1000	234,646	144,380	9,045	8,968
1000 – 3,999	1,186	1,336	1,723	2,425
4000 – 31,999	326	635	3,419	9,105
32,000 and over	5	69	314	4,833
Total	236,163	146,420	14,501	25,331

Calculated from statistics in *Number of Feedlots by Size Groups and Number of Fed Cattle Marketed 1962-64*, USDA-SRS-9, June 1966, and *Cattle on Feed*, USDA-SRS, Jan. 18, 1974.

feedlots was obscured by a rapidly growing total production of fed beef. In brief, the total numbers fed by farmer-feeders remained unchanged 1962-73, while the total numbers fed by commercial feeders rose more than 200%.

Concentration in cattle feeding is reported by size of feedlots. Concentration by size of firm is more meaningful. The nation's supply of beef is now more concentrated than data on feedlot plant sizes suggest. USDA data show approximately 2,000 feedlots produce over two-thirds of the nation's beef [2]. However, a few multi-lot firms control a surprisingly large fraction of national output. Two multi-lot firms supply three percent of the nation's fed beef. One of these firms has announced plans to supply five percent of the nation's fed beef in the future. Seventeen firms supply one-eighth of the nation's beef [11, p. 189].

In addition to this concentrated level of horizontal integration, some vertical integration continues. Physical and financial inputs are controlled by these vertically integrated firms. A few major cattle feeding firms control fed beef production from the intermediate growth stage of the animal on through slaughter. Feedlot firms even provide direct loans to investors in custom feeding in some cases through financial subsidiaries [11, pp. 173-177, 198-201].

EVOLUTION IN CUSTOMER CAPITAL

To achieve a more nearly average price, the practice of a customer placing a pen on feed every month was encouraged. For example, one study shows that a customer which marketed cattle in each of the 108 months, 1960-1968, would have averaged a positive return for the whole period of about \$15 a head before cost of interest for debt capital, but would have experienced losses in 32 of the 108 months, including losses for 10 consecutive months in 1963-64 [11, p. 296].

This so-called "dollar averaging" practice required as much as \$50,000 to \$125,000 total capital, as the normal feeding time was 5 or 6 months, and pens often held 100 to 250 head. Such large capital requirements encouraged the pooling of capital into cattle feeding clubs. These clubs, operated much like stock investment clubs, were frequently

composed of 10 or so investors who each contributed \$5,000 or more of equity capital and borrowed the rest.

The cattle feeding club enabled relatively small investors to enter cattle feeding. The cattle clubs developed in the mid and late 1960's along with the continued rise of cattle feeding by higher income individuals, such as business and professional men. These sources of outside capital coming into cattle feeding in the Southern Plains area appeared relatively significant in the late 1960's.

A Texas study found in 1969-70 that 57 percent of the custom cattle were owned by farmers and ranchers, 19 percent by feedlot officers and directors (which often included local merchants, bankers and professional men), almost 9 percent by packers, and 15 percent by others (including feeding clubs, professional men, etc.) [3, p. 6]. The problems of occupational classification are considerable, of course, because those of sufficient economic substance to be cattle feeders are quite likely to be in several businesses often including ranching or farming.

The rise of these various investors helped fuel feedlot expansion as commercial lots found investor demand for more and more pens of cattle. The trade press traces the expansion programs of existing feedlots and new feedlot plans across the Southern Plains through the late 1960's [1,4].

As the commercial feeding industry grew in the late 1960's, it began to outrun the combined equity capital of these customers, even though many participants far from the local area were already involved. Excess feedlot expansion emerged in 1969 when Texas feedlot capacity rose from 1.1 million to 2.0 million head during that year. The consequent under-utilization in 1970 led to some financial failures of feedlots, numerous mergers, and an intensified search for new sources of customer capital with which to fill the feedlots.

Feedlot utilization levels are important to feedlot profitability. A 1969-70 Texas study notes that, "One of the major contributors of lower annual fixed costs per pound of gain is the level of feedlot utilization rate. The ability of commercial feedlot operators to maintain high levels of feedlot utilization rates, thereby spreading annual fixed costs over greater units of output, has been an important factor in the growth and expansion of custom feeding in the Texas Panhandle"[3, p. 16].

Other forces occurred in the late 1960's that caused demand for more equity than the area could readily provide for cattle feeding. On a macroeconomic level, the nation was facing a tight money policy by the banks in order to curb inflation. As a result lending practices by banks were tightened up. This caused lenders to seek to reduce the degree of risk in their loans. Therefore, a greater equity base was called for to support a given level of debt capital. In effect, this tightening of credit by banks in the late 1960's at the same time that the feedlots of the Southern Plains had over-expanded, caused individual feedlot managers to scramble for a broader equity base [4].

Another feature of the next stage in financing of cattle on feed was the institutional system in use in the Southern Plains for financing the relatively high risk petroleum well drilling programs. The Southern Plains area was experienced in tapping national risk capital markets for oil well drilling enterprises. This industry utilized the limited partnership form of business investment to attract equity capital from individuals having no direct knowledge or association with the industry.

Still other forces developing in the late 1960's brought outside investors to cattle feeding. In the late 1960's when an overexpanded feedlot industry in the Southern Plains sought a broader base of equity capital to finance cattle on feed, urban investors were finding returns on Wall Street relatively unattractive. These investors were seeking other avenues for investment. Furthermore, tax sheltered investments became more inviting as inflated incomes pushed more individuals into relatively high marginal tax brackets.

Limited partnerships and tax shelters. New sources of customer capital were found in distant financial centers among investors who often knew virtually nothing about cattle feeding and usually never saw the cattle they owned. Most of these investors were attracted by two aspects of custom feeding: it had had a generally profitable history, and it offered a form of tax shelter to people in the upper reaches of the income tax brackets.

Large investors in cattle feeding of, say, \$50,000 or more would often deal directly with the feedlot in setting up feeding arrangements. However, beginning in 1969, some of the larger feedlot firms began public sale of limited partnership funds that would attract a mass of individual investments typically in the \$5,000 to \$20,000 range.

Costs are high for developing and managing publically offered limited partnerships. Costs of offering these public limited partnership funds can run above \$150,000 in fees for accountants and lawyers for preparing and filing the prospectus with the Securities and Exchange Commission. A portion of these costs go to investment underwriters for promoting the fund to investment clients. Only the large size feedlot operations (of 30,000 and up) can consider such funds as practical, considering the costs of their development. Even a 30,000 to 40,000 head feedyard would be marginal in size for supporting the overhead costs for operating a cattle feeding fund [10,16].

These publically-offered limited partnerships enable the larger feedlots to reach out to many small investors unacquainted with cattle feeding as investment [8]. Investment underwriters and their agents with skill in marketing common stocks, bonds and mutual funds offer these public limited partnership funds to their clients. As noted earlier, in the late 1960's, investment underwriters and agents sought new investments to offer their clientele in the aftermath of depressed returns from common stocks.

Again limited partnership investments offer the incentive of tax advantages to the high income individual seeking an investment. Individuals investing in such programs generally are required to have the following financial security:

- net worth of over \$50,000 (exclusive of automobile, home and furnishings),
- federal income tax bracket of 50 percent or above and,
- no more than 15 percent of annual gross income invested in the program.[19]

An attraction of cattle feeding for the high income investor lies in the use of prepaid expenses at the beginning of a cattle feeding program for shifting current income into a future tax year.

A West Coast Cattle Feedlot Consultant, Tim Runner, describes the tax advantages of cash accounting for cattle feeding as follows:

A special cash basis method of accounting is available to farming businesses (which include cattle.) This method enables the investor to declare expenses as they are paid and to declare income only when it is received. In other words, the costs of caring for and feeding cattle can be expenses as they are paid, and the income is taxable only after it is received. [15, p. 55]

Thus prepaying for feed and other expenses of feeding cattle can allow relatively heavy deductions from one's current year's income. This allows the investor in cattle feeding programs to create heavy expenses in latter parts of a year of relatively high income. The returns on the program are deferred until a later year, when further planning for deferring income and/or taxes can again be arranged. In the meantime, the investor in the relatively high income tax bracket has been allowed to invest money that would otherwise be paid in taxes, in effect receiving a "loan" which is interest-free and which isn't repaid if the invested money is lost.

Deferring income and income taxes by way of prepaying expenses in the current year of relatively high income through investing in cattle feeding programs can allow the investor one or more of the following advantages: [15, p. 61-64]

- receiving the income in a later year of relatively lower income (or even when retired) when taxes upon the income returned from the investment would thus be lower.
- defer income until later arranging for reinvestment of the returns in other tax shelters of a longer-term nature, such as real estate.

The high income investor with relatively heavy income tax deductions for feed expenses when beginning a cattle feeding investment has a lower risk of loss than the lower income investor. Any losses are shared in part with the U.S. Treasury, i.e. income taxes deferred are not required to be paid if the investment suffers sufficient losses. This risk sharing with the government by the higher income investor may cause him to assume greater before-tax risk in cattle feeding through higher borrowing in relation to his equity in the investment. Such higher debt to equity ratios can make cattle feeding exceptionally profitable to these high income investors. This point may be clarified by a brief review of the possible levels of debt financing allowed for cattle feeding.

Leveraged profits and losses.

With cattle readily marketable, cattle feeding is allowed relatively high levels of debt financing by lending institutions. Banks generally lend about two-thirds of the cost of the feeder cattle plus all of the cost of the feed; this represents a loan of 75 to 80 percent of the animal's cost when it reaches slaughter weight [16]. This suggests a leveraging level of 3:1 and 4:1.

Leveraging generally magnifies profits or losses. Whenever the rate of interest on borrowed capital is lower than the rate of return to total capital, leveraging increases the returns on the investor's equity capital. For example, on reasonable assumptions about cattle feeding, a rate of return to equity of 12.5% with no borrowed capital would have been 19.5% with a 2:1 leverage, and 26.5% with a 4:1 leverage (See Appendix A). However, higher debt to equity financing, with its required fixed interest payments deducted before showing returns to equity, can increase the number of periods showing losses in the short-run even while increasing the level of returns to equity over the long-run. For example, the study referred to above showed 32 months of losses in the 108 months 1960-68 when an unleveraged investment, but 41 months when leveraged 4:1 [11, pp. 296, 310].

More important for the present account of structural impacts is that leveraging increased the risk of ruin of limited partnerships. A relatively thin equity base can be fully eroded in an unprofitable cattle market over a few months. The arithmetic is fairly simple. With a 4:1 leverage, the investor has \$100 of his own and \$400 borrowed in a \$500 animal ready for market. If the market forces are such that the animal sells for \$100 less than its costs of purchase plus feeding, the owner has lost his entire equity [11, pp. 310-317].

As alluded to earlier, to reduce this risk of loss, many cattle feeders seek to market with relative frequency throughout a year. A major purpose of marketing each month, is to minimize the chances of such losses. A loss for one particular month can be offset by profits for other months, thus enabling the cattle feeding investment to continue to show a profit. However, this technique protects against only month-to-month price fluctuations. It gives no relief to prolonged low prices. If one's capital is spread over 5 or 6 pens of cattle marketed in as many consecutive months and if

the market is continuously bad for this period, then the entire equity capital invested in the cattle feeding is lost [11, pp. 310-317].

The ability of the cattle feeder to re-enter the cattle market is crucial if he is to recoup his losses. It is generally characteristic of the outside investor types of cattle feeders (participating in the formal limited partnership funds of the large size feedlot firms) that they have only a minor fraction of their investment capital in cattle feeding. Additionally, their household living expenses are provided by other sources of income. Thus, in even such a run of losses over a period of six months or more, these outside investors are usually financially able to replace their capital and continue or re-enter a cattle feeding operation if they wish. Furthermore, investors using cattle feeding as a tax shelter will typically offset cattle feeding losses against other income and thus greatly reduce the amount of their after tax loss. The critical question is not the *ability* of the outside investor to re-enter but his *willingness* to do so.

PRESENT PROSPECTS FOR THE STRUCTURE OF CATTLE FEEDING

The equity base of some of the large size feedlot systems operating with funds of the outside investor (via limited partnerships) has now been depleted completely with the relatively heavy cattle feeding losses of late 1973 and early 1974. This is not to say that the investors in those funds may not decide to invest in new limited partnerships to feed more cattle. The following crucial questions arise at this time. Is there likely to be a short period in which such investments in limited partnerships are very small because of the bad publicity of large losses?^a Will the promoters find it easier to recruit a new group of investors than to get further investments from many of today's losers?

Those feedlots which depended most upon outside investment capital appear currently to be the emptiest. However, with the exception of a few feedlots which have long done an outstanding job for a very solid group of customers, most custom lots are suffering from a lack of customers. Many large lots may be partially empty this fall and winter for lack of customers.

Will the Corn-belt feeders be able to take up the slack and assume the role of feeding the numbers of cattle that would normally be fed in the larger commercial lots west of the Missouri River? With relatively high prices for their scarce supplies of corn, can the Cornbelt farmer be expected to expand cattle feeding in the immediate months ahead? A further question regards the ownership of the large commercial feedlots. Many have merged into multi-lot operations. Some of these joined in conglomerate movements with the petroleum industry of the Southern Plains. If outside investors do not continue to utilize cattle feeding as an attractive investment, who will own the cattle on feed? Without relatively sizeable utilization levels, the larger commercial feedlots may face further financial squeezes and go to new ownership. In effect, cattle feeding may take three directions:

- a) continuation of farmer and rancher owned cattle on feed in their own individual feedlots as characterizes most of the cattle feeding of the Cornbelt states;
- b) continuation of commercial custom feeding for nonagricultural investors and farmer and rancher customers;
- c) movement toward ownership of feedlots and cattle by firms having broad equity bases that allow ample risk capital and reduction of risk through diversification.

^aRemember, however, that an investor in the 50% bracket shared his losses 50:50 with IRS.

While all three methods of feeding cattle now exist, commercial custom feeding for the outside investor was greatly on the rise in recent months before the 1973-74 cattle price bust. The relative share of cattle fed by the above three operations is likely to undergo change in the recovery period from the current cattle crisis.

LONG RUN CONSIDERATIONS

What about the longer run prospects? These prospects are for continued growth of the commercial lots, although probably at a slower rate. The physical facilities will still be there, even if some of the owners sell out or go bankrupt. The financial squeeze in the late 1960's led to mergers into stronger hands. Past patterns suggest that a feeding industry will emerge within two or three years that is even more concentrated as far as both size of lots and firms [11, p. 204].

Over time, the outside investors may continue a major role. Unless there is tax reform legislation which deters the tax write off of current farm costs (feed and interest in this case), against current non-farm income, the high income investor is likely to be back into cattle feeding. Since such high-income outside investors can accept lower economic returns because of savings on taxes from cattle feeding than the farmer-rancher and can pass a greater share of any losses to the tax collector, they are very tough competitors for all other cattle feeders.

In simple terms, high income investors who use cattle feeding as a tax shelter have an indirect subsidy that brings them attractive returns from cattle feeding when the economic profit margins to the industry are not attractive. In brief, it is hard to compete against tax-subsidized investments.

To restate the preceding paragraph, in more formal economic terms, tax incentive advantages of tax shelter investments lower the risk and raise the returns to the investor. These advantages lead over time to greater investment levels than otherwise, and in turn tend to reduce the long run returns to cattle feeding. Over time, the before-tax returns to cattle feeding would fall. Traditional agricultural-based cattle feeders without sufficient income from other sources to offset the risk of losses or to make cattle feeding investments useful for income averaging and tax savings are likely to continue to withdraw from cattle feeding. Therefore, entry into cattle feeding and continuance by feedlot firms presently in it will be limited to those able to attract risk capital in a regional or national market. The larger firms have the ability to attract the broad equity base essential to the bearing of cattle feeding risks. Investors with high income from other sources will likely bear the risks of cattle feeding.

INDUSTRY STABILITY AND EFFICIENCY

However, it must be realized that depending upon the non-agricultural investor for financing the nation's fed beef is a highly unstable source of supply in contrast to the more traditional farm and ranch cattle feeding sector. Attractive investment alternatives in petroleum, real estate or common stocks can cause a major decline of outside investors in cattle feeding programs. As a result, the supply of cattle on feed and the cattle price pattern may be more volatile in the future than in the past years. The causes lie in the additional influences of a highly volatile investment sector that may enter and exit from cattle feeding as returns appear more or less favorable than nonagricultural investment alternatives.

It is obvious that present income tax policy is aiding the larger cattle feeding firm. As regards economic efficiency, subsidizing beef production can distort cattle feedlot sizes

away from those most efficient in production. Instead of competing solely on the basis of least cost production, feedlot firms compete in part upon ability to obtain risk capital from investors of high income who require less risk premium because of tax advantages.

Subsidies to large-size feedlot firms, indirect though they be, would tend to lead to survival and growth of those firms on a basis of other than economic efficiency. This matter gains in importance as beef continues to assume a larger proportion of the consumer food dollar and agriculture's income. If the nation seeks to subsidize beef production, direct grants to feedlot firms is an alternative. Then, true economic costs of the subsidies would be more apparent. However, in a world of growing concern for energy supplies, the beef industry would seem to be a most unlikely recipient of national subsidy.

IMPLICATIONS FOR OTHER COMMODITIES

Generalizations to other commodities must be cautious: agriculture is not one industry but many.

First, the rapidity of structural evolution in cattle feeding was due to a unique combination of circumstances which are not likely to be found in other major agricultural commodities.

Second, wherever in agriculture there is an opportunity to postpone income taxes or to convert income to capital gains, there will be investors who are interested. To convert that investor interest into actual investments ordinarily requires a go-between—a promoter. In cattle feeding, the large feedlots found it to their advantage to become the promoter. In cattle raising, specialist promoter firms have arisen to take advantage of the opportunities. As agriculture becomes more industrialized (i.e., more like the rest of the economy), the perceived opportunities will multiply for the promoters of tax-shelter investments in many phases of agriculture.

While the limited partnership has been demonstrated to be an excellent vehicle for the promotion of such investments, it is not the only possible link. The Subchapter S corporation is being used to bring investor money into large hog farrowing units [13]. Direct contacts between large investors and large agricultural operations can bypass the limited partnership.

Third, a structural revolution in an agricultural sector may have only a very tenuous relation to productive efficiency. The impressive advantages of the High Plains feedlots have been financial ones rather than any decisive edge in productive efficiency. Tax reform would not eliminate the present structure of cattle feeding and restore the previous one. However, tax reform might help to keep competition in other agricultural commodities more on the basis of productive efficiency.

Fourth, the evolution of an agricultural industry into more financially sophisticated hands and larger firms does not guarantee the macro stability of that industry. The recent price patterns in the broiler, turkey and egg industry suggest that the highly concentrated poultry industry has not overcome the ills that were thought to vanish once poultry was no longer widely dispersed amid many relatively small producing units. The current crisis of the cattle feeding industry is perhaps more heightened by its current structure rather than being cushioned. A dispersed cattle feeding system into many relatively small units would suggest a more rapid adjustment of risk capital for cattle feeding than a concentrated specialized feedlot system that must look to the highly sophisticated urban investor who can readily channel capital into various alternative investments, from petroleum well drilling, to real estate and common stocks. In a nation of consumers that are concerned about the stability of their food supplies, that lesson should not be forgotten [14].

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SUMMARY AND CONCLUSIONS

Anyone interested in the question of who will control U.S. agriculture will be interested in the continuing evolution of U.S. cattle feeding [14]. Cattle feeding is in the midst of a dramatic increase in concentration. The cause-agents of change are complex, but mainly do not involve vertical integration as was instrumental in the broiler industry. Tax reform is the instrument of public policy which might be most significant in slowing down further concentration. This changing industry may be a precedent for some other agricultural commodities. Indeed, the tax shelter instrument of the limited partnership is being tried in egg and hog production and in several specialty crops.

The current crisis in the cattle feeding industry encourages examination of the structural evolution that has accelerated in the industry in recent years. The beef to satisfy the increasing demand in the past decade was provided in large part by a great increase in the number and size of commercial custom feedlots, particularly in the Plains. With the rise of the many large size feedlots of the Plains, firms sought a broadened supply of equity capital to finance the cattle on feed. The earlier practices of custom cattle feeding by the larger feedlots reached out beyond the professional cattle feeders, the farmer-rancher sector, and even the cattle feeding clubs that helped bring in the smaller outside investor. Business and professional men turned to cattle feeding as an investment.

The over-expansion of the industry in the late 1960's, encouraged mergers into multi-lot operations and the feedlot promotion of limited partnership equity funds. These funds were promoted nationally and helped fuel the rapid expansion of the feedlot firms. Now that cattle feeding is facing a crisis, the question arises as to the effects of these two new characteristics of the industry: (1) concentration of cattle feeding into fewer firms, and (2) heavy financing by nonagricultural investors.

The rapid influx of the outside investor grew in part because cattle feeding served as an attractive tax shelter. The investor who faced the possibility of deferring income and taxes, found the industry attractive even when cattle feeding profits were relatively low. Thus, it appears that large lots fueled by outside investment propelled the cattle feeding industry into even further expansion in the early 1970's at a time when cattle feeding returns, without tax considerations, did not warrant it. We do not wish to explain all of the crisis by these structural forces. It is realized that the forces of inflation, along with unusual conditions in the world markets for grain and meat, deterred a recognition of the potential losses facing the industry in the past year.

Now as the industry finds at least a temporary reduction of the major role of the large commercial lots feeding for the outside investor in mid-1974, the question arises as to who will feed the nation's beef in the coming year. It appears at this time that placement of feeder cattle is holding up better in the Cornbelt farmer feeder area than in the commercial feedlots utilizing outside investor equity capital for financing the cattle on feed. However, relatively high corn prices this year further complicate the possibility of the Cornbelt expanding into feeding more of the nation's current calf crop. Over the months ahead, as grain and cattle prices return to clearer patterns, the question remains as to the role of the large commercial feedlots. Both their ownership and their sources of equity for the cattle on feed may assume new forms. In the meantime, continued evaluation of the future structural shifts in cattle feeding and the current cattle crisis merits consideration by consumer and producer alike.

APPENDIX A

EFFECT OF LEVERAGE UPON RETURNS TO EQUITY

To simplify that analysis of the effect of varying the equity to debt levels in cattle on feed, a total investment of \$300 per head is assumed. It will be further assumed that the cattle inventory is completely turned each 150 days or five months, for 2.4 turns per year. Interest cost is assumed to be 9 percent.

To generalize the effect of leveraging levels upon the returns to equity, Hopkin, Barry and Baker have developed the following formula.^a

Consider profit as a return to capital invested minus interest cost for debt capital.

$$\text{Let Profits} = (rA - iD)$$

r = returns on total capital

A = asset value, representing total capital per unit

i = interest rate

D = debt capital

Dollar returns are transformed into percentage returns to equity by the following:

$$\text{Rate of return to Equity Capital} = \frac{rA - iD}{E}$$

E = equity

Assume the following three leverage levels of debt to equity.

a) no debt capital, i.e., \$300 investment per head of cattle as equity

b) debt capital of \$200, equity of \$100 for 2:1 ratio

c) Debt capital of \$240, equity of \$60 for 4:1 ratio

For the above assumptions of leverage levels, the following returns to equity are calculated:

$$\text{Rate of Return to Equity Capital} = \frac{rA - iD}{E}$$

$$\text{a) RREC} = \frac{12.5 (\$300) - 9 (0)}{\$300} = 12.5 \text{ percent}$$

$$\text{b) RREC} = \frac{12.5 (\$300) - 9(\$200)}{\$100} = \frac{\$37.5 - \$18}{\$100} = 19.5 \text{ percent}$$

$$\text{c) RREC} = \frac{\$12.5 (\$300) - 9 (\$240)}{\$60} = \frac{\$37.50 - \$21.60}{\$60} = \frac{\$15.90}{\$60} = 26.5 \text{ percent}$$

By leveraging the investment to a 2:1 debt to equity ratio, the returns to equity were raised from 12.5 to 19.5 percent. A doubling of the debt to equity ratio to 4:1 raised the returns another 7 percent to 26.5 percent return on equity.

^aJohn A. Hopkin, Peter J. Barry and C. B. Baker, *Financial Management in Agriculture* (Danville, Illinois: Interstate Printers and Publishers, Inc., 1973), p. 149.