

# California Livestock Industry

competitive position of state's industry influenced  
by transportation rate structure and distribution

James B. Hassler

Distance between livestock-producing areas and the dependent demand centers is of major importance because the cost of transportation influences the price received by the producer and the price paid by the consumer—and is one of the strategic factors that bear on the competition between producing areas.

Changes in demand centers—due to income shifts, population changes, or altered tastes—tend to be gradual or to have a similar influence on nearly all producing areas. Changes in the structure of transportation rates have immediate and usually unequal effects on competing areas of supply.

The impact of transportation costs on the California livestock industry must be considered in relation to the national livestock economy—actually, the national livestock-feed economy. The supply aspects of the national economic structure of the beef cattle segment of the livestock industry reflect the specialization of land usage as represented by the feeder-cattle raising operations on native pastures—extending through the Sierra from the western Great Plains—and by the intensive hay and feed-grain production found in the Midwest. Final meat demand is strong in northeastern United States and spreads rather lightly over the remainder of the nation—except for an increasingly strong concentration in the Pacific Coast states. The location of finishing operations and slaughtering plants and the form of distribution are all contingent on the transportation rate structure.

Swine—representing another important segment of the industry—are more strongly grain-oriented than cattle, if those swine produced on garbage feed are excluded. With the location of surplus demand for pork products similar to that for beef, it is reasonable that surplus swine production should be in the major feed-grain producing area of the North Central region. However, the major determinant of this fact is the relative transportation costs between grain and pork products compared with the conversion rate of grain into pork. Normal transportation rate relationships of the past have made it less costly to ship grain in the form of pork products than to raise swine near population centers on grain shipped from remote supply

areas. Similarly, the relationship of the relative rates on hogs and pork products compared with the physical yield of products from hogs has encouraged slaughtering plants to locate near the live animal supply and away from the consuming centers with deficient local supply.

Gradual changes in demand and supply conditions cause gradual changes in the complex geographic balance in the industry. Sudden changes in the structure of transportation costs cause violent readjustments in the industry, and the gains and losses usually fall unequally on competing operators in different areas.

## Changes in Transportation Costs

The effect and significance of changes in railroad freight rates have been reduced by the development of efficient highway trucking facilities.

Analyses of the effects of changes in transportation costs must consider the general level of the rates and the relative level of grain rates, livestock rates, fresh meat rates, and cured product rates.

During short time periods—under conditions of no offsetting changes in demand and no relevant changes in the relative rate structure—increases or decreases in the general rate level will be accompanied by changes in the opposite direction in the producer price at areas of surplus supply. If increases or decreases are percentage changes, the effects will be greatest on the remote areas of surplus supply. After a longer time period has elapsed, increased transportation costs will usually cause an increase in the price in the deficit area and a decrease in price in the surplus area.

California—relative to local consumption rates—is a deficit beef and pork supply area. Increased transportation costs on products from the Midwest would tend to raise consumer prices for meat and farm prices for live animals in the local area. This condition would induce expansion in local supply and a reduction of inshipments. Lowered transportation costs would produce the opposite effects.

The relationships—of the relative level

of transportation costs on feed grains, livestock, and livestock products—are major determinants of the location of finishing operations and slaughtering plants.

Dry-lot feeding operations apparently require about six pounds of grain for cattle and four pounds of grain for hogs for each pound of gain—establishing critical ratios of 6-to-1 for cattle and 4-to-1 for swine—and indicating that swine are more efficient converters in a physical sense.

It would appear to be uneconomical for a full-grain cattle feeding operation in California—based on imported grain—to compete with a Midwest operator because the grain equivalent in the form of a beef carcass could be shipped to California for less than the grain itself.

The historical grain-to-livestock transportation ratio means that the swine industry—even if it were not cheaper to move pork products than live hogs—has a slight advantage in raising hogs in the grain-producing areas. There is a further advantage due to the profitability for slaughtering plants to locate in the grain-producing area near the hog supply.

The historical record of the ratio of transportation costs on live animals to fresh meat has most relevance to the beef segment of the industry. Since pre-World War II days, the rate ratios indicate a continuous advantage for shipments of fresh beef to northeastern markets, an advantage for live animal shipments to California prior to 1946 and about an equal advantage for live versus fresh shipments to the West after 1946.

Inshipments of slaughter animals to California represented about one third of the state's cattle slaughter prior to 1946 and about one fourth thereafter, although sizable increases have been observed in the last few years. Westward from Omaha, the ratio tends more strongly toward an advantage for shipping live animals to California markets. The increases in inshipments of slaughter cattle in the past few years might be primarily the result of increased finishing operations at Denver and points west. Some fresh beef was shipped to California prior to 1946, when rates were such as to favor live animal movements. This indicates that factors other than relative

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## LIVESTOCK

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rates are frequently of major importance in the purchases and sales of meat products between areas.

### Pork and Hogs

Fresh pork movements are generally restricted to those cuts that are predominantly consumed in fresh form, namely, spareribs, butts, and loins. The high-value parts of the carcass—hams, picnics or shoulders, and bacon—are generally consumed in cured form. With transportation rates lower on cured meat than on fresh meat, it is reasonable that a packing house would process prior to shipment instead of at destination. However, this processing may only proceed to an incomplete stage, such as pickling or dry salt, with smoking and packaging being accomplished at the receiving market.

The historical rate picture—with reference to trends in California's local hog

supply, in shipments of live hogs, and in shipments of pork products—is striking evidence of the comparative advantage of the Midwest in livestock-finishing operations.

Beginning in 1945, local hog supply dropped from 26% to about 16%, in shipments of live hogs dropped slightly from 28% to about 26%, but in shipments of pork products rose from 46% to 60% of California's consumption. Since then, live hog in shipments have held up to about 28% to 30% of the consumption in spite of the fact that the transportation rate change in 1945 was such as to favor the in shipment of pork products to California.

Prior to 1945, the western states of Colorado, Idaho, and Texas contributed to the dominant supply coming to California from Nebraska. Since 1945, those three states have greatly curtailed their shipments to California, while Iowa and Missouri have expanded their shipments. This is in contradiction to the relative rate change in 1945, which should have favored live animal shipments from the

western states and pork product shipments from the Midwest. It is possible that the perishable nature of loins might make it difficult for Midwest supply to arrive satisfactorily and that meat wholesalers having slaughter facilities would shift to shipping in live hogs instead. Wholesalers would have to reach into the Midwest to obtain this supply if the western states found it more profitable to slaughter their hogs and ship fresh pork by means of modern rapid trucking facilities.

A serious lack of information on all movements of livestock and livestock products—especially with respect to form of product, type of carrier, and origin and destination—hinders the businessman and the researcher in appraising the significance of changes in transportation costs, in demand, in the technology of feeding and processing, and in the distribution of livestock and livestock products.

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## PONDEROSA PINE

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Cleanup burning consists of piling and burning dead brush, slash, felled dead trees, and prunings after the area has been broadcast burned. The procedure is to start the fire and gradually pile on the dead material as it burns. One person can frequently keep a half dozen or so brush piles burning. The dead brush is not piled and left before it is burned at a later date.

Cleanup burning can be done under a wider range of conditions than broadcast burning. The current study has shown that brush piles can be safely burned with the humidity as low as 11%. On the other extreme, piles can be effectively burned during light rains. Wind is less important than with broadcast burning. Piles are placed so that tree trunks, especially of timber crop trees, will not be

damaged. Under the conditions specified, fire seldom creeps from the brush piles if the area has been broadcast burned just prior to the cleanup.

From the time of the first rain of one inch or more and up to April 1 of the past two winter seasons at Hobergs, there were 51 and 55 days where conditions for broadcast burning were satisfactory, and 75 and 87 days for cleanup burning. There were 42 and 43 days during which either rain or snow was falling, and only 23 and 12 additional days for 1952-53 and for 1953-54 in which no burning was practical.

### Role of Prescribed Fire

The role played by prescribed burning in brush manipulation and game range improvement is complex. It kills seedlings and the thin-barked mature manzanita bushes, and consumes the wood; it stimulates the germination of brush seeds and later becomes the tool with which to eradicate them; the ashes and reduction of litter provide a seedbed for the artificial or natural establishment of desirable browse species. Fire encourages the stump-sprouting of such palatable plants as black oak, dogwood, western mountain mahogany, and deerbrush. Burning stimulates the growth of legumes, many of which are palatable as forage and may increase soil nitrogen. Finally, the investment in the improved and managed area is protected by fire hazard reduction. Experimental work on each of these items is in progress.

The effects of prescribed burning on

the forest itself and on other land uses are also being studied. The studies include the use of fire in improving composition of forest stands and the effects on forest tree growth; the preparation of seedbeds and the effect on forest reproduction; the effect of fire on seed-eating rodents, on soil fertility, water yield, and recreation; and on the economics of the practice of prescribed burning in land management.

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New sprouts of western mountain mahogany, a fairly shade-tolerant species and a valuable browse for game and livestock.

The first step in prescribed burning. This operation is carried out during the fall and winter months when the soil is wet but the top pine needles are dry.

