

FACTORS AFFECTING EXVESSEL PRICES OF SKIPJACK TUNA IN HAWAII

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The skipjack-tuna industry in Hawaii is the most important segment of the state's commercial fisheries. However, the average annual catch of about 5,000 tons of this industry has remained relatively stable during the past two decades. The available evidence suggests that the lack of growth of this industry is not due to overfishing. On the other hand, the cost-revenue analysis indicates that, given the past input and tuna prices, the profit margins in the industry were too low to induce new investment.* The relatively high cost of inputs is associated with the labor-intensive fishing technique used and the bait problems. The main objective of this paper is to examine the factors affecting the prices of skipjack tuna.

Skipjack tuna vessels in Hawaii can be divided into two major groups: 10 of the vessels based on Oahu are members of the Tuna Boat Owner's Association; 2 others on Oahu, and 4 vessels on the other islands are operated independently.

Two major markets exist for the local catches: the fresh-fish market, and the cannery market. About one-third of the landings is consumed mainly as sashimi (raw fish). The remainder is canned and labeled as Coral Tuna--the only brand in the world canned from fresh tuna (not frozen).

Marketing Channel

The marketing channel varies among the vessel groups and among the markets (Figs. 1 and 2). Vessels belonging to the Tuna Boat Owner's Association utilize the Hawaiian Tuna Packers as the selling agency for fresh fish. The Hawaiian Tuna Packers usually has a representative contact the local wholesalers and wholesalers/retailers about their current needs for fresh fish. The United Fishing Agency acts as a selling agency for the other two vessels on Oahu and usually sells the fresh fish directly to wholesalers, whole-

salers/retailers and, occasionally, through auction. The independent vessels on the other islands sell their catch to wholesalers and retailers through their local selling agencies. When the fresh fish market is fully supplied each day, the excess is sold directly by the independent vessels, and the members of the Tuna Boat Owner's Association sell the excess, through Hawaiian Tuna Packers, to the cannery at a set price, which is lower than price at fresh-fish market.

Fresh-Fish Market

The fresh-fish market for skipjack tuna in Honolulu consists of two major sellers, or selling agencies, Hawaiian Tuna Packers and United Fishing Agency, and a number of buyers--wholesalers and wholesalers/retailers. This is a duopolistic market--in which price determination is usually dominated by the sellers. Since the sellers have almost perfect knowledge about the market supply and demand, the price is usually set higher than the price which would be expected in a competitive market. The local fishermen have been receiving higher average prices than those on the U.S. West Coast for 2 reasons: price of fish in the fresh-fish market is much higher than price paid by the cannery, and because fresh-fish market of skipjack is the largest in the United States.

How Exvessel Price Determined

The exvessel price of market fish is assumed to be a function of its quantities supplied to the fresh-fish market, the quantities of yellowfin tuna (a higher-quality substitute for sashimi, raw fish), the quantities of other fresh fish, and the season. However, the results of the regression by using monthly data for 1958-1966 indicate that the quantities of yellowfin tuna and other fishes have no significant statistical effect on the exvessel price of skipjack tuna. The prices of skipjack tuna

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*Shang, Yung C., The Skipjack Tuna Industry in Hawaii: Some Economic Aspects, University of Hawaii, Economic Research Center, 1969.

are influenced primarily by the quantity supplied and the season.

The quantities supplied to fresh-fish market is a function of total landings in some months of the off-peak fishing season. Since supply is relatively scarce during this period, 100% of total catch is frequently sold to the fresh-fish market. The exvessel prices usually fluctuate with quantity supplied. During the peak fishing season, however, the quantities supplied to the fresh-fish market, which accounts for a small proportion of seasonal catch of skipjack tuna, are at a relatively high level and at a relatively low and stable price.

The market demand for fresh skipjack tuna is not likely to increase significantly in the future because there is no positive significant relationship between the per-capita consumption and the per-capita income. Therefore,

the development of this fishing industry relies on the cannery market.

Cannery Market

The skipjack tuna cannery market in the landing level in Hawaii consists of one buyer, Hawaiian Tuna Packers, and a number of sellers--a monopsony market. In this monopsony situation, price determination is usually dominated by the buyer. In the short run, the exvessel prices paid by the local cannery do not fluctuate with the catches. They are set for a longer period. The cannery buys all excess catch at set prices that cannot be absorbed by local fresh-fish market. Therefore, the cannery demand curve is approximately a horizontal line with a perfect elasticity of demand within a certain period.

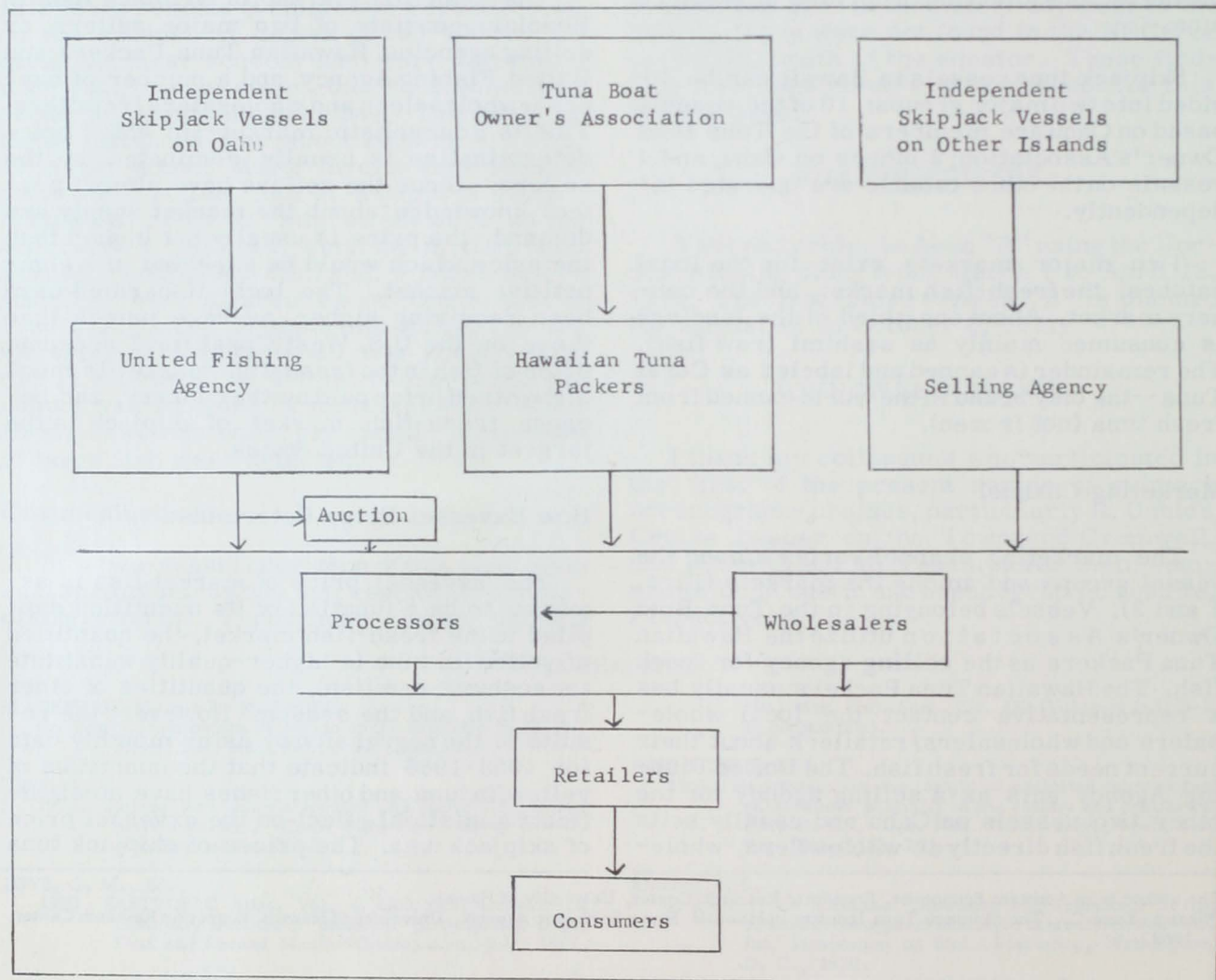


Fig. 1 - Marketing channels to the fresh fish market.

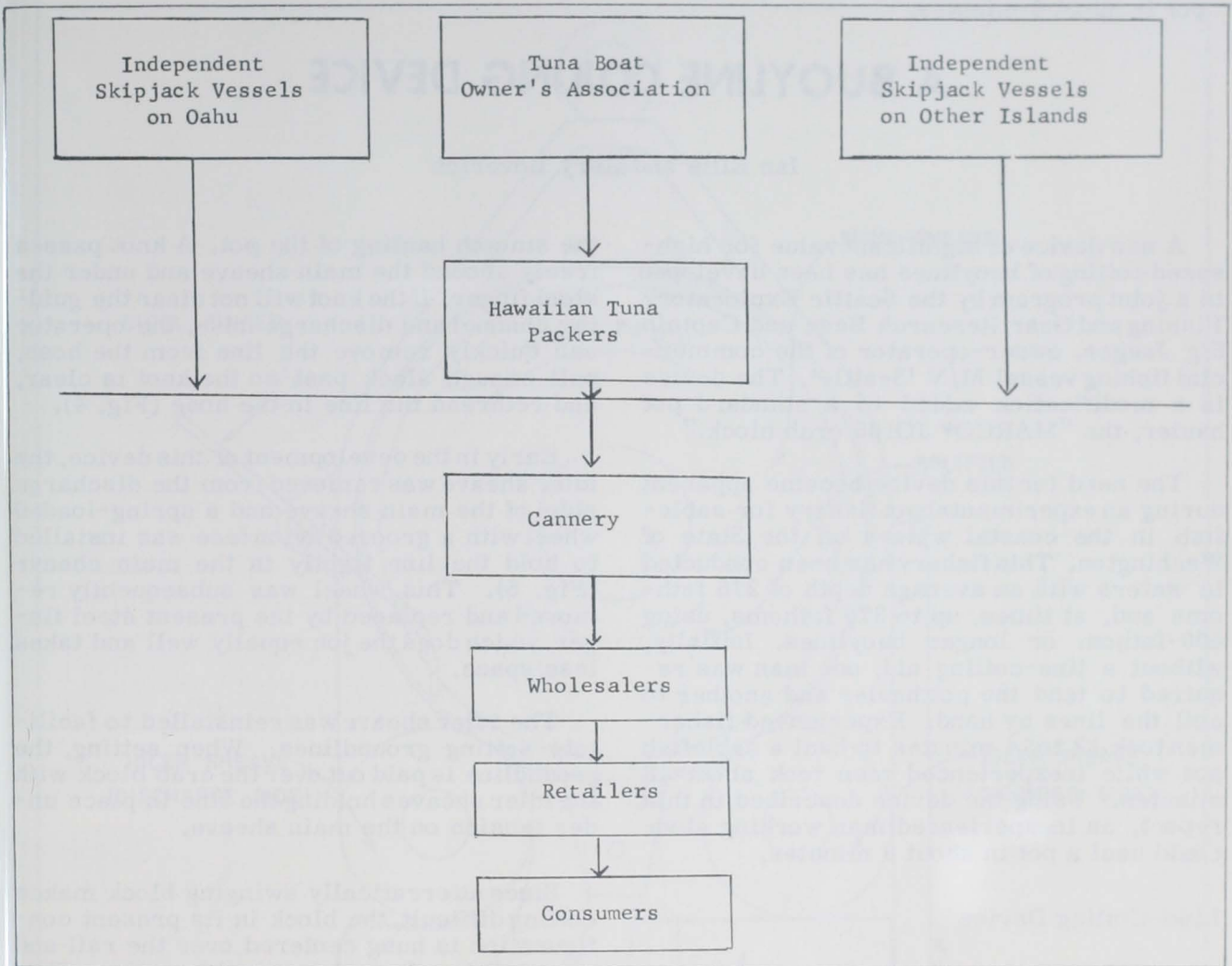


Fig. 2 - Marketing channels to the cannery.

Canned tuna packed from local catches has to compete with the mainland packed tuna in the local and mainland markets. The exvessel price paid by the local cannery does not fluctuate monthly. However, when the average exvessel price of skipjack tuna on the U.S. West Coast increased in recent years, the level of local price paid by the cannery also increased. On the West Coast, the prices of skipjack follow the prices of yellowfin. The coefficient of determination (R^2) of the regression is 0.98. This indicates that these two prices are moving up and down very closely. The difference between these two prices is about \$50 per ton.

The exvessel prices of domestic yellowfin is a dominant factor in determining the ex-

vessel price of skipjack tuna on the West Coast. This, in turn, imposes limits on the highest price that can be paid by the local cannery. So local fishermen are not able to increase their profit simply by raising the price of fish to a large extent. The profit should be increased mainly by reduction of costs through improvements in fishing technique.

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