

Title: **Tuna Price in Response to Changes of Market Structure and Ecosystem Conditions - Price Linkage Between Hawaii and Japanese Tuna Sashimi Markets**

Authors: Minling Pan, NOAA Fisheries (USA)  
Chin-Hwa Jenny Sun (Author), National Taiwan Ocean University / IATTC (USA)  
Dale Squires, NOAA Fisheries (USA)

Abstract: The objective of this research is twofold. First, this study uses a cointegration model to investigate possible potential long-run pricing relationships among the major landings of the Hawaii tuna longline fishery (bigeye, yellowfin, skipjack, and albacore tuna). This analysis will determine to what extent changes in the price of one species might impact prices of others in the Hawaii tuna auction market. Second, a Multivariate Markov-switching autoregressive model is used to identify regime shifts and price responses in Hawaiian bigeye and yellowfin tuna prices in relation to their own landings, explore potential price linkages with tuna sashimi prices in Japan, and examine the possible effect of changing tuna quality (such as the fat content) due to seasonal changes in sea surface temperature on the major fishing grounds. In addition, this study intends to evaluate the market effects of ENSO (El Niño/Southern Oscillation) cycles on prices. The price of fish is directly associated with fishers income, and income to fishers (and in turn, the dynamics of the fleet) might be influenced by both the availability of resources and price levels. This research advances our understanding of the dynamics of global tuna fisheries by providing a vital bridge between human and natural elements in support of an ecosystem approach to management.