

Sukanya Yongprayoon 2010: A Study of Current Frozen Shrimp Industry Operation and Forecasting the Import Quantity of Frozen Pacific White Shrimp in USA. Master of Science (Agro-Industry Technology Management), Major Field: Agro-Industry Technology Management. Department of Agro-Industry Technology. Thesis Advisor: Assistant Professor Pornthipa Ongkuaruk, Ph.D. 108 pages.

Shrimp industry is a main industry generated revenue to Thailand more than 93,000 million Baht per year. Thailand is the first rank shrimp exporter to the world several years consecutively where US is the major shrimp importer from Thailand. The objectives of this study are to explore the current operations throughout the shrimp supply chain especially the manufacturers; to study the suitable time series method to forecast the shrimp import quantity of US and to forecast shrimp import quantity from Thailand to US. The results show that manufacturers face several major problems such as raw material price fluctuation, insufficient raw material, quality of raw material, variant customer demand, economic crisis, non tariff barriers and Baht fluctuation. In addition, the competitors have lower cost. We study the individual and aggregate forecast and top down and bottom up approach. The result shows that the individual forecast is better than aggregate forecast by location i.e. the individual forecast of shrimp import quantity from Thailand to US is more accurate than the top down approach. On the other hand, the aggregate forecast by time is better i.e. the quarterly shrimp import quantity forecast is more accurate than monthly one. The best method is seasonal additive smoothing which means that the data is seasonal but has no trend. However, the time series forecast method only consider time, there may be other factors affecting the data as well such as economy, inflation rate, exchange rate, antidumping rate, consumer behavior, and competitor etc. that could affect the shrimp import quantity from Thailand to US. Hence, the future research could study forecast models that consider such factors.

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Thesis Advisor's signature