A TIME SERIES MODEL FOR WHEAT FLOUR CONSUMPTION

IN

KALUTARA DISTRICT

A PROJECT REPORT PRESENTED BY

M.M. MOHAMED IMRAN

to the Board of Study in Statistics and Computer Science of the

POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirements

for the award of the degree of
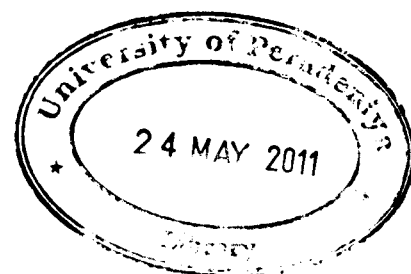
MASTER OF SCIENCE IN APPLIED STATISTICS

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2009

A TIME SERIES MODEL FOR WHEAT FLOUR CONSUMPTION

IN

KALUTARA DISTRICT

M.M.M. Imran

Post Graduate Institute of Science

University of Peradeniya

Peradeniya

Sri Lanka

Wheat flour is a favorite food items consumed in Sri Lanka. The country's entire wheat needs are met through imports. Therefore it is important to model its consumption volume and this could help the policy makers to plane the Sri Lankan economy.

This study presents the time series model for wheat flour consumption in Kalutara District, Sri Lanka. Data are recorded at equal time intervals. To fit a time series model Box-Cox transformation is used to obtain a stationary time series. After that, ACF and PACF graphs were used to find the order of the models. Based on the minimum AICC, BIC and likelihood statistics values, AR(1), MA(1) and ARMA(1,1) models were fitted. Our empirical results show that Moving Average (MA) time series models fit the price series well and they have correctly predicted the future trend of the price series within the sample period of study. Amongst a group of fitted models, MA (1) model is selected based on post-sample forecast criteria. The process of model fitting was done by using computer software known as ITSM 2000 developed by P.J. Brockwell and R.A. Davis (1996) for windows.