

Chapter 10

PERIODOGRAM BASED UNIT ROOT TEST

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INTRODUCTION

The time series are generally used in predictions, which should be stationary in order to give correct results while forecasting. Although, this kind of series usually contain a unit root, it is possible to reorganize the series and eliminate non-stationarity by some technics. One of them is to obtain first differences of the series.

In this study, eviews 11 software is used and periodogram-based unit root tests are performed for the analysis of time series. Agricultural time series data were used as an application in order to have more benefits of the study for researchers. In the analyzes, ADF test was performed on the data and it is seen that these results are compatible with the tests performed using periodograms. As a result of the analysis, it is seen that the wheat (annual / ton) production data contained unit root and the series become stationary, when the first differences are taken.

Frequently encountered problems in studies on time series are seasonality and trend features found in series. It is inevitable to have these two effects in such series, which are widely used in daily life. For example, natural disasters or serious economic crises that occur over time create a trend effect by affecting production.

From another point of view, the emergence of epidemics over time will cause a trend effect in production and cause important strategic concerns in the agricultural sector and affects the future periods due to the influence of investments. In terms of seasonality, high production rates of certain products are not expected in summer and consumption rates may show excessive amounts. This similar effect is valid during the winter months. From this point of view, it stands out as important issues to be taken into account while making effective strategic planning. It is very important to organize the data of previous years precisely in order to make strategic planning, to make forecasting for the future.

In the event of the above mentioned effects in the series, the stationarity of the series will be distorted and therefore incorrect results will be encountered in the

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