

FORECASTING PRICE LEVELS IN INDIA – AN ARIMA FRAMEWORK

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ABSTRACT

The monitoring of price level is important for keeping the economic condition of a country under control. This paper uses the monthly time series data on Indian Consumer Price Index (CPI) to create a forecasting model using the Box-Jenkins auto regressive integrated moving average (ARIMA) technique. This study finds the ARIMA (1,1,5) model for predicting CPI in India. The model may be used by policymakers to design the monetary and fiscal policy measures to regulate inflation in India. This paper is an attempt to create a model to forecast the price level at India. We validated the model using the monthly data from 1st January 2019 to 1st January 2020. Our model shows the forecasted Consumer Price Index has a CAGR of 6.67%, whereas the actual CAGR of CPI is 6.68% during the validation period. In the light of the deviation in target CPI and actual CPI, RBI has already decided to review the CPI-inflation targeting framework in February 2020.

Keywords: Inflation, Forecasting, India, Consumer Price Index, ARIMA.

JEL Codes: C53, E31, E37, E47.

INTRODUCTION

Inflation is possibly one of the most well-recognized and recallable indicators for controlling and judging economic wellbeing of a country (Enke & Mehdiyev, 2014). Uncontrolled inflation may negatively affect the purchasing power of the currency. Uncontrolled inflation also affects the investment scenario of the country, results in project cost over-run, enhances income disparity, and culminates difficulty in financial intervention (Hurtado et al., 2013). It is therefore important to forecast the expected inflation trend. An accurate prediction of inflation is important for making sound policy decisions (Mcnelis & Mcadam, 2004). In this study, we consider CPI as an important reflector of inflationary trends in economy. CPI may be considered as a summary statistic for frequency distribution of relative prices (Kharimah et al., 2015). CPI measures the changes in general level of prices of a group of commodities (Manga, 1977; Subhani & Panjwani, 2009). The forecasting of CPI is important in the sense that it helps in developing more accurate investment and savings decisions, resulting into better resource utilization and economic stability (Enke & Mehdiyev, 2014). The Urjit Patel led committees report (2013) suggested using CPI as nominal anchor for targeting inflation under monetary policy. This is useful, because CPI very closely follows the cost of living and also the expectations of inflation.

In this paper, the objective is to create a forecasting model of CPI, where CPI is an indicator of inflation in India. The rest of the paper is arranged as follows. The section “*Literature review*” provide the past empirical literature on forecasting of inflation. Section “*Data and period of study*” underlines the data and period of study. Section “*Empirical results*”