

# Inflation

2024-02-02

## AR model estimation and forecasting

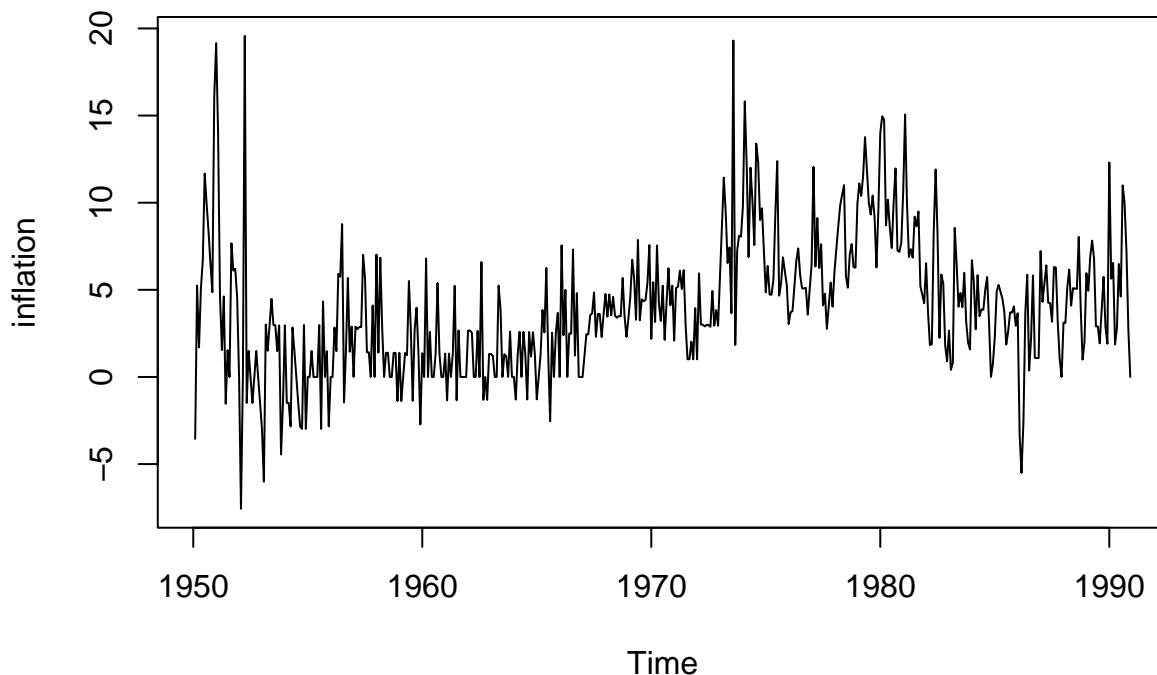
Consider the one-month US inflation rate. It's available in the Mishkin data in the Ecdat package. The rate is annualized and reported in percent with monthly observations from 1950 through 1990. The one-month inflation rate is the first column in the the Mishkin data. You can extract the first column, apply `as.ts()` to convert it to a time series object, and assign the result to the variable `inflation`. Next, you can plot the time series and its sample ACF using the `tsplot()` and `acf()` commands as you did in earlier chapters. From the time series plot you see that the inflation series is usually positively-valued, and it is fairly persistent, with an extended period of high inflation beginning in the 1970s. From the ACF plot you see strong, positive, but decaying autocorrelation estimates from lags 1 through 24. The AR model may provide a good fit to these data.

AR processes

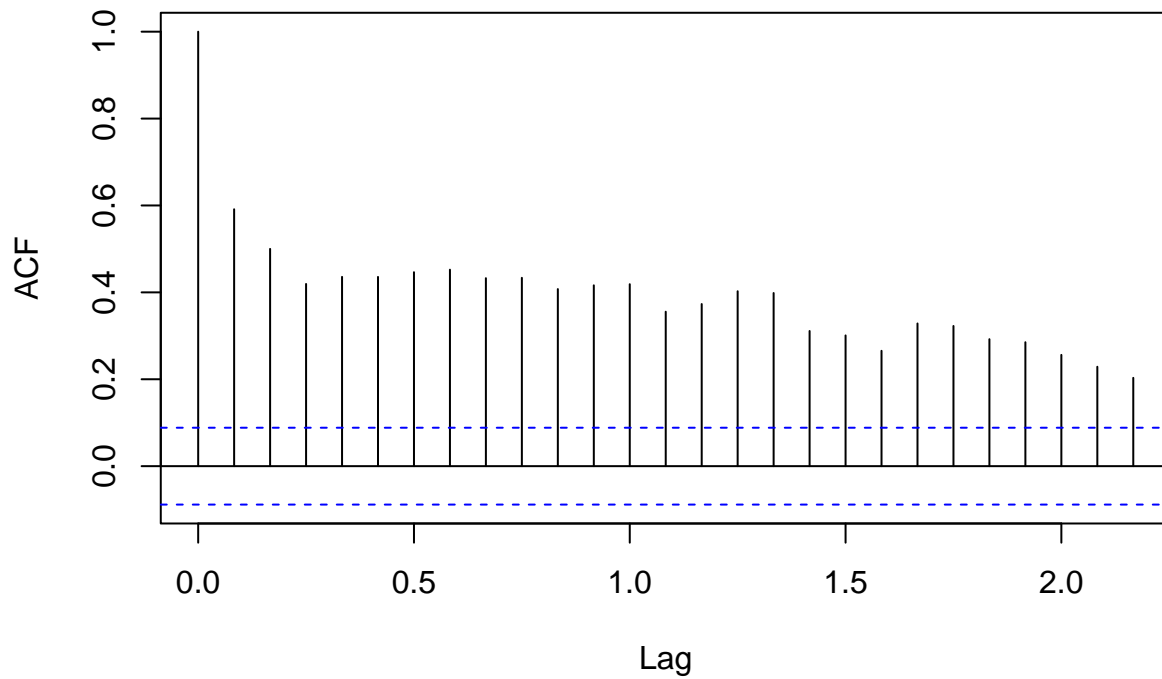
```
# AR processes: inflation rate
data(Mishkin, package= "Ecdat")
inflation <- as.ts(Mishkin[,1])
```

## Including Plots

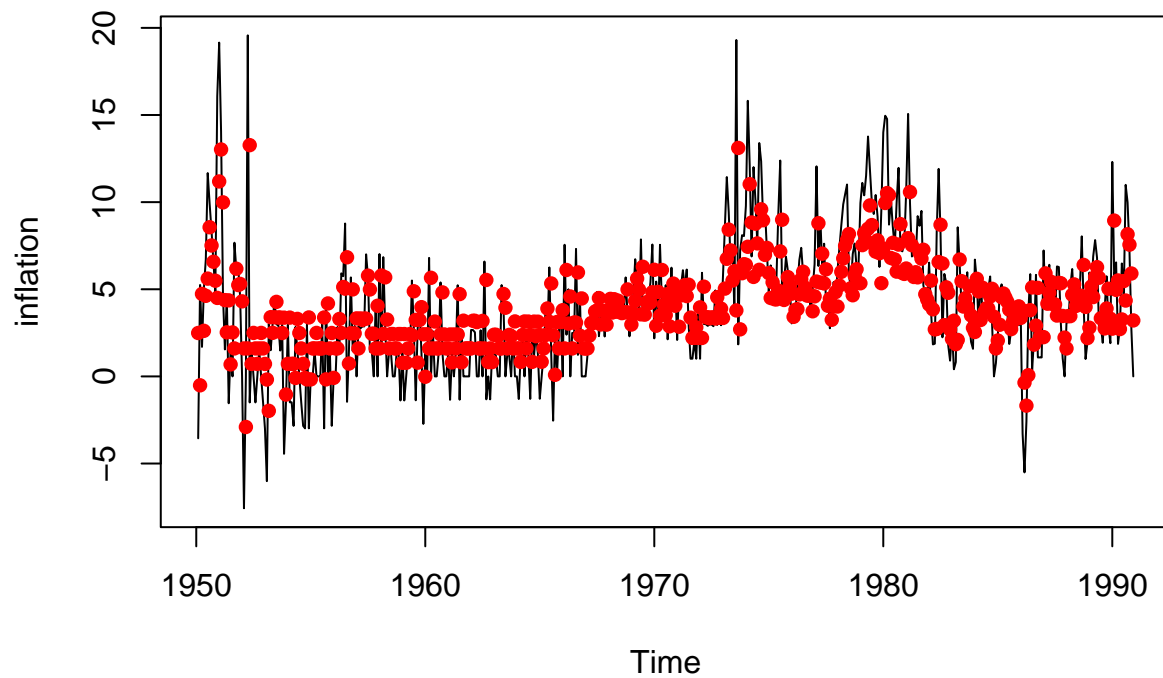
The following plots



## Series inflation



```
##  
## Call:  
## arima(x = inflation, order = c(1, 0, 0))  
##  
## Coefficients:  
##      ar1  intercept  
##    0.5960    3.9745  
## s.e. 0.0364    0.3471  
##  
## sigma^2 estimated as 9.713:  log likelihood = -1255.05,  aic = 2516.09
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.