

Rob J Hyndman
George Athanasopoulos

FORECASTING

PRINCIPLES AND PRACTICE

A comprehensive introduction to the latest forecasting methods using R. Learn to improve your forecast accuracy using dozens of real data examples.



3RD EDITION

 **OTexts**
Online Texts for Forecasting Principles and Practice

2. Time series graphics

2.7 Lag plots

OTexts.org/fpp3/

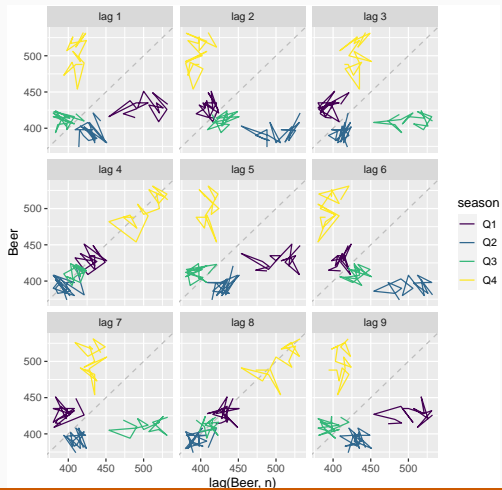
Example: Beer production

```
new_production <- aus_production |>
  filter(year(Quarter) >= 1992)
new_production
```

```
## # A tsibble: 74 x 7 [1Q]
##   Quarter Beer Tobacco Bricks Cement Electricity Gas
##   <qtr> <dbl>   <dbl>   <dbl>   <dbl>         <dbl> <dbl>
## 1 1992 Q1    443    5777    383    1289        38332  117
## 2 1992 Q2    410    5853    404    1501        39774  151
## 3 1992 Q3    420    6416    446    1539        42246  175
## 4 1992 Q4    532    5825    420    1568        38498  129
## 5 1993 Q1    433    5724    394    1450        39460  116
## 6 1993 Q2    421    6036    462    1668        41356  149
## 7 1993 Q3    410    6570    475    1648        42949  163
## 8 1993 Q4    512    5675    443    1863        40974  138
## 9 1994 Q1    449    5311    421    1468        40162  127
## 10 1994 Q2    381    5717    475    1755        41199  159
## # ... with 64 more rows
```

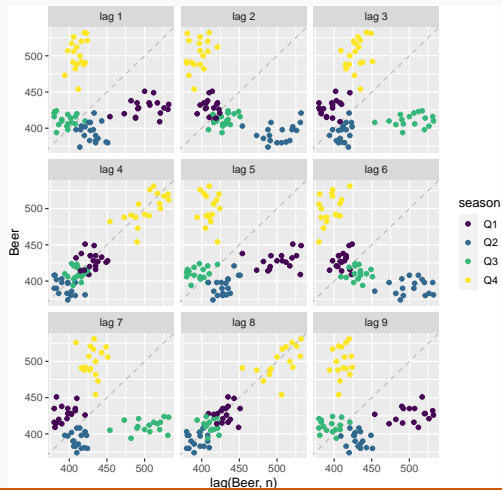
Example: Beer production

```
new_production |> gg_lag(Beer)
```



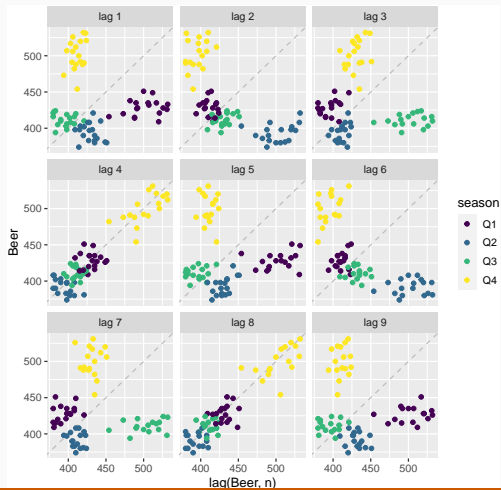
Example: Beer production

```
new_production |> gg_lag(Beer, geom = "point")
```



Example: Beer production

```
new_production |> gg_lag(Beer, geom = "point")
```



Each graph shows y_t plotted against y_{t-k} for different values of k .