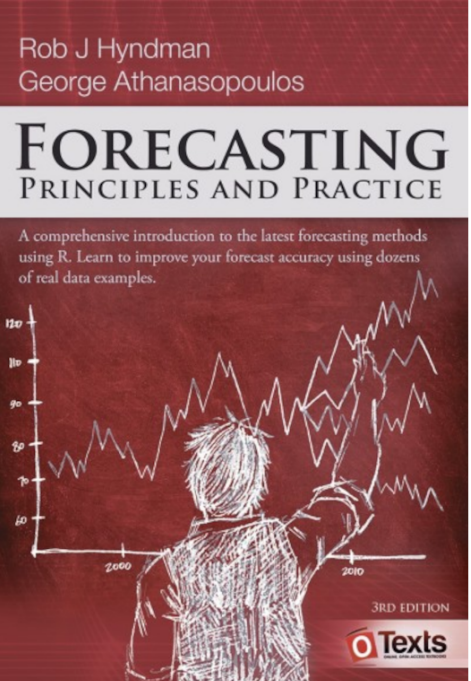


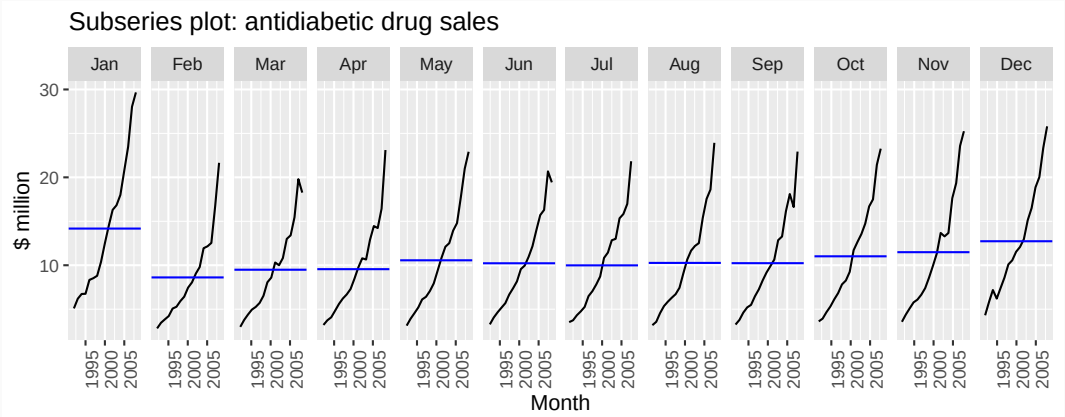
2. Time series graphics

2.5 Seasonal subseries plots

OTexts.org/fpp3/

Seasonal subseries plots

```
a10 |>
  gg_subseries(Cost) +
  labs(y = "$ million", title = "Subseries plot: antidiabetic drug sales")
```

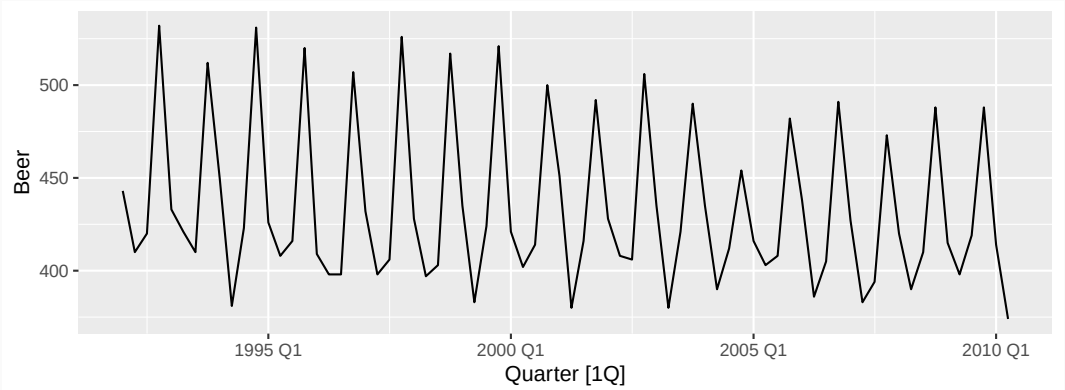


Seasonal subseries plots

- Data for each season collected together in time plot as separate time series.
- Enables the underlying seasonal pattern to be seen clearly, and changes in seasonality over time to be visualized.
- In R: `gg_subseries()`

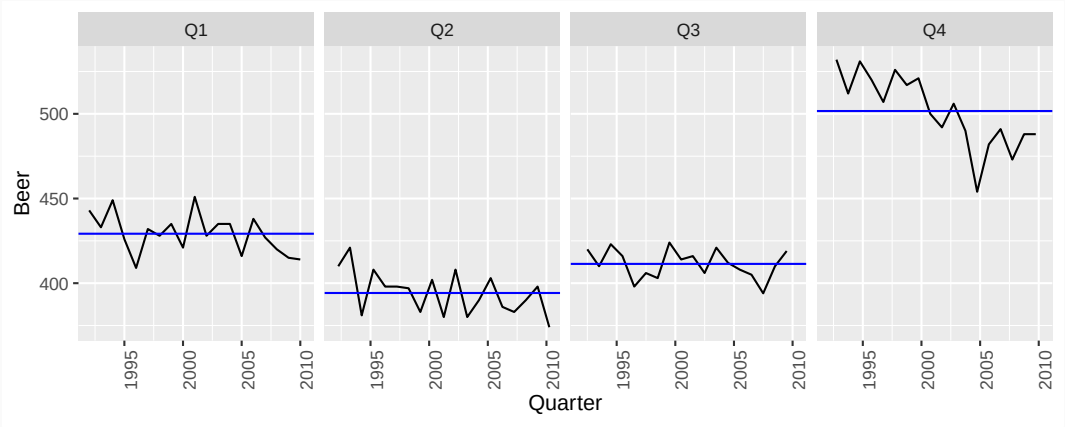
Quarterly Australian Beer Production

```
beer <- aus_production |>
  select(Quarter, Beer) |>
  filter(year(Quarter) >= 1992)
beer |> autoplot(Beer)
```



Quarterly Australian Beer Production

```
beer |> gg_subseries(Beer)
```



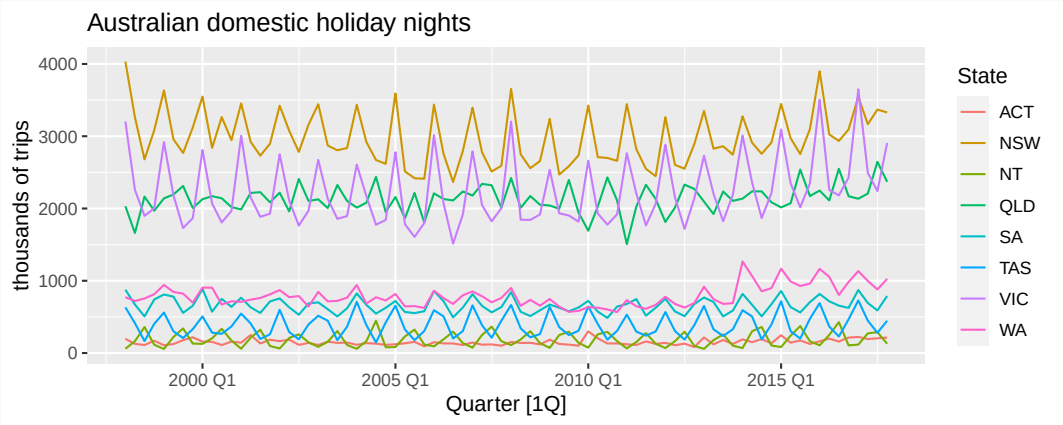
Australian holidays

```
holidays <- tourism |>
  filter(Purpose == "Holiday") |>
  group_by(State) |>
  summarise(Trips = sum(Trips))
```

```
## # A tsibble: 640 x 3 [1Q]
## # Key:       State [8]
##    State Quarter Trips
##    <chr>   <qtr> <dbl>
##  1 ACT   1998 Q1  196.
##  2 ACT   1998 Q2  127.
##  3 ACT   1998 Q3  111.
##  4 ACT   1998 Q4  170.
##  5 ACT   1999 Q1  108.
##  6 ACT   1999 Q2  125.
##  7 ACT   1999 Q3  178.
##  8 ACT   1999 Q4  218.
##  9 ACT   2000 Q1  158.
```

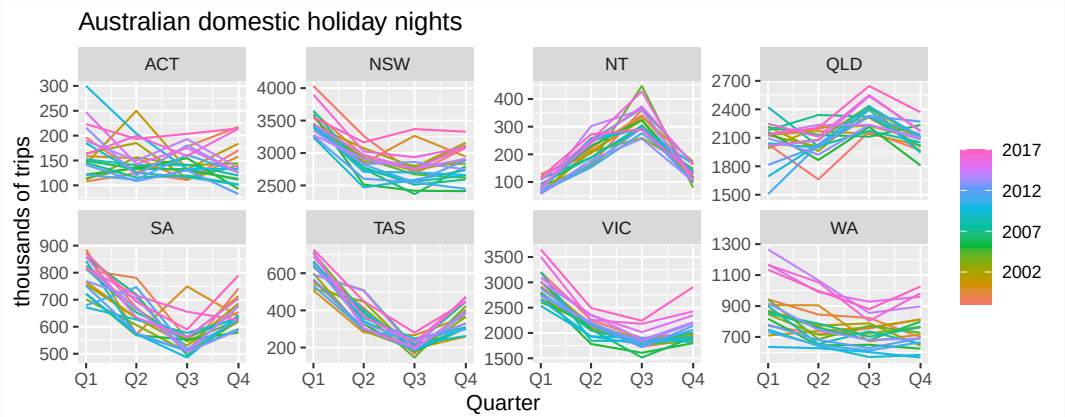
Australian holidays

```
holidays |> autoplot(Trips) +
  labs(y = "thousands of trips", title = "Australian domestic holiday nights")
```



Seasonal plots

```
holidays |> gg_season(Trips) +
   facet_wrap(vars(State), nrow = 2, scales = "free_y")+
   labs(y = "thousands of trips", title = "Australian domestic holiday nights")
```



Seasonal subseries plots

```
holidays |>
  gg_subseries(Trips) +
  labs(y = "thousands of trips", title = "Australian domestic holiday nights")
```