- m : `elecsales`

, , . `elecsales` m-MA . 3-MA Figure 1 .

```
autoplot(elecsales, series = "Data") +
  autolayer(ma(elecsales, 3), series = "3-MA") +
  scale_color_manual(values = c("Data" = "blue",
                                "3-MA" = "red")) +
  labs(title = "3-MA", color = NULL, y = NULL)
```

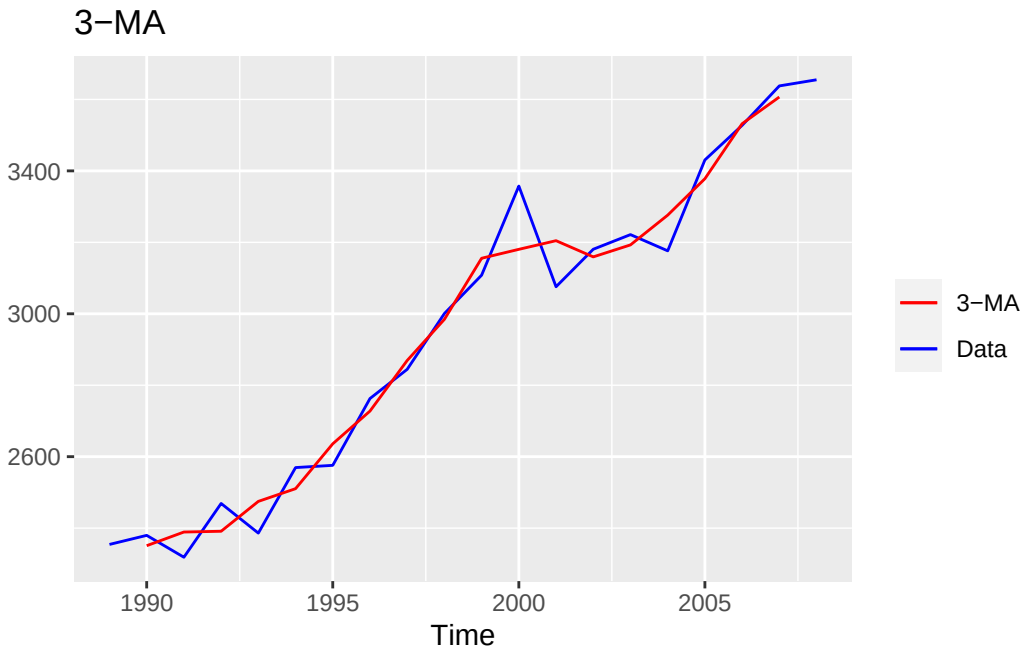

Figure 1: `elecsales` 3-MA

3-MA . m Figure 2 .

```
library(patchwork)
p1 <- autoplot(elecsales) + autolayer(ma(elecsales, 3), linewidth = .8, color = "red") +
  labs(y = NULL, title = "3-MA")
p2 <- autoplot(elecsales) + autolayer(ma(elecsales, 5), linewidth = .8, color = "red") +
  labs(y = NULL, title = "5-MA")
p3 <- autoplot(elecsales) + autolayer(ma(elecsales, 7), linewidth = .8, color = "red") +
  labs(y = NULL, title = "7-MA")
p4 <- autoplot(elecsales) + autolayer(ma(elecsales, 9), linewidth = .8, color = "red") +
  labs(y = NULL, title = "9-MA")
(p1+p2)/(p3+p4)
```

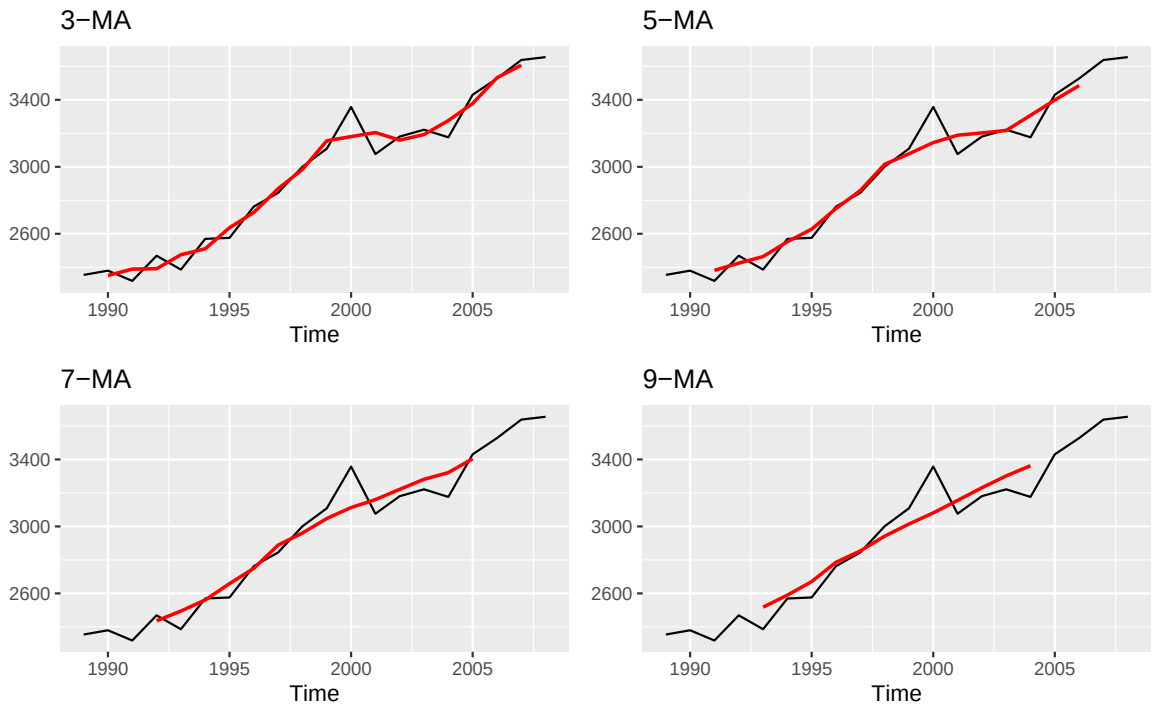

Figure 2: `elecsales` m

1956 2010 `ausbeer` $2 \times m$-MA Figure 3 .

```
library(patchwork)
p1 <- autoplot(ausbeer) + autolayer(ma(ausbeer, 4), linewidth = .8, color = "red") +
  labs(y = NULL, title = "4-MA")
```

```
p2 <- autoplot(ausbeer) + autolayer(ma(ausbeer, 8), linewidth = .8, color = "red") +
  labs(y = NULL, title = "8-MA")
p3 <- autoplot(ausbeer) + autolayer(ma(ausbeer, 12), linewidth = .8, color = "red") +
  labs(y = NULL, title = "12-MA")
p4 <- autoplot(ausbeer) + autolayer(ma(ausbeer, 24), linewidth = .8, color = "red") +
  labs(y = NULL, title = "24-MA")
(p1+p2)/(p3+p4)
```

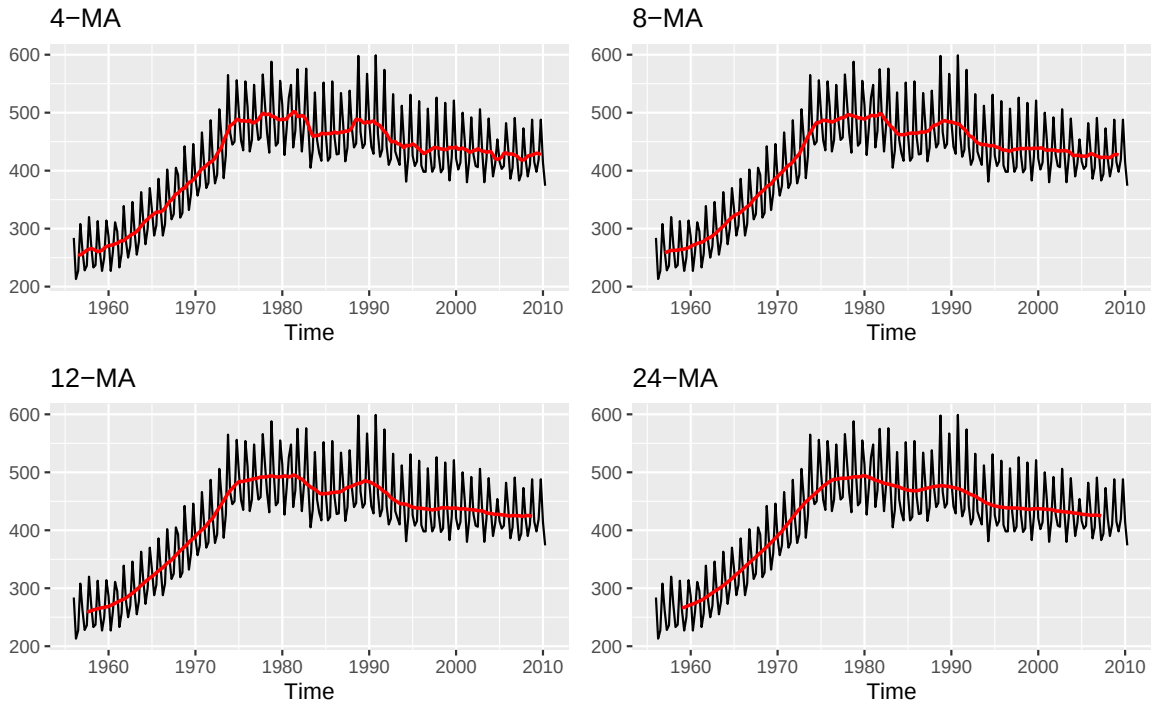

Figure 3: `ausbeer` m

- : `fpp2::elecequip`

```
decompose(elecequip) %>%
  autoplot()
```

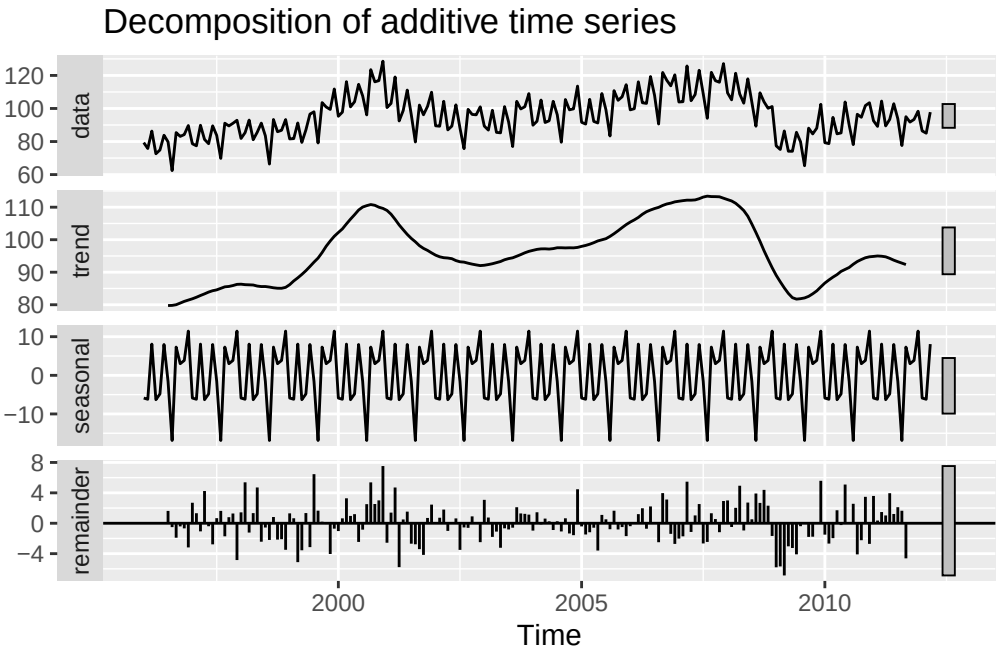

Figure 4: `elecequip`

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6 NA , .

STL

- STL : `fpp2::elecequip`

```
library(patchwork)
p1 <- stl(elecequip, s.window = "periodic") %>%
  autoplot() + labs(title = "s.window = 'periodic'")
p2 <- stl(elecequip, s.window = 5) %>%
  autoplot() + labs(title = "s.window = 5")
p1 + p2
```

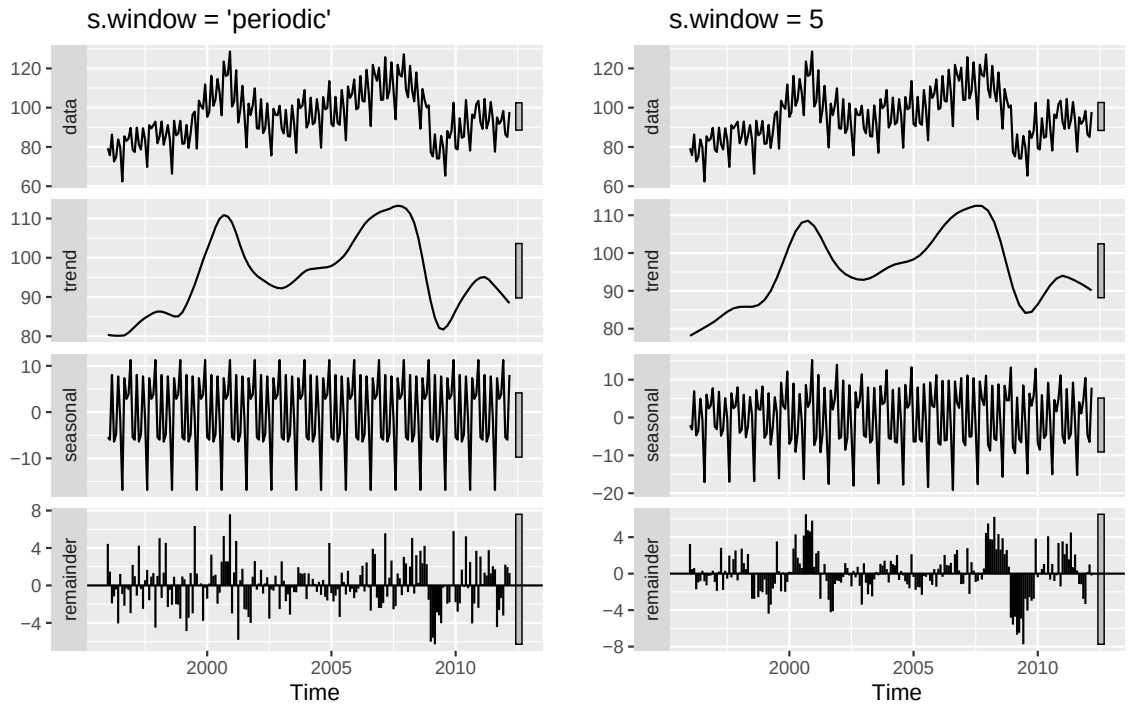

Figure 5: `elecequip` STL : `s.window`

```
library(patchwork)
p3 <- stl(elecequip, s.window = "periodic", t.window = 7) %>%
  autoplot() + labs(title = "t.window = 7")
p4 <- stl(elecequip, s.window = "periodic", t.window = 11) %>%
  autoplot() + labs(title = "t.window = 11")
p3 + p4
```

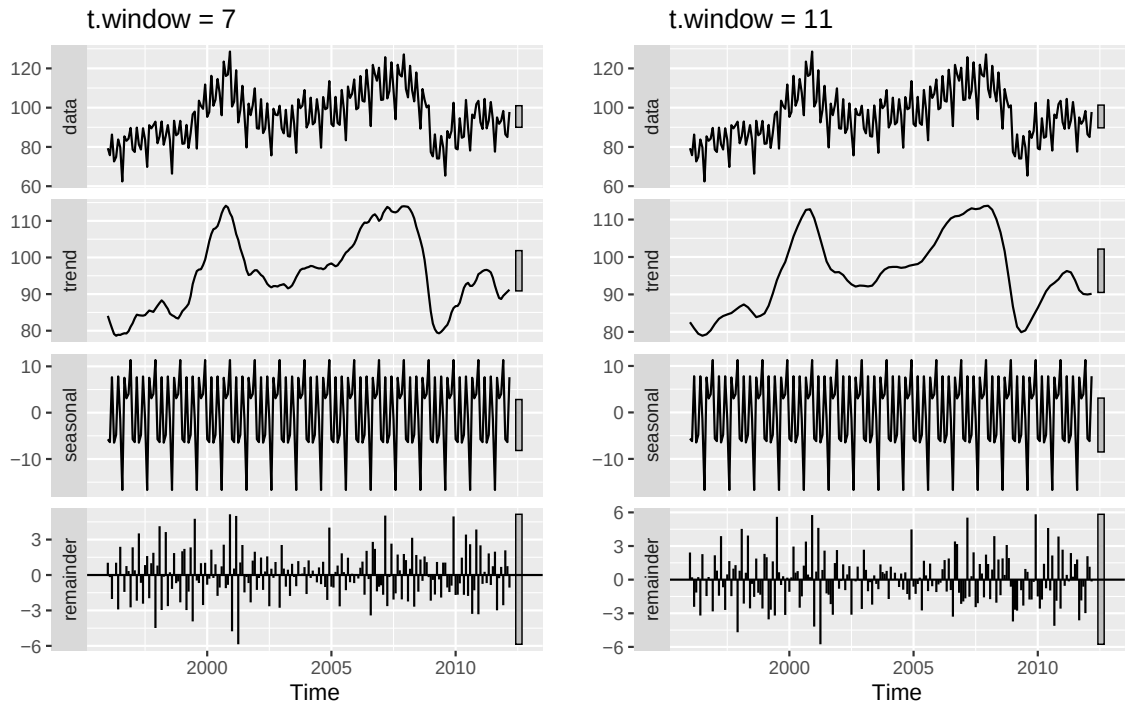

Figure 6: `elecequip` STL : `t.window`

1. `depart.txt` .

- .
- STL , .

2. `Ktour.txt` .

- .
- STL , .

3. `Won_USD.csv` 2000 1 2023 3 . `https://raw.githubusercontent.com/yjy` .

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- STL , .

4. `Credit_card.csv` 2003 1 2022 12 . `https://raw.githubusercontent.com/yjyj`
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