## 2.7 Lag plots

Figure 2.13 displays scatterplots of quarterly Australian beer production, where the horizontal axis shows lagged values of the time series. Each graph shows $y_t$ plotted against $y_{t-k}$ for different values of $k$.

```
beer2 <- window(ausbeer, start=1992)
gglagplot(beer2)
```

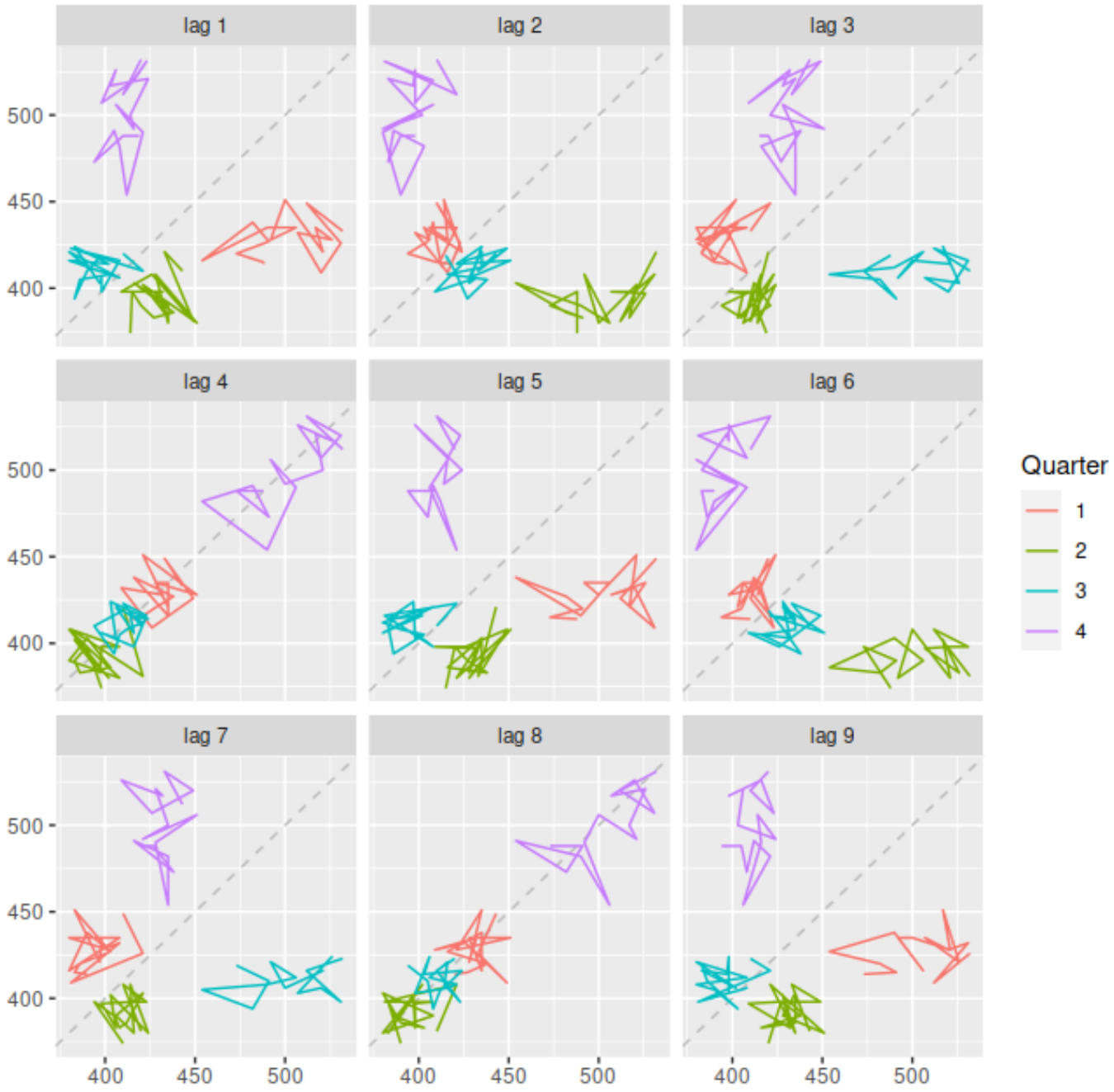


Figure 2.13: Lagged scatterplots for quarterly beer production.

Here the colours indicate the quarter of the variable on the vertical axis. The lines connect points in chronological order. The relationship is strongly positive at lags 4 and 8, reflecting the strong seasonality in the data. The negative relationship seen for lags 2 and 6 occurs because peaks (in Q4) are plotted against troughs (in Q2)

The `window()` function used here is very useful when extracting a portion of a time series. In this case, we have extracted the data from `ausbeer`, beginning in 1992.