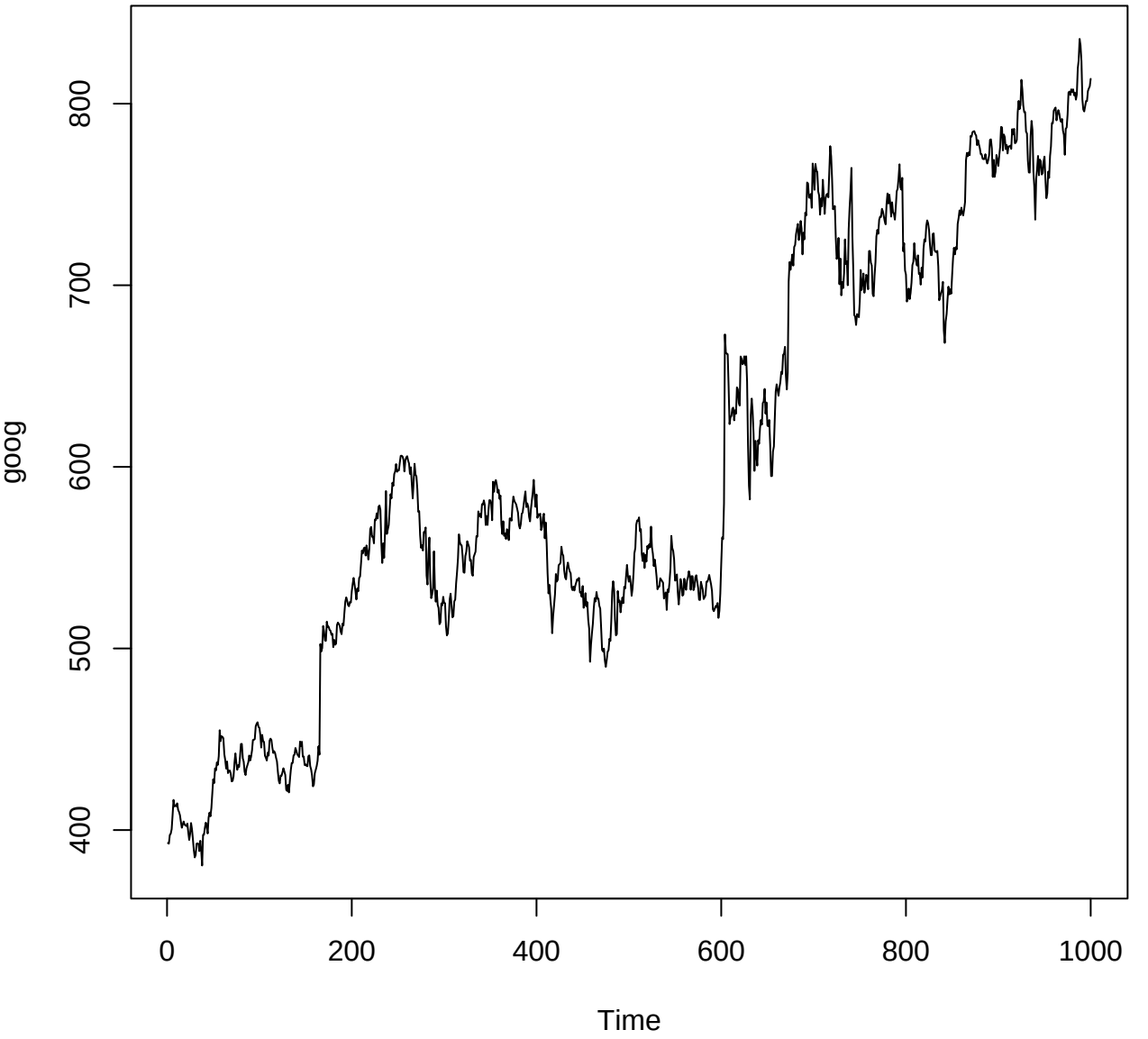
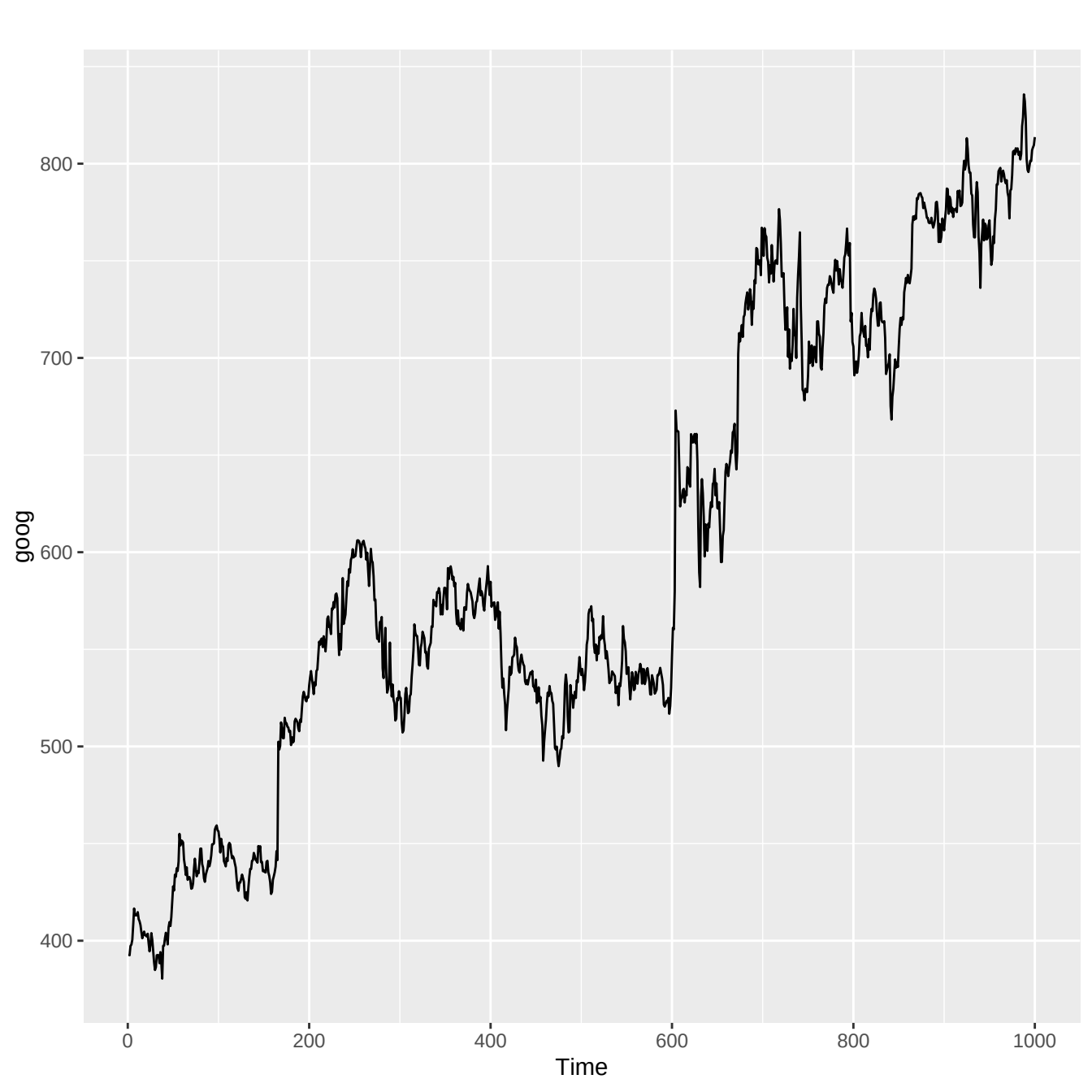
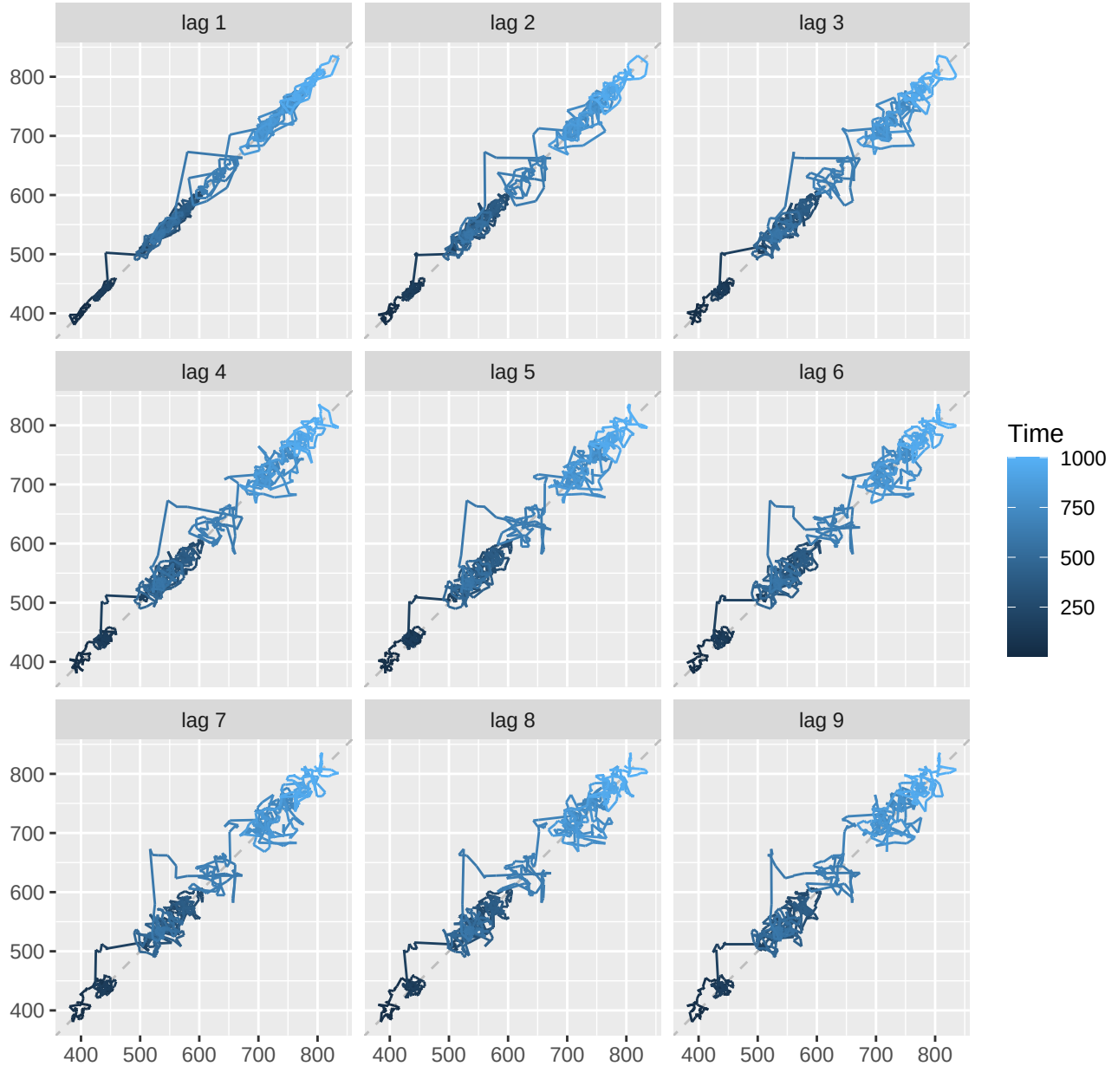
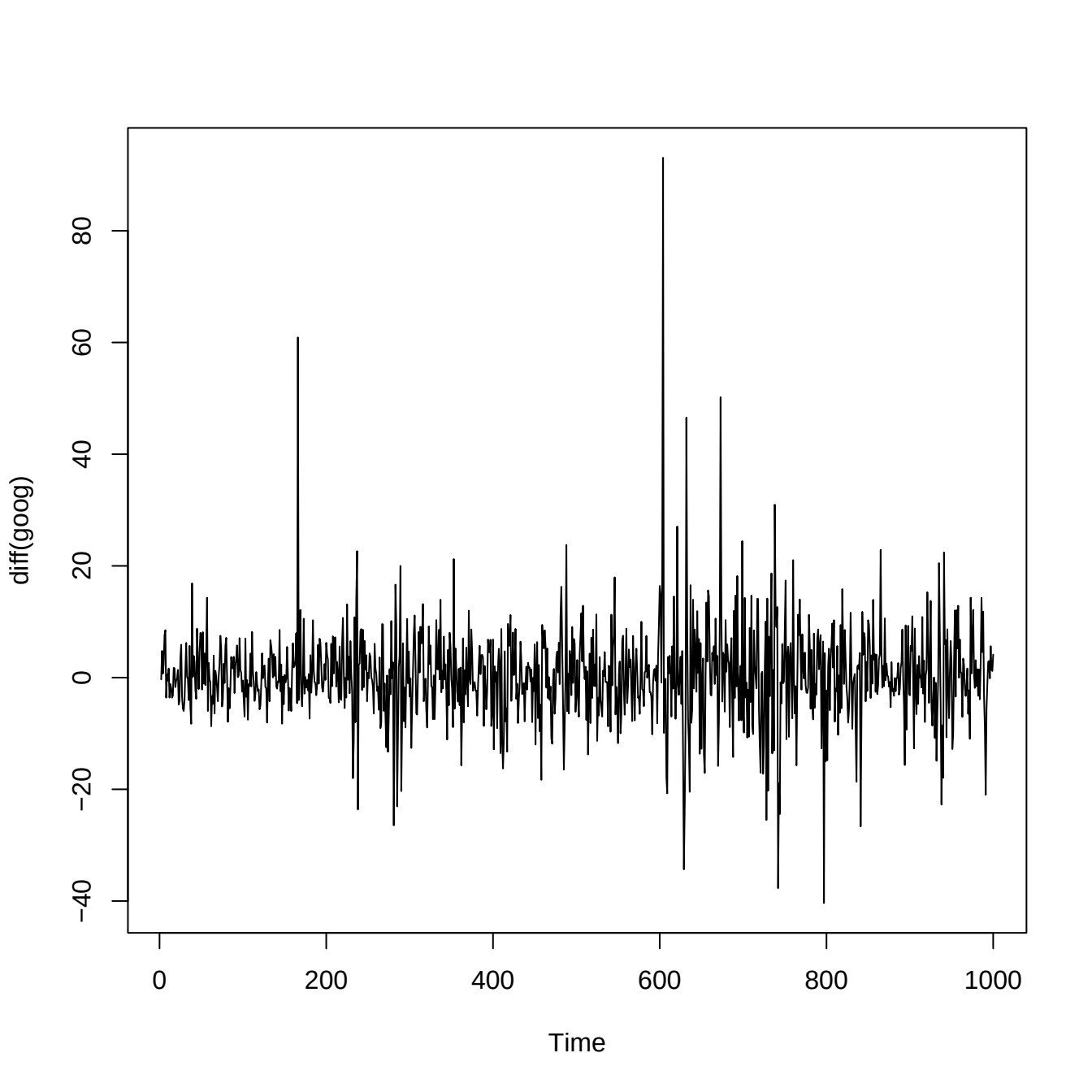
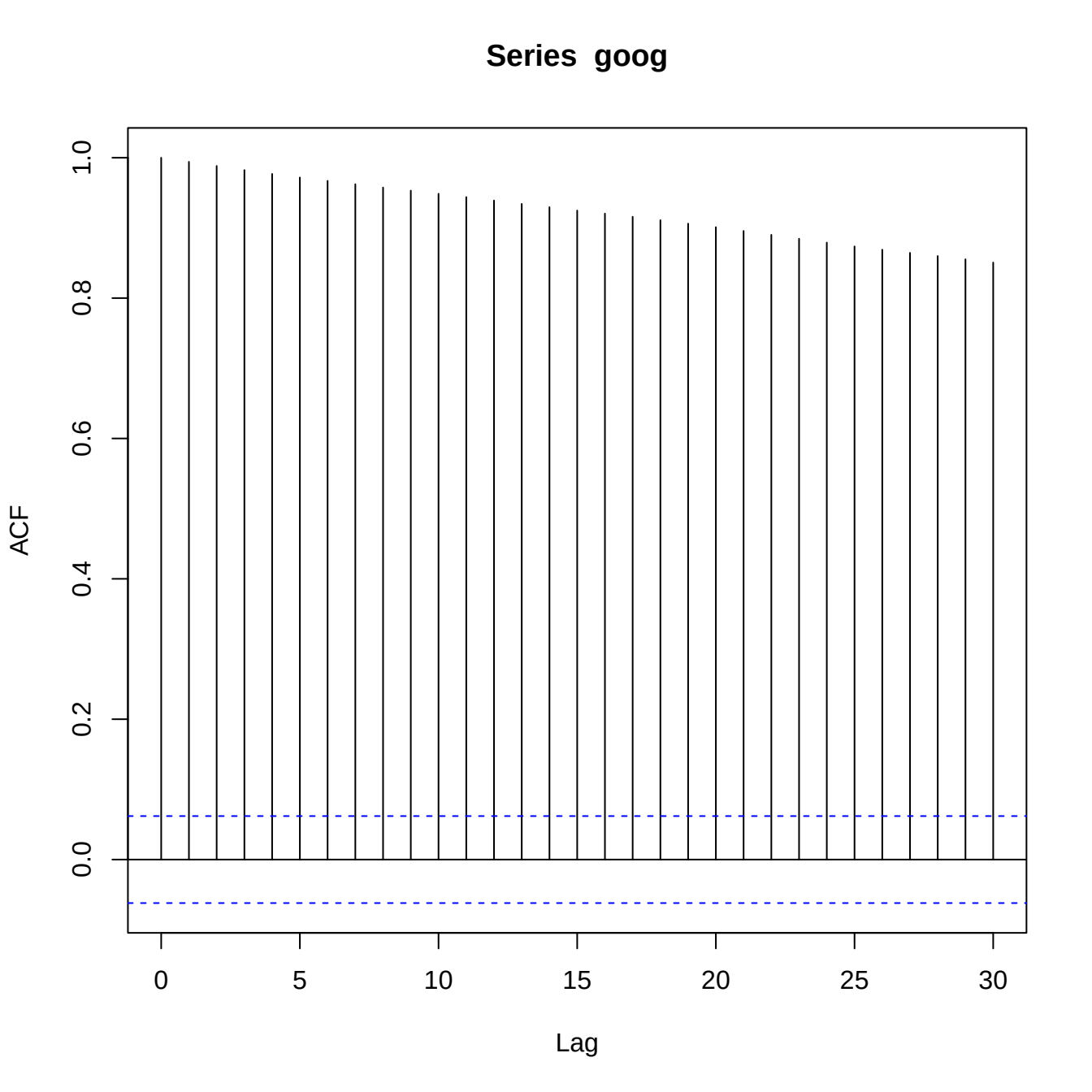
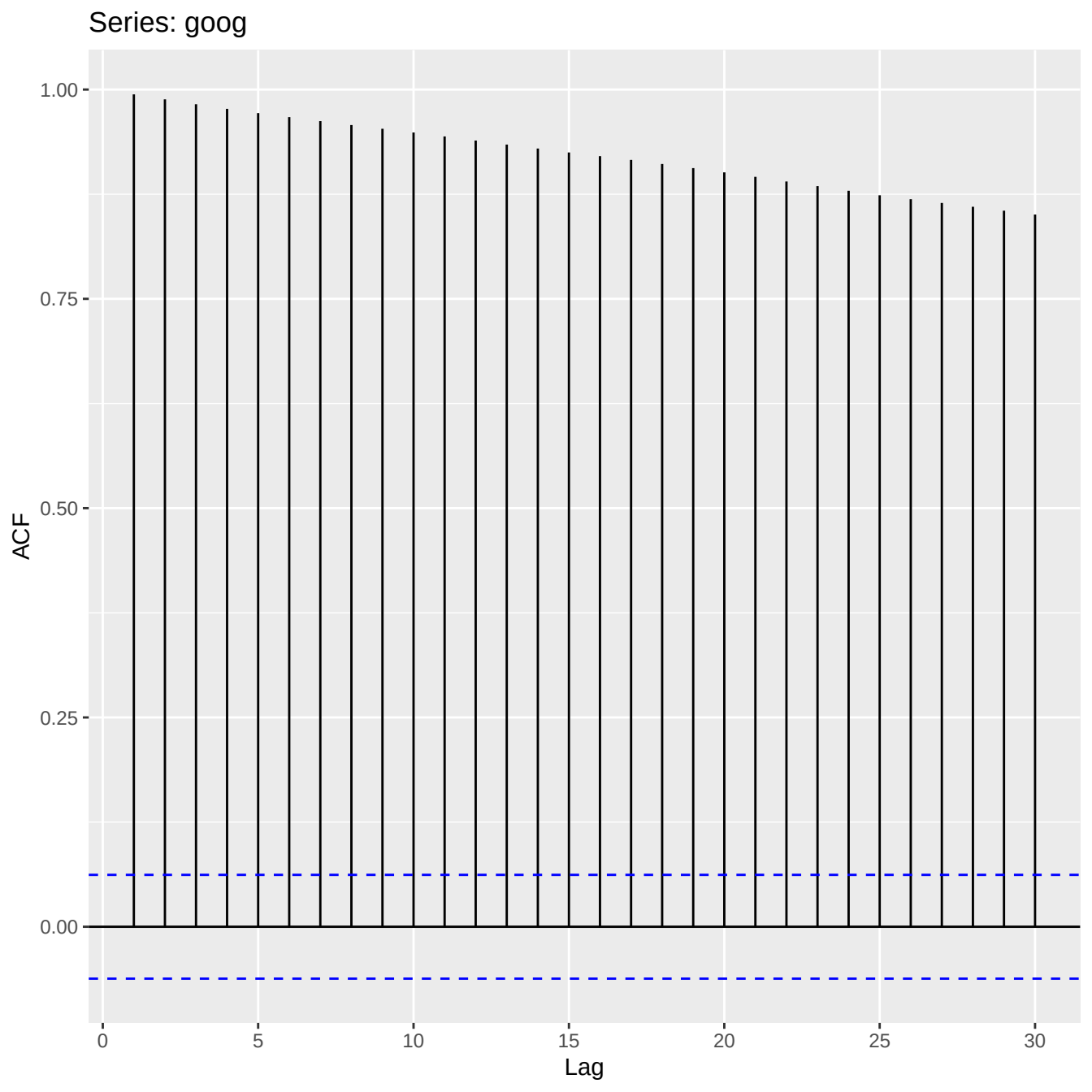

goog
400
500
600
700
800
0
200
400
600
800
1000
Time

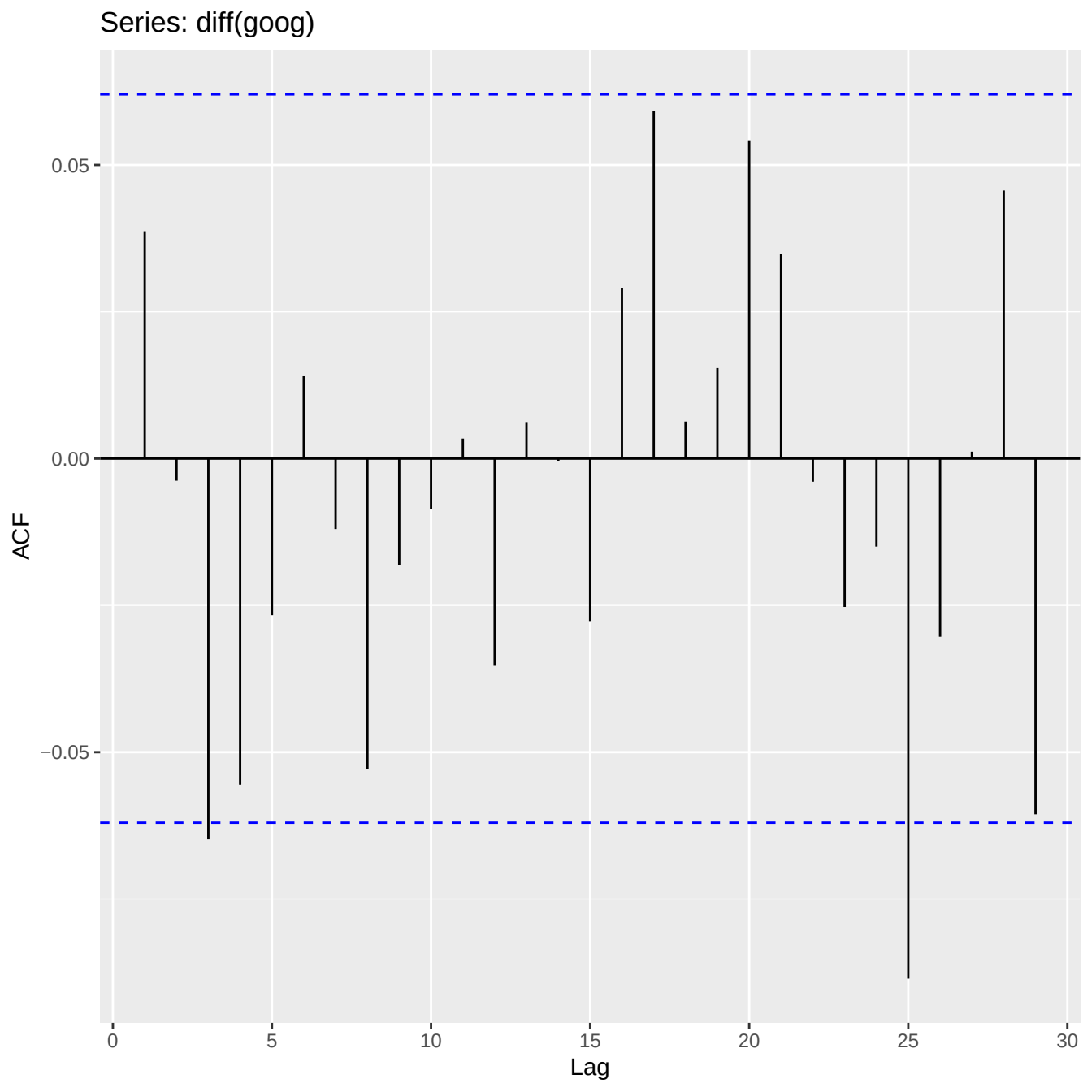

800
700
600
500
400
goog
0
200
400
600
800
1000
Time

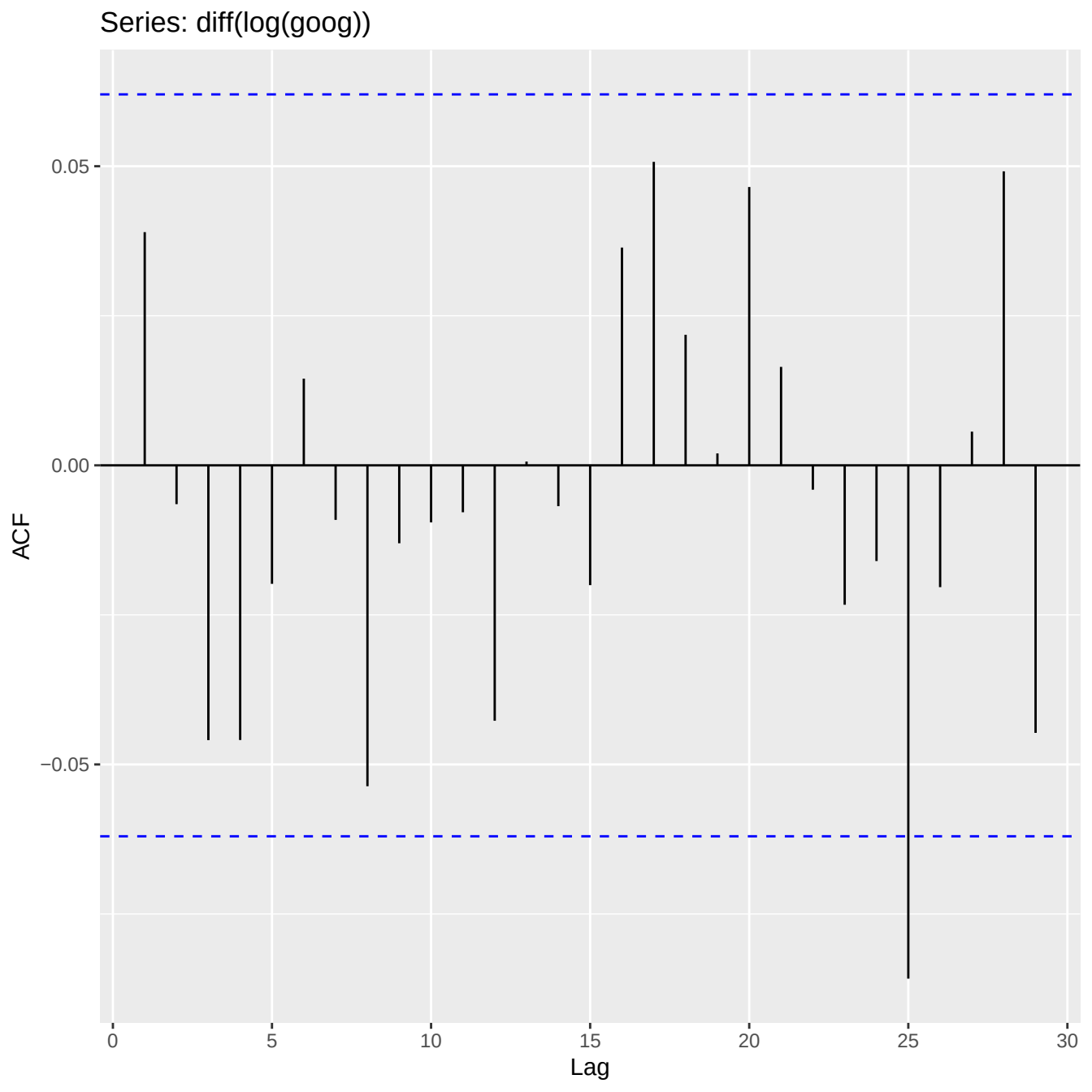

lag 1
lag 2
lag 3
lag 4
lag 5
lag 6
lag 7
lag 8
lag 9
800
700
600
500
400
400
500
600
700
800
Time
1000
750
500
250

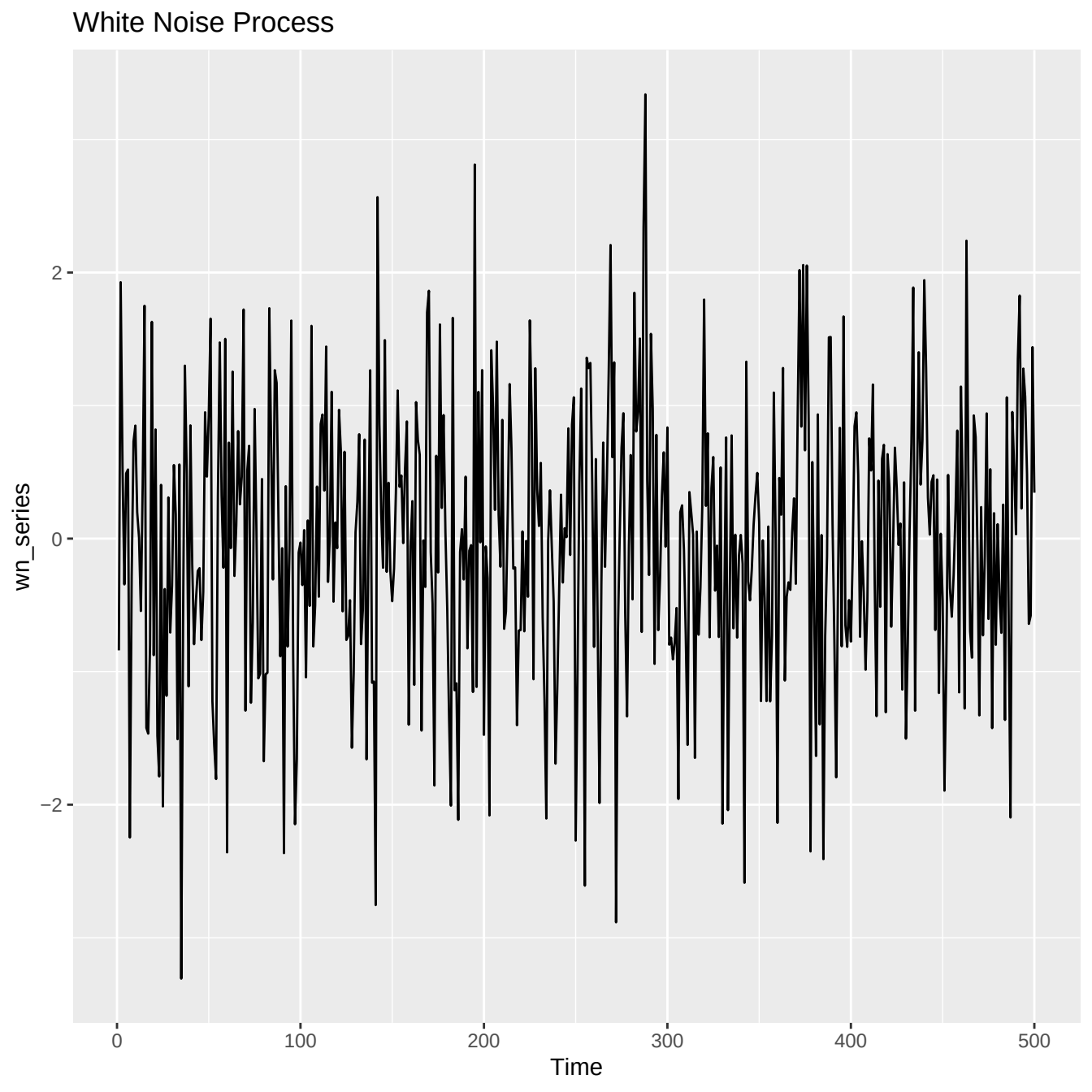

diff(goog)
80
60
40
20
0
−20
−40
0
200
400
600
800
1000
Time

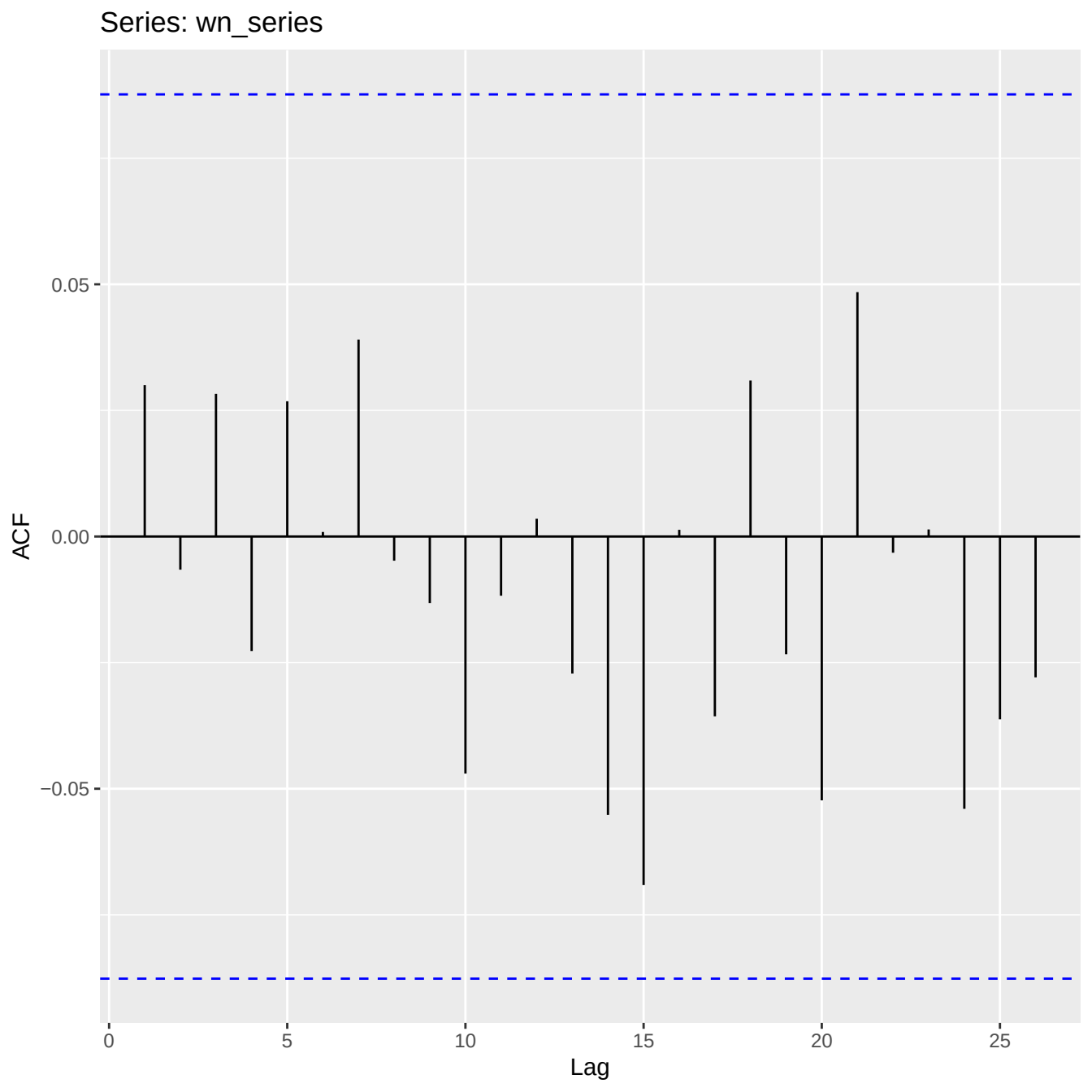

Series goog
ACF
1.0
0.8
0.6
0.4
0.2
0.0
0
5
10
15
20
25
30
Lag

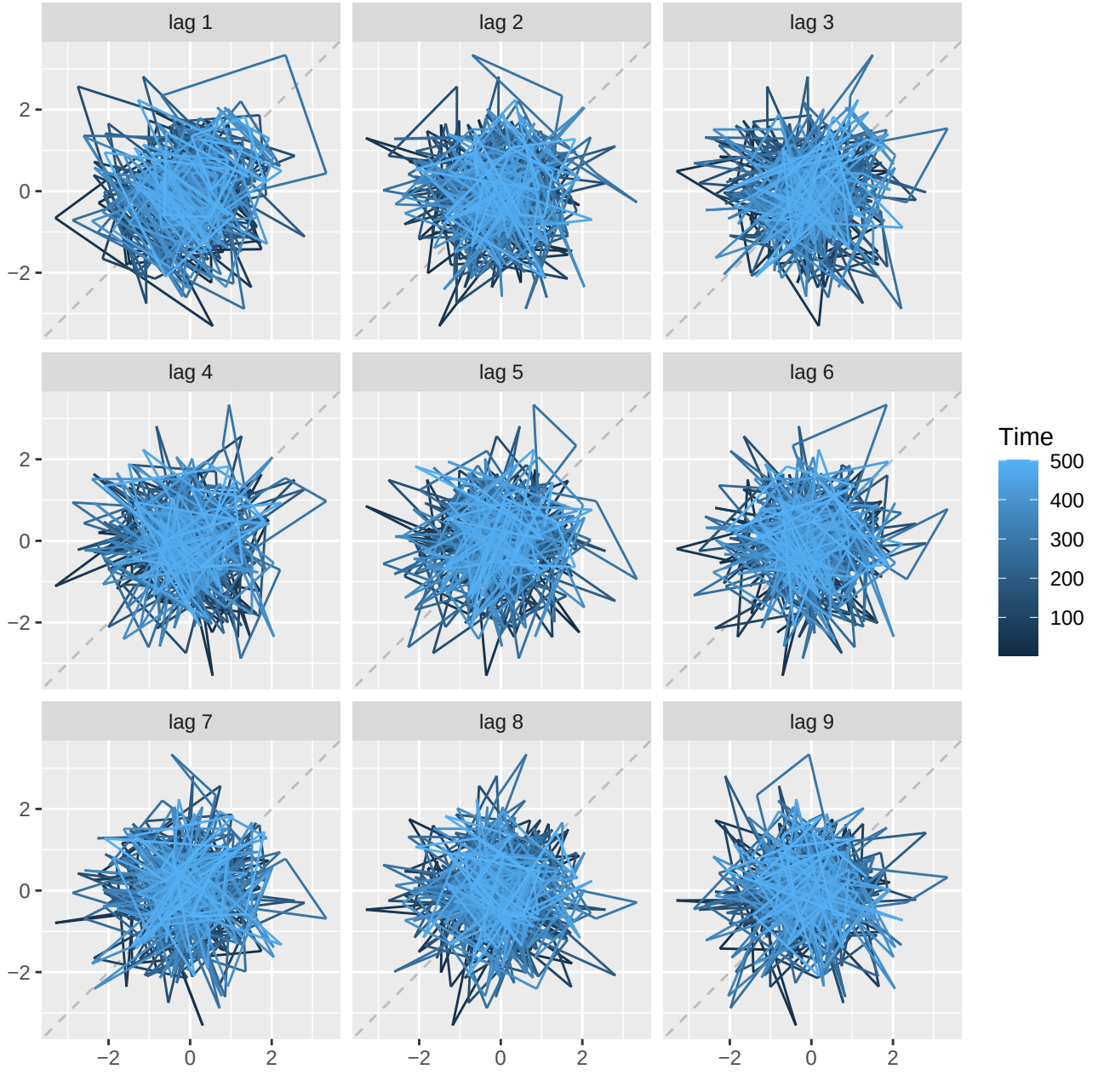

Series: goog
ACF
1.00
0.75
0.50
0.25
0.00
0
5
10
15
20
25
30
Lag

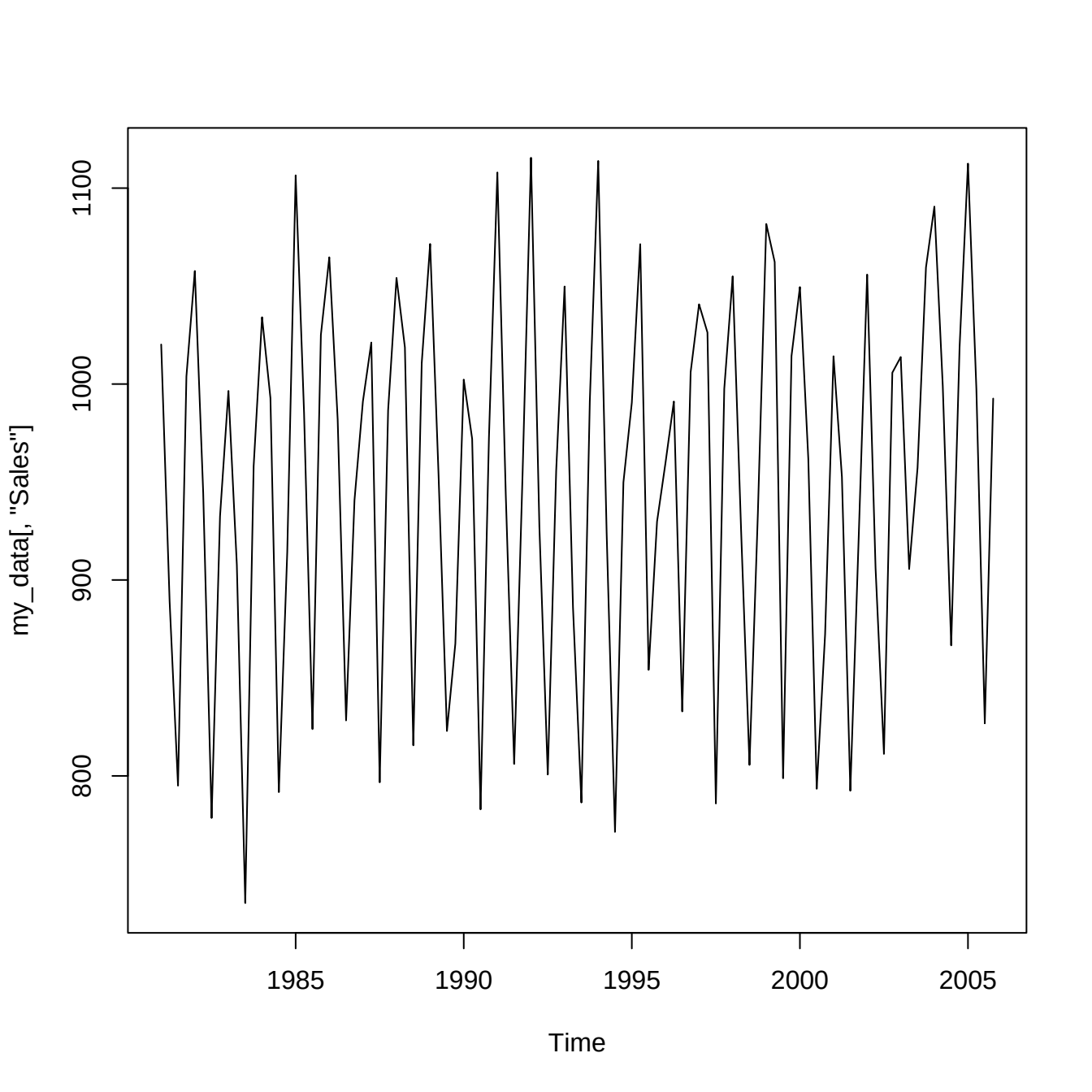

Series: diff(goog)
0.05
0.00
−0.05
ACF
0
5
10
15
20
25
30
Lag

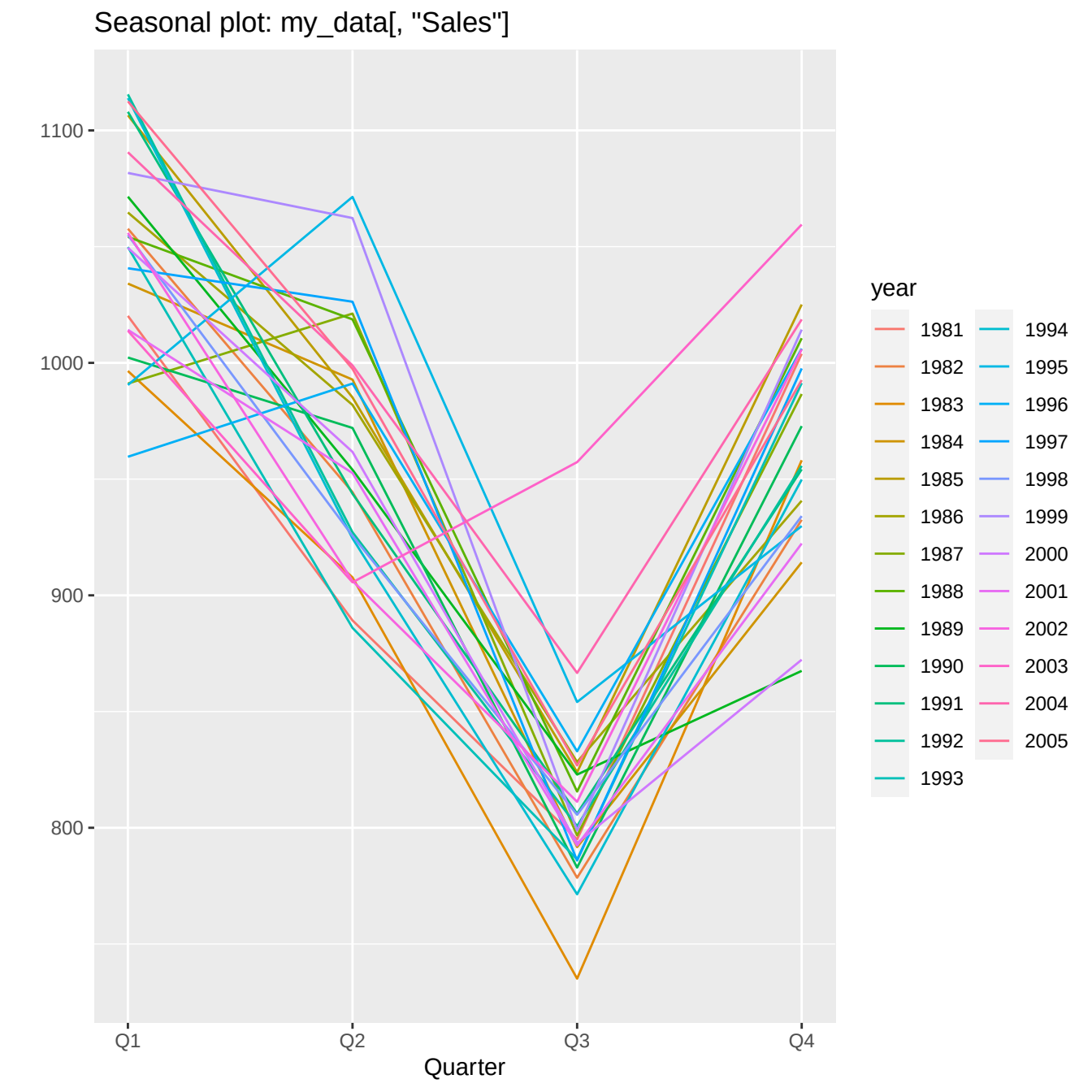

Series: diff(log(goog))
0.05
0.00
−0.05
ACF
0
5
10
15
20
25
30
Lag

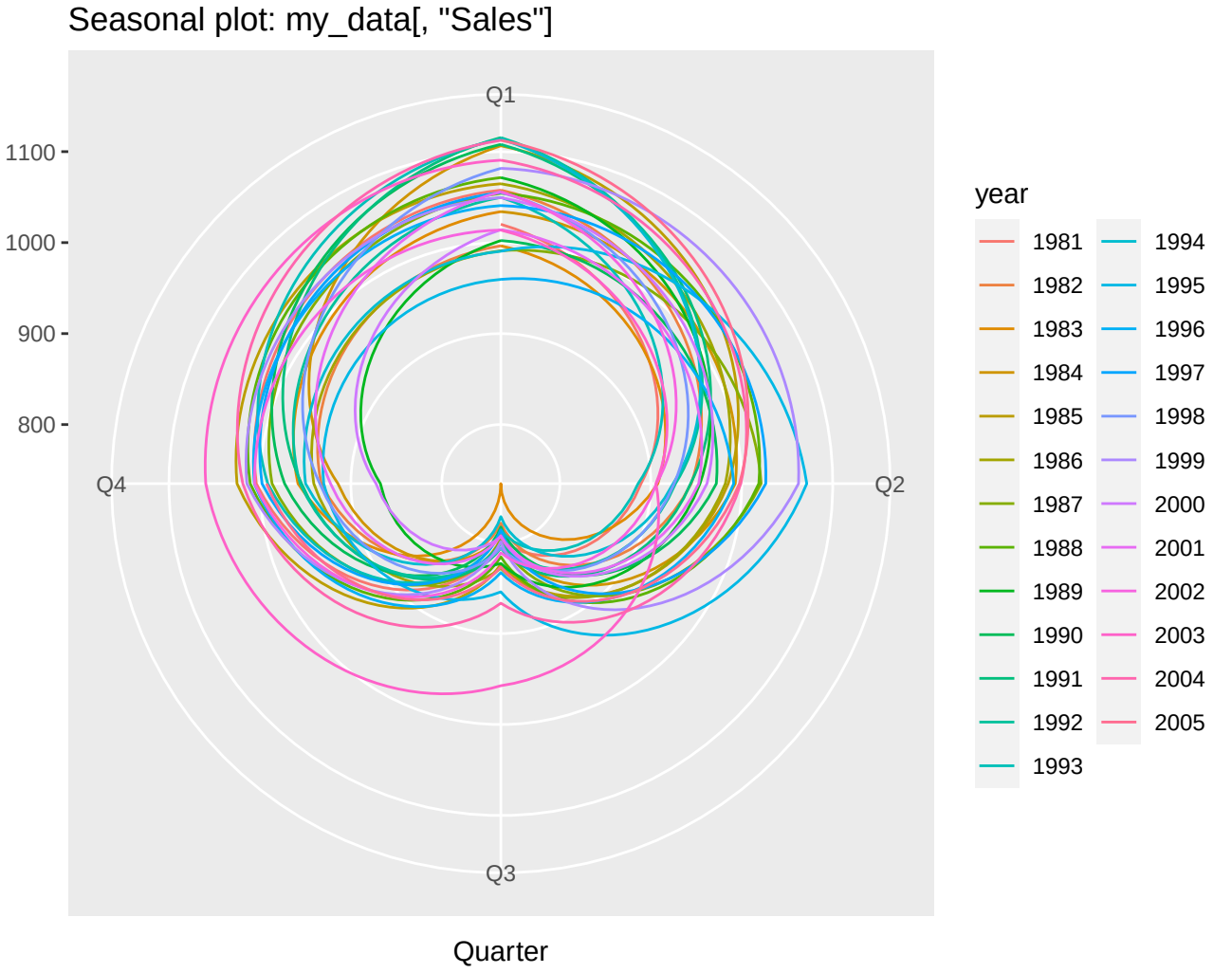

White Noise Process
wn_series
2
0
−2
0
100
200
300
400
500
Time

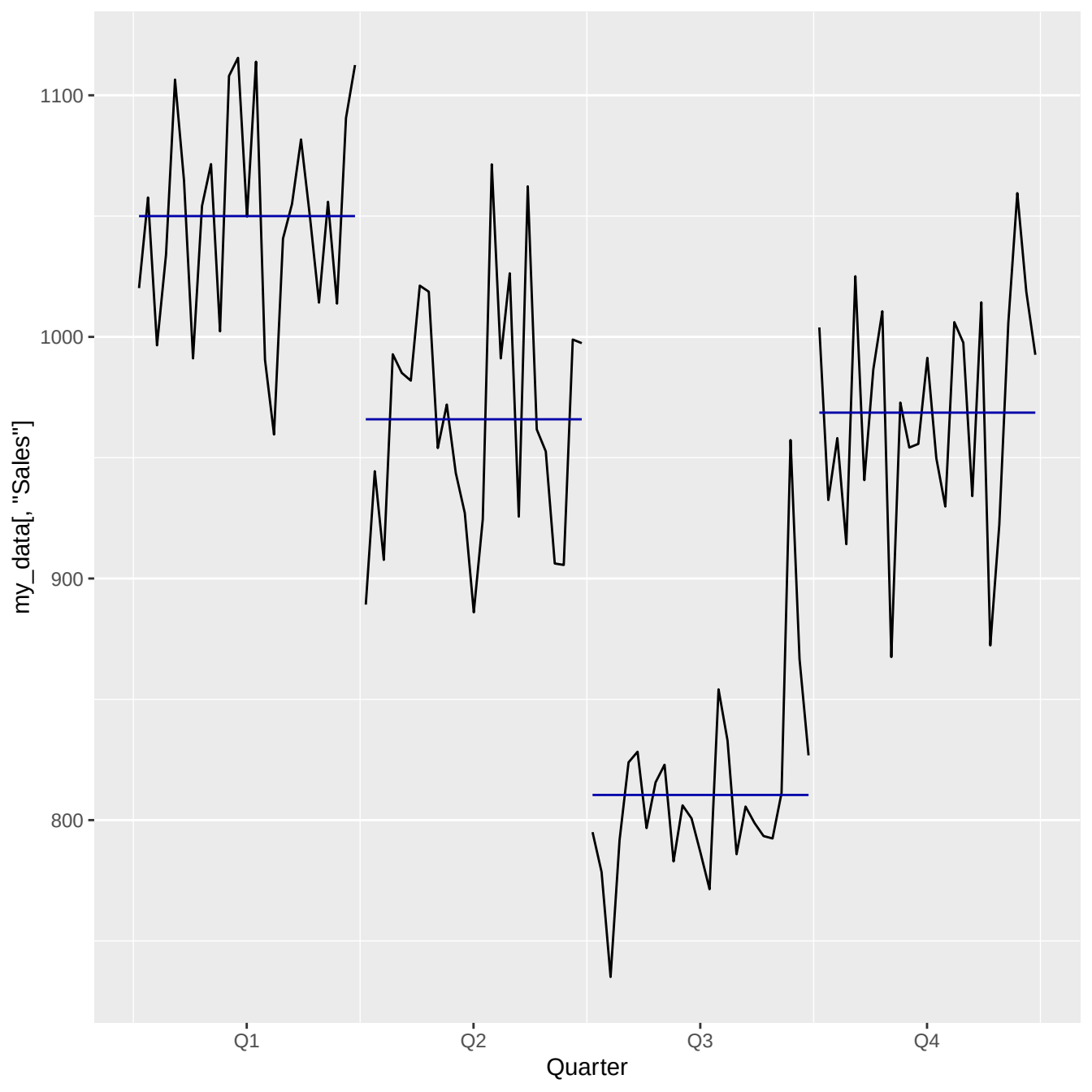

Series: wn_series
0.05
0.00
−0.05
ACF
0
5
10
15
20
25
Lag

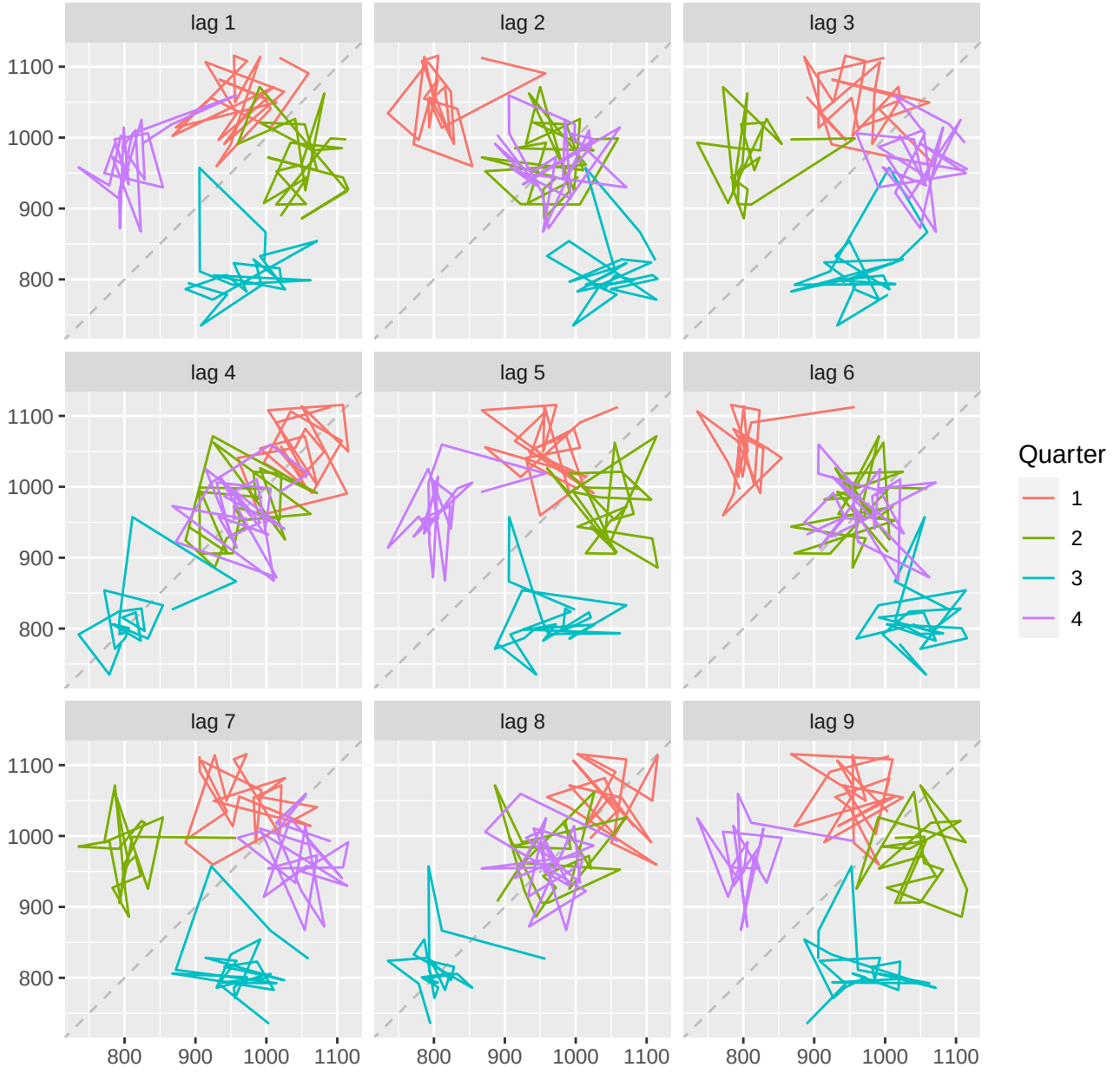

lag 1
lag 2
lag 3
lag 4
lag 5
lag 6
lag 7
lag 8
lag 9
2
0
−2
Time
500
400
300
200
100

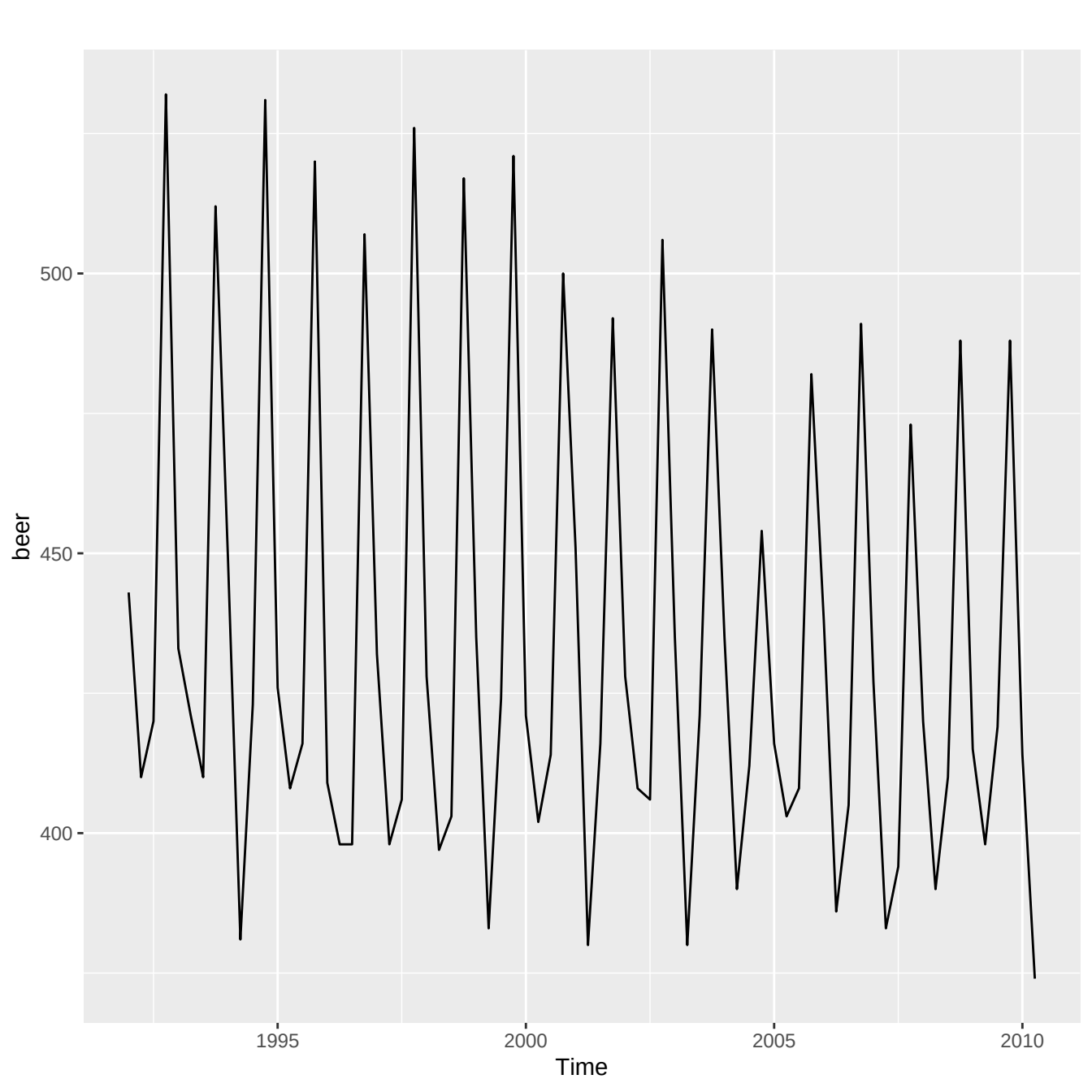

my_data[, "Sales"]
800
900
1000
1100
1985
1990
1995
2000
2005
Time

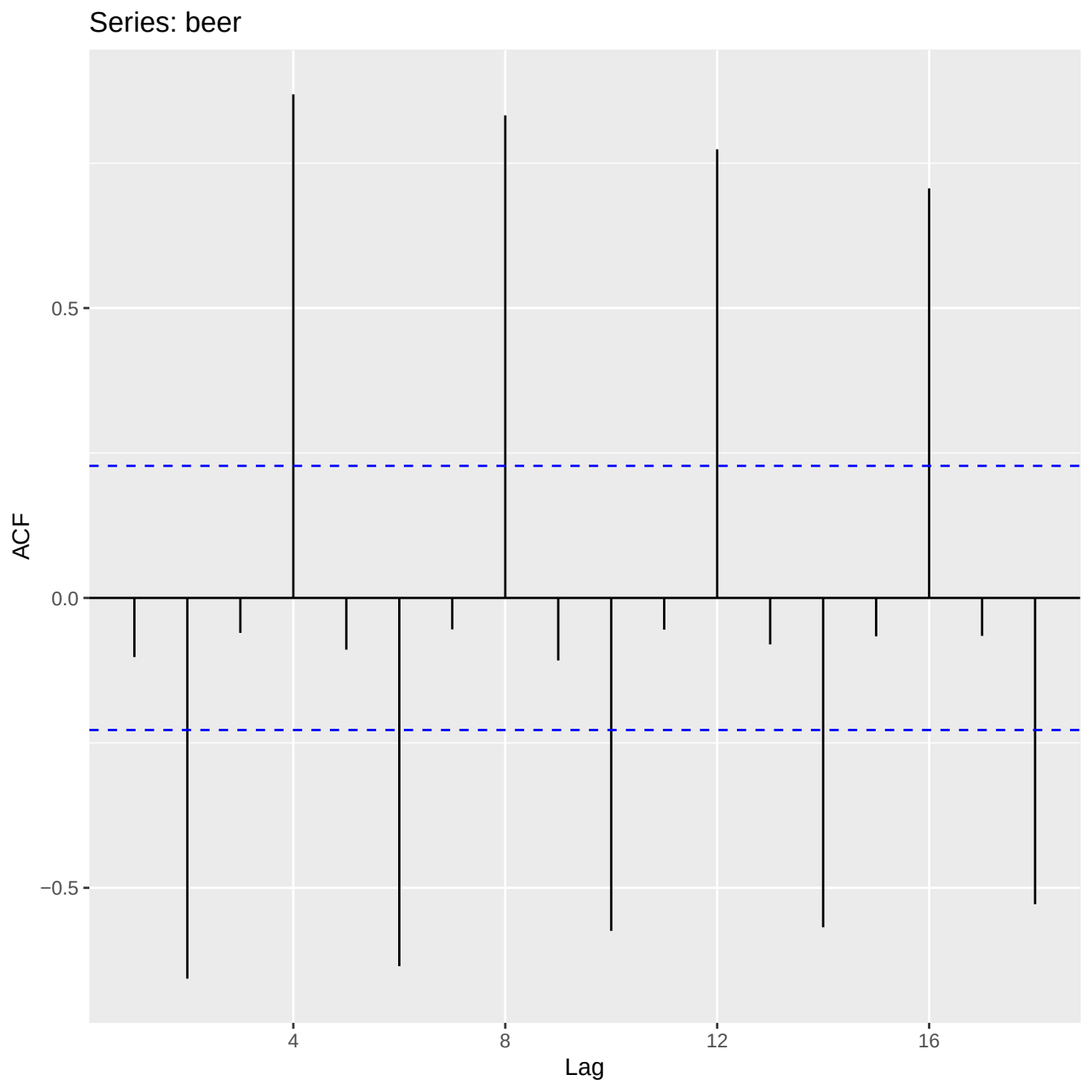

Seasonal plot: my_data[, "Sales"]
1100
1000
900
800
Q1
Q2
Q3
Q4
Quarter
year
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005

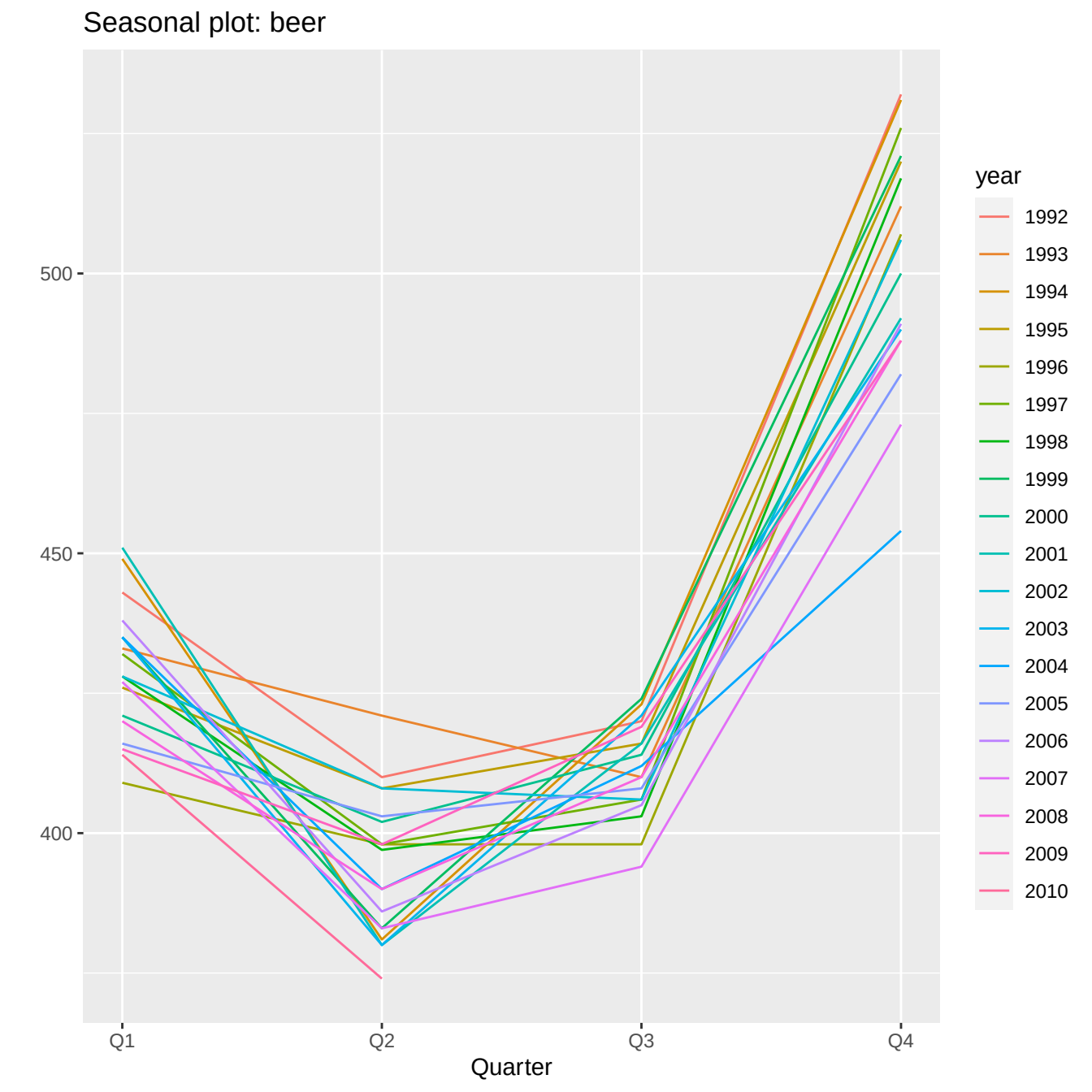

Seasonal plot: my_data[, "Sales"]
Q1
Q2
Q3
Q4
1100
1000
900
800
Quarter
year
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005

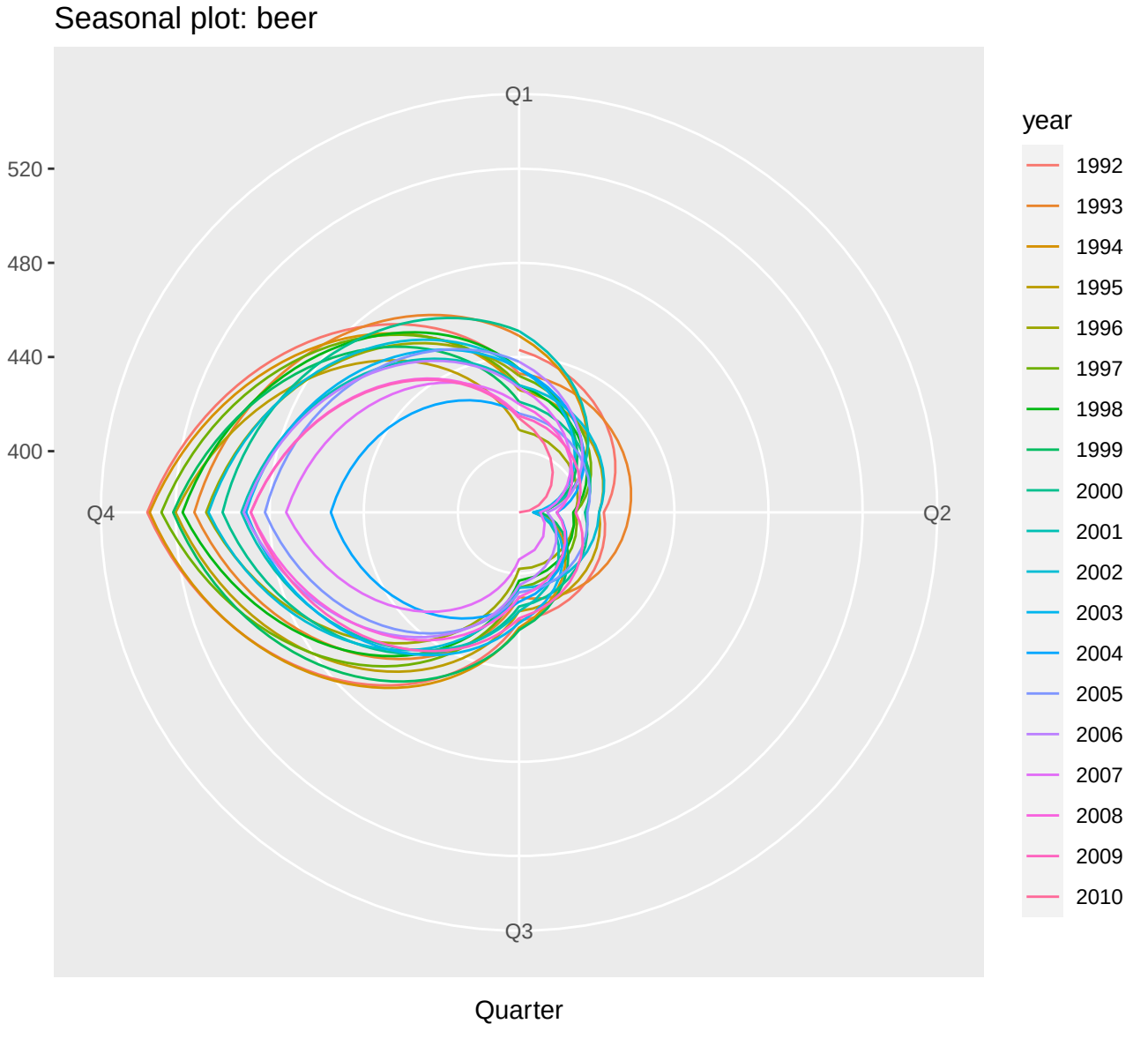

1100
1000
900
800
my_data[, "Sales"]
Q1
Q2
Q3
Q4
Quarter

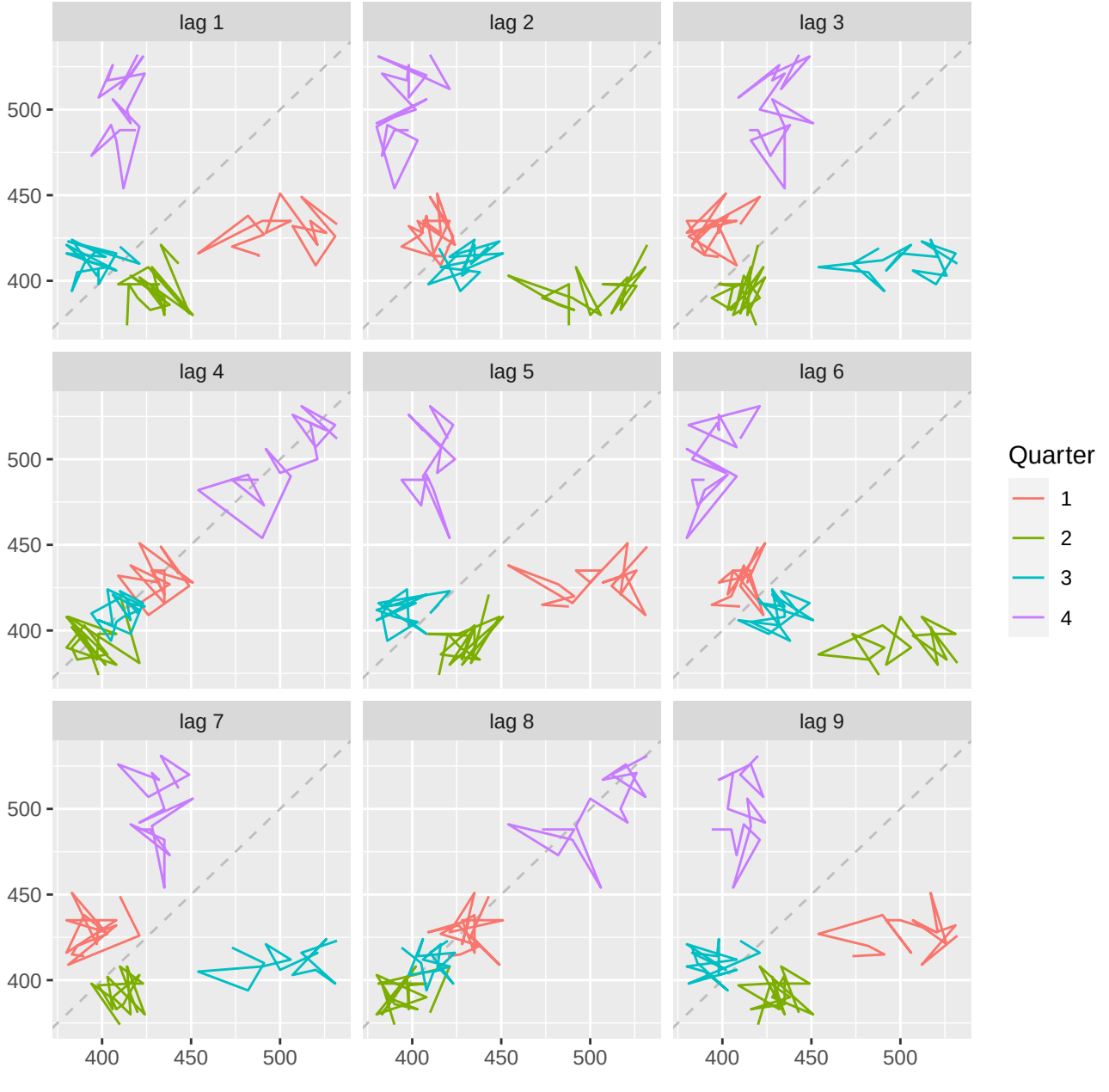

lag 1
lag 2
lag 3
lag 4
lag 5
lag 6
lag 7
lag 8
lag 9
1100
1000
900
800
800
900
1000
1100
Quarter
1
2
3
4

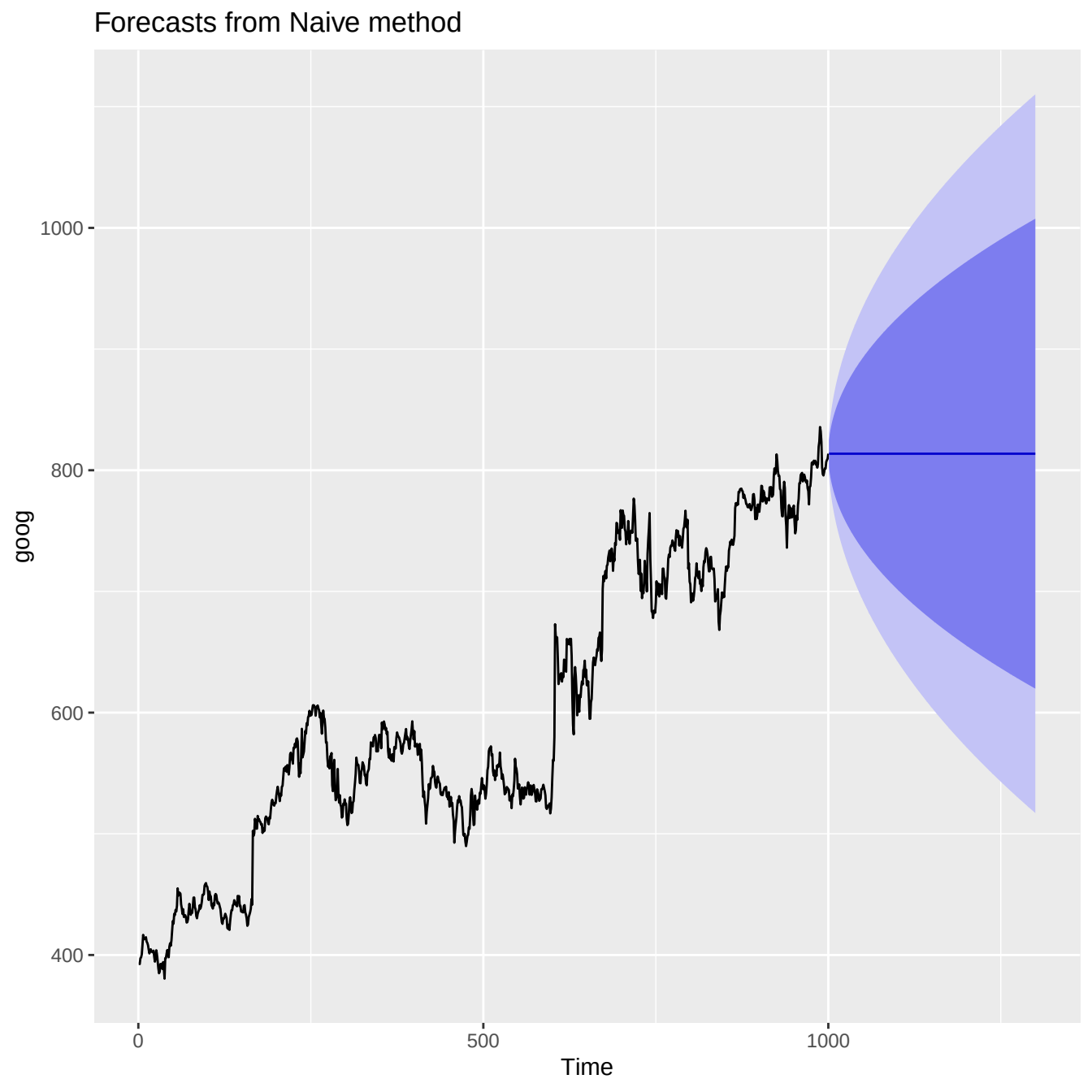

beer
500
450
400
1995
2000
2005
2010
Time


Series: beer
ACF
0.5
0.0
−0.5
4
8
12
16
Lag


Seasonal plot: beer
500
450
400
Q1
Q2
Q3
Q4
Quarter
year
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010


Seasonal plot: beer
Q1
Q2
Q3
Q4
520
480
440
400
Quarter
year
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010


lag 1
lag 2
lag 3
lag 4
lag 5
lag 6
lag 7
lag 8
lag 9
500
450
400
400
450
500
Quarter
1
2
3
4


Forecasts from Naive method
1000
800
600
400
goog
0
500
1000
Time