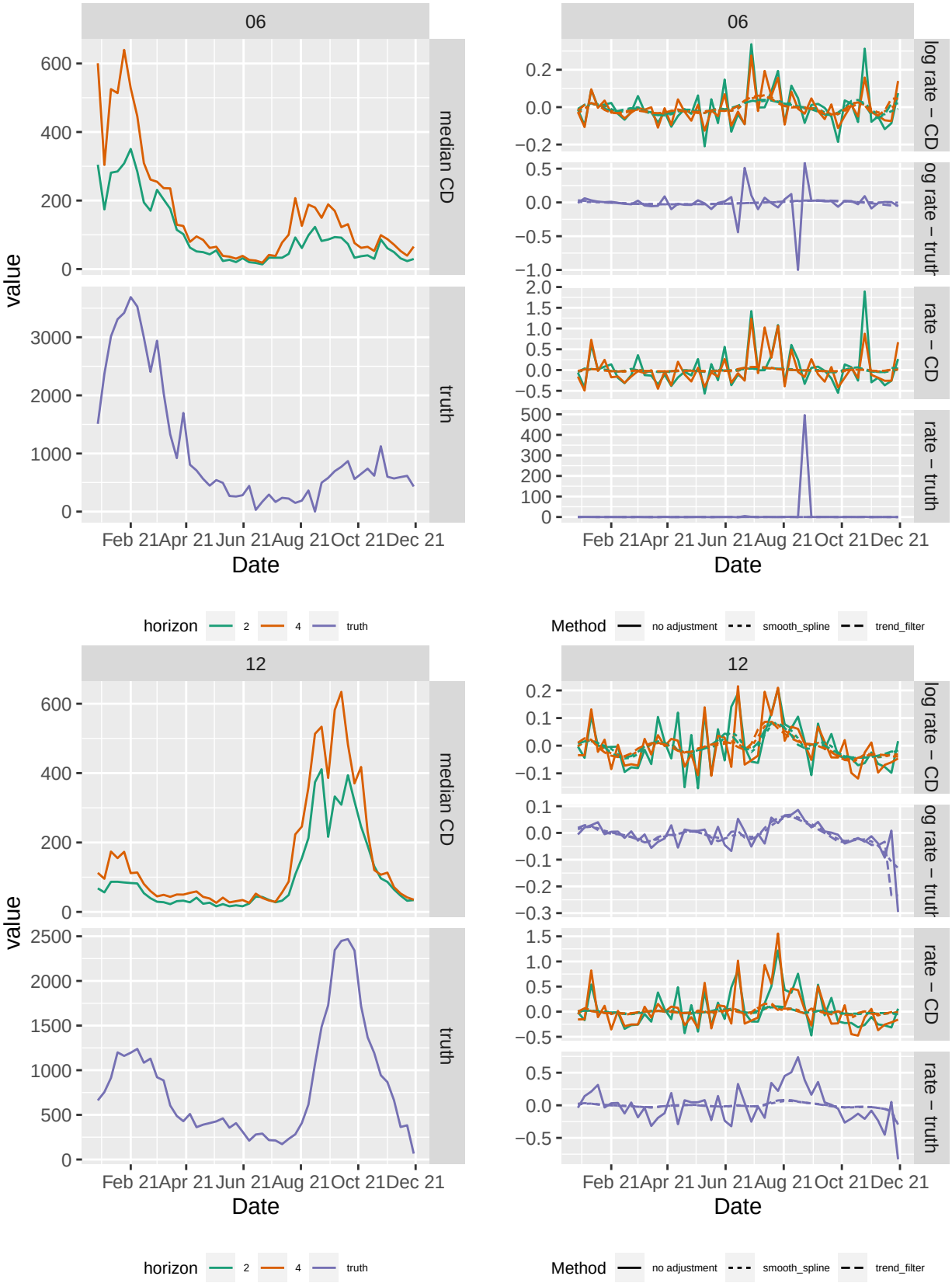
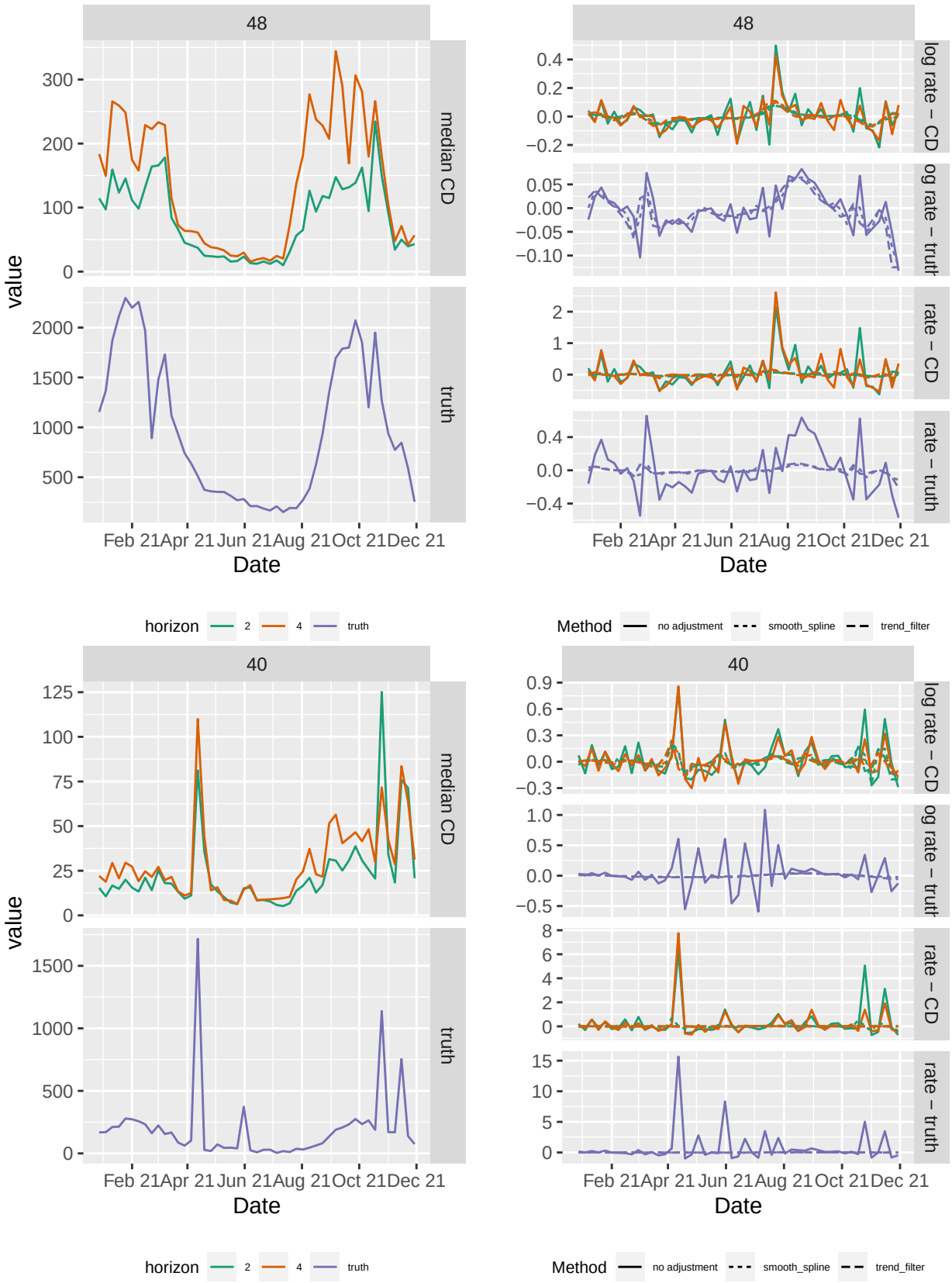
Distance as a signal

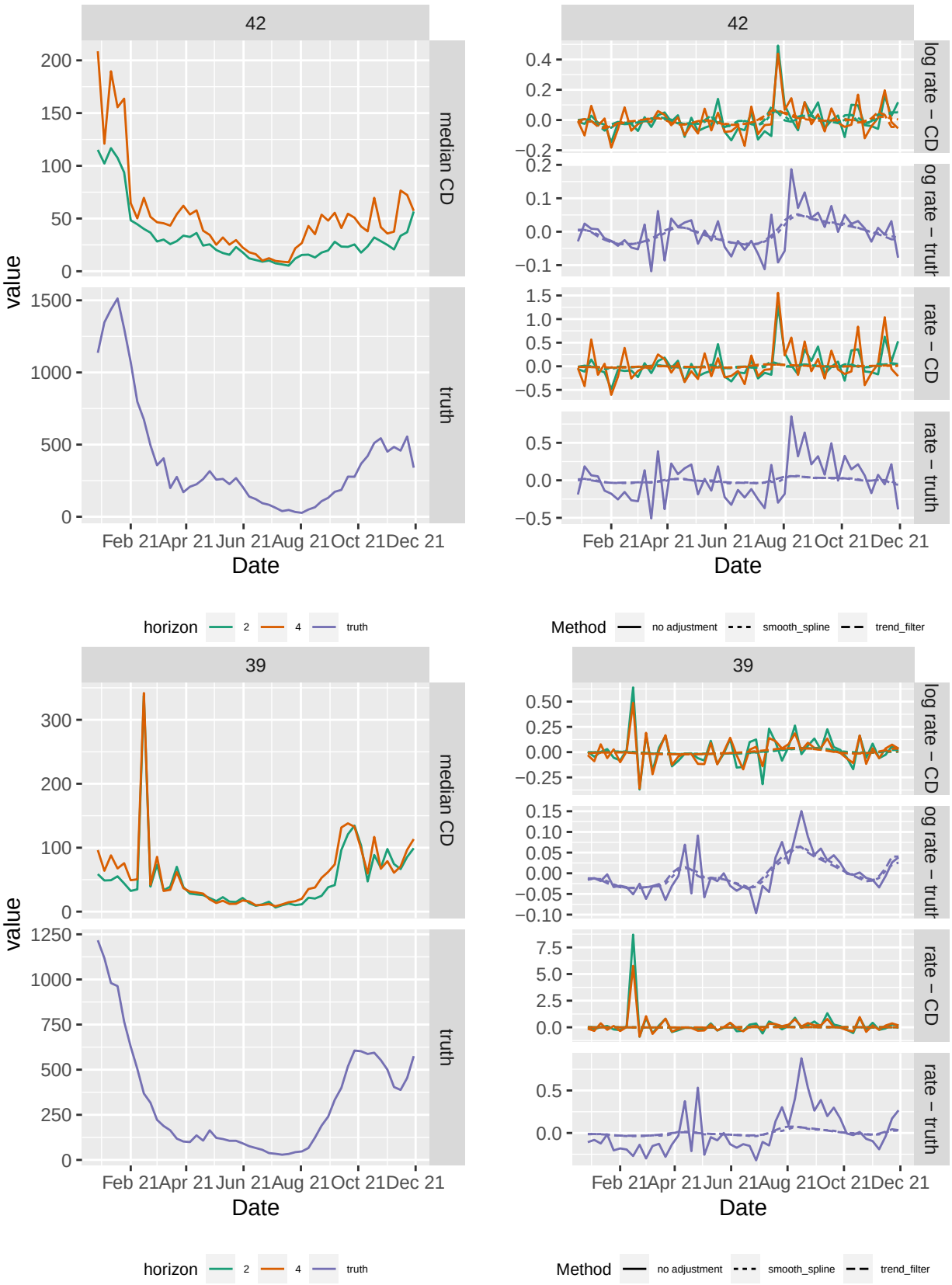
Nutcha Wattanachit, Johannes Bracher, Evan Ray, Nick Reich

05/13/2022

Plots - with no adjustment included (no preposcessing of rate)




48
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
no adjustment
smooth_spline
trend_filter
40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Feb 21
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Aug 21
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Dec 21
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horizon
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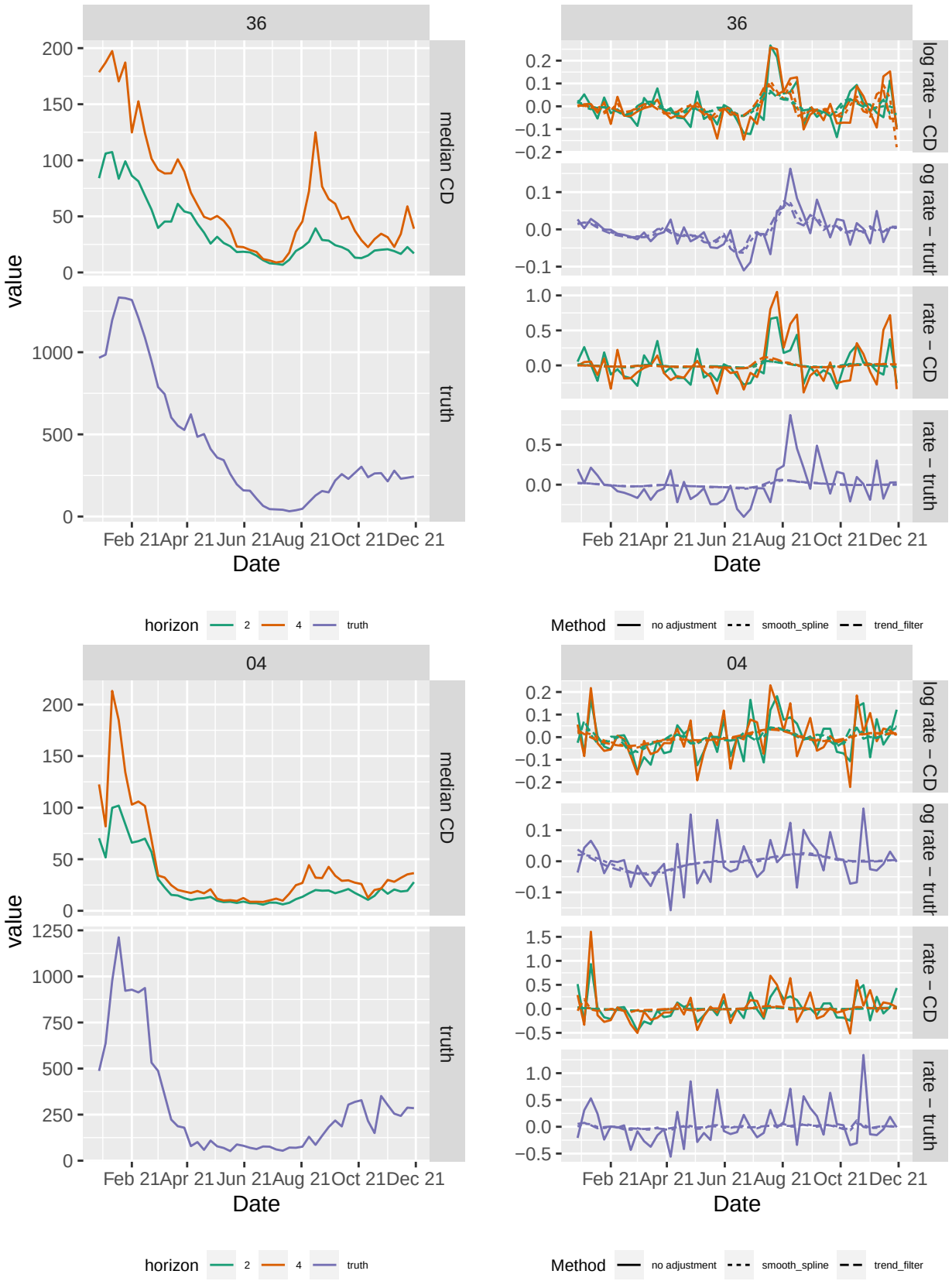
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
no adjustment
smooth_spline
trend_filter
39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Date
Feb 21
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Oct 21
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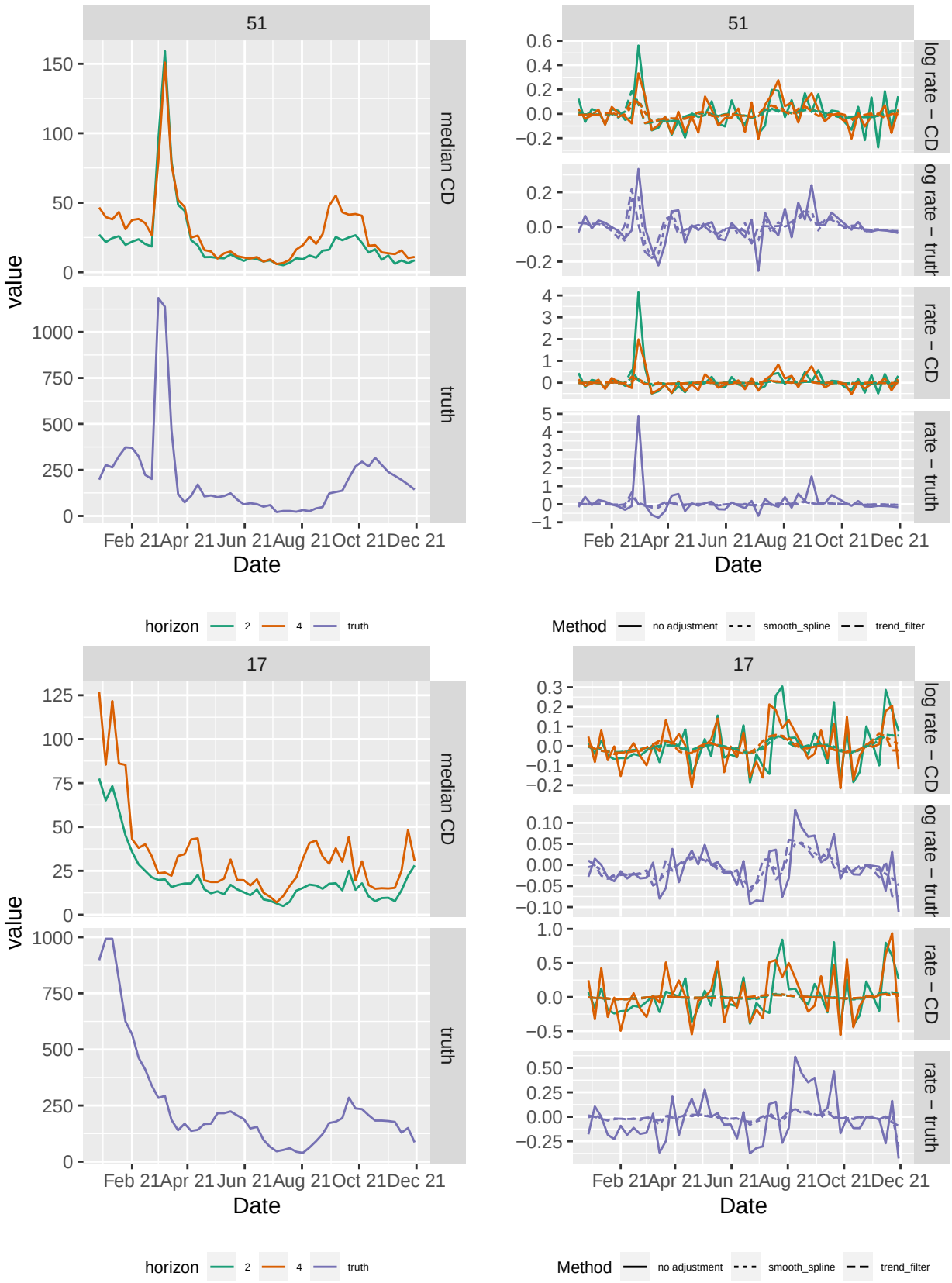
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
no adjustment
smooth_spline
trend_filter
04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median CD
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Date
Feb 21
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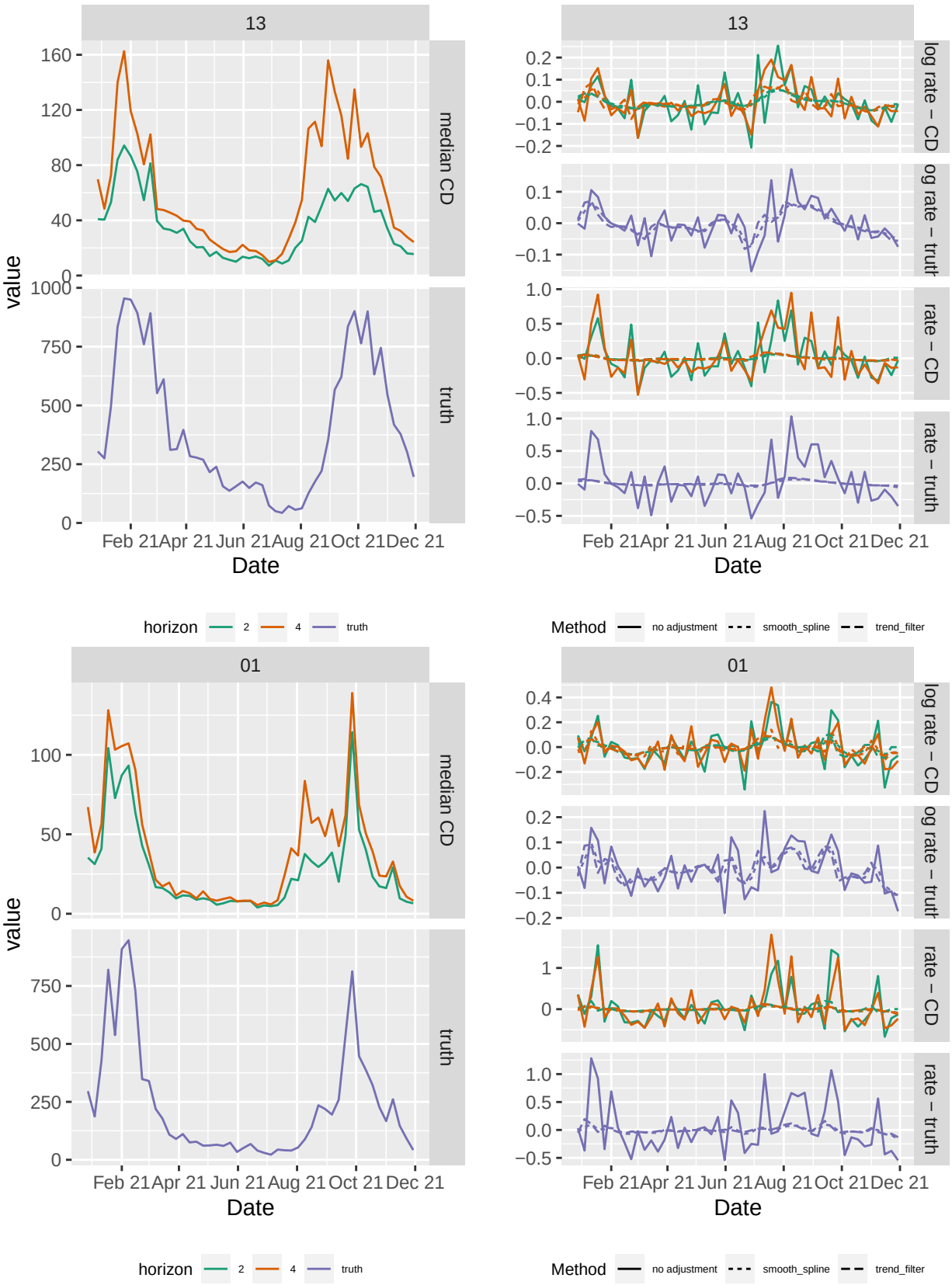
Jun 21
Aug 21
Oct 21
Dec 21
log rate – CD
og rate – truth
rate – CD
rate – truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
17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Date
Feb 21
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Jun 21
Aug 21
Oct 21
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log rate − CD
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rate − CD
rate − truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
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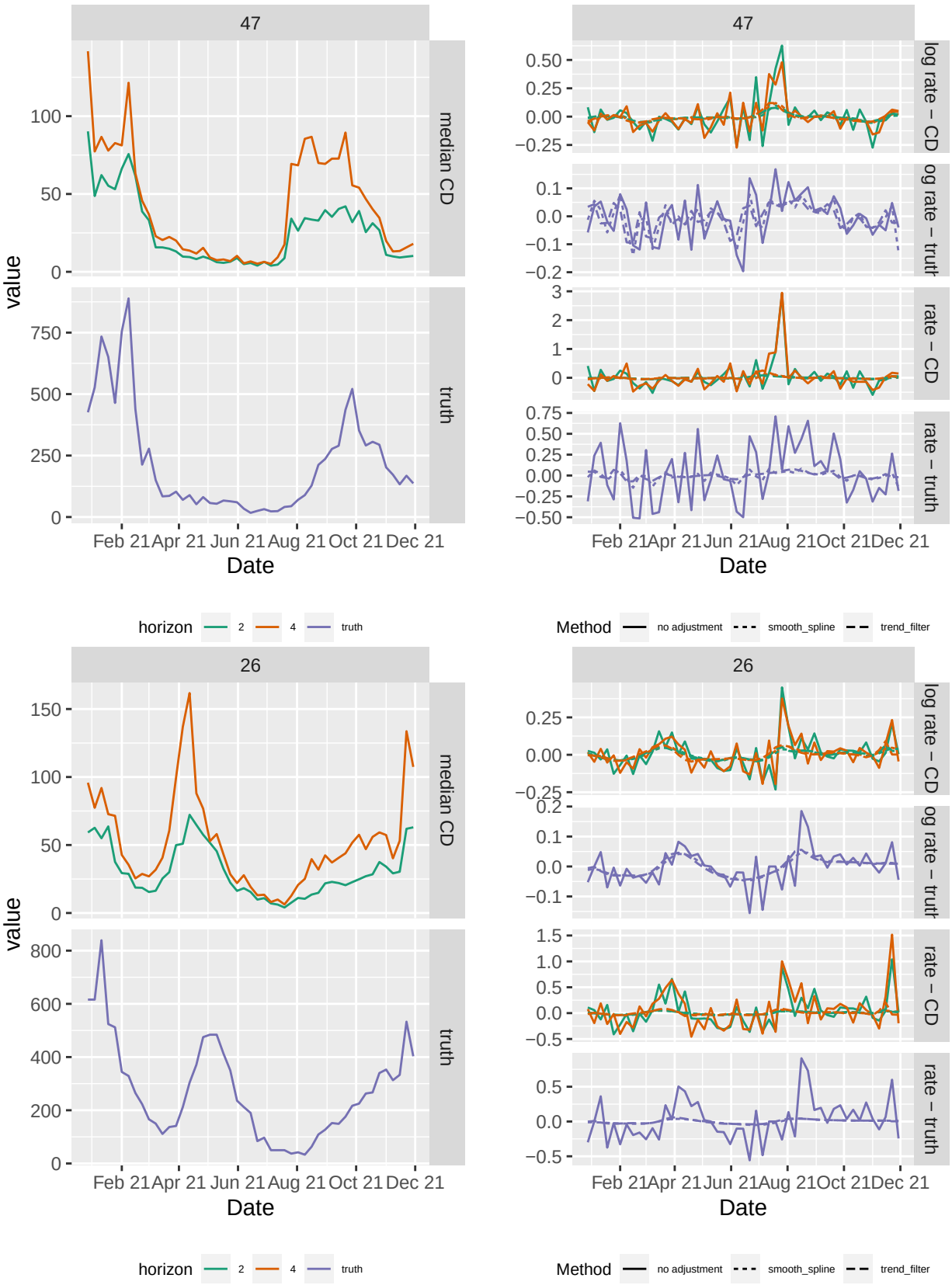
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median CD
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Dec 21
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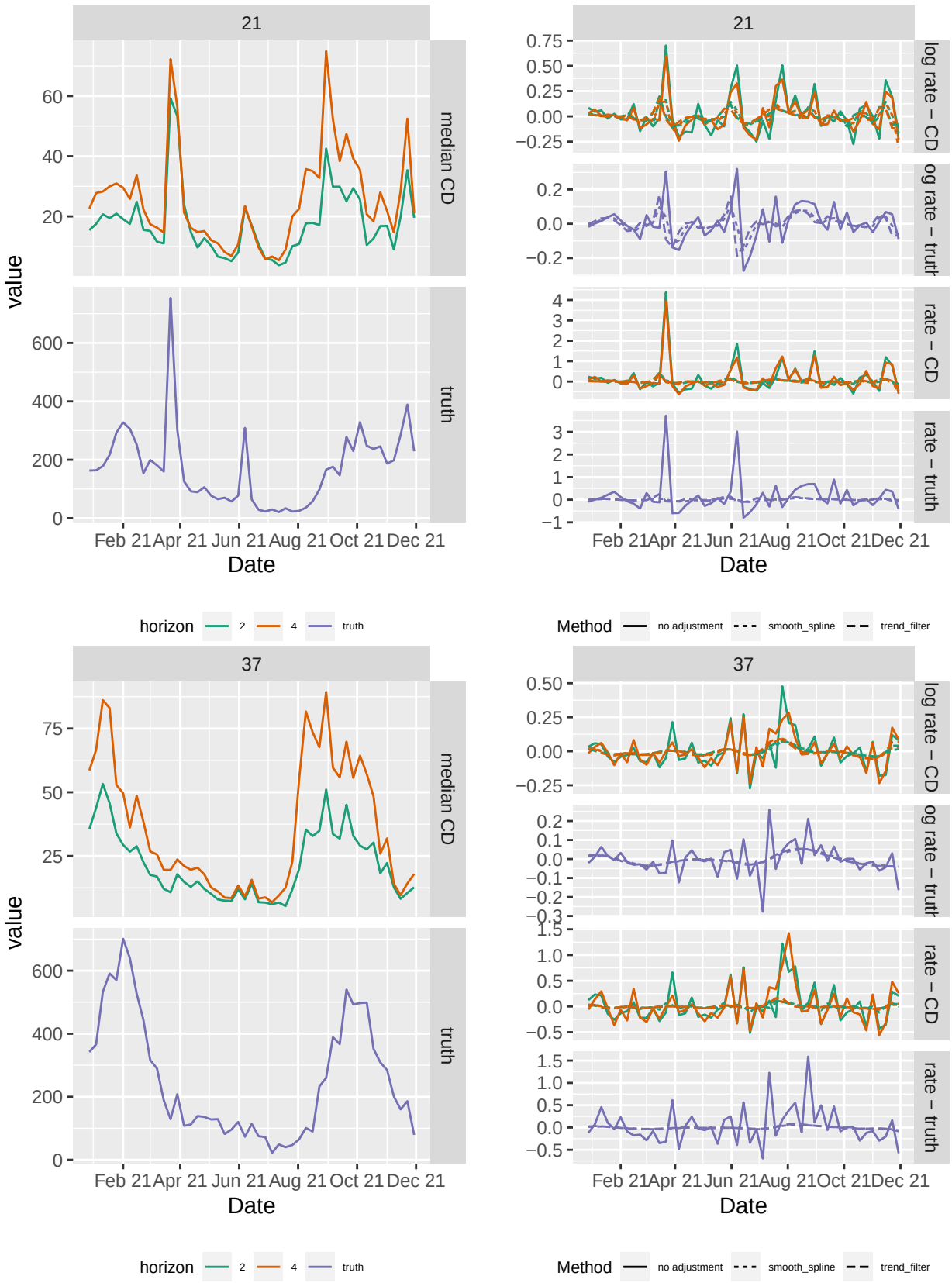
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
no adjustment
smooth_spline
trend_filter
26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Feb 21
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Aug 21
Oct 21
Dec 21
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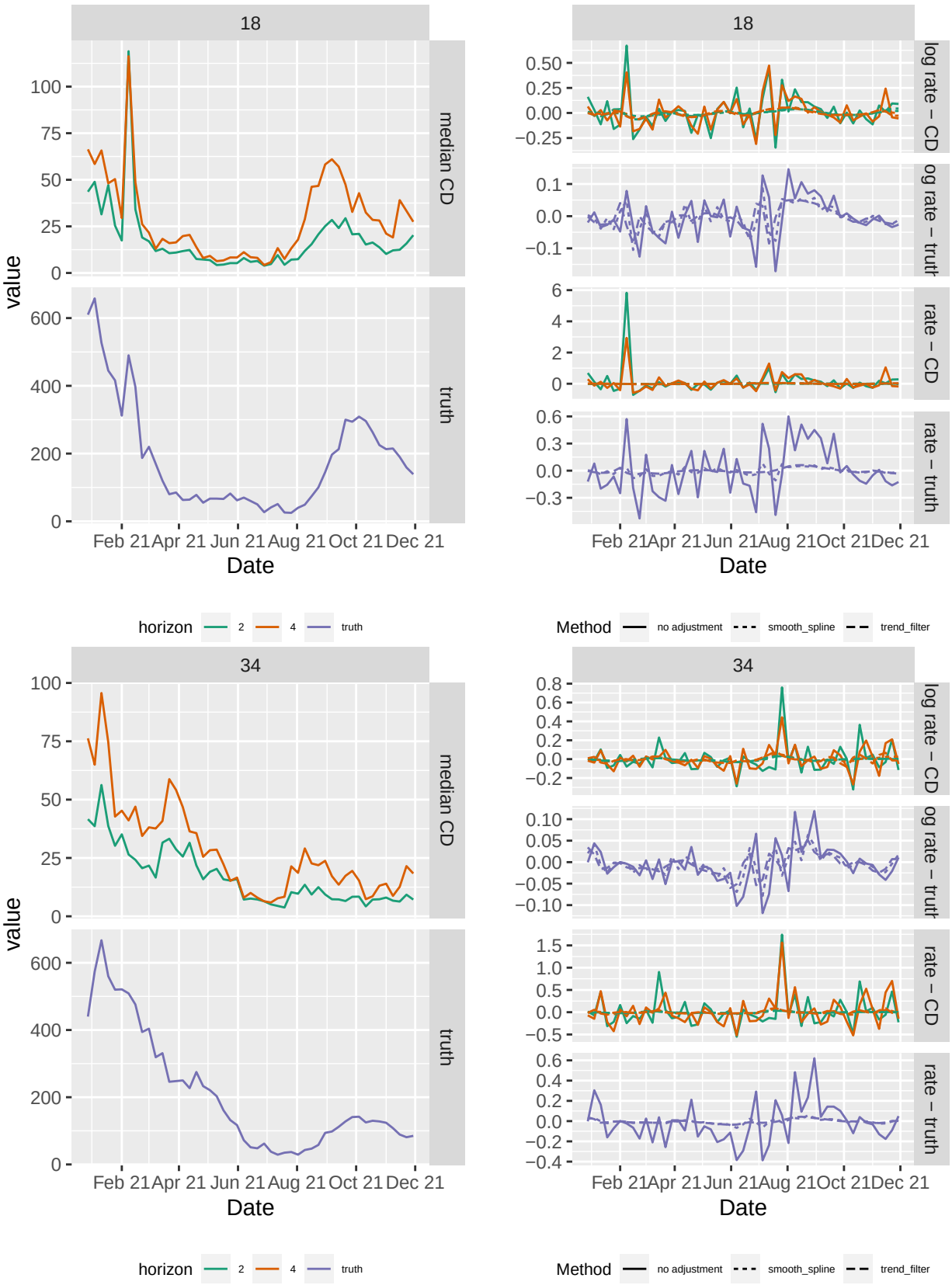
rate – CD
rate – truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
37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rate − CD
rate − truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
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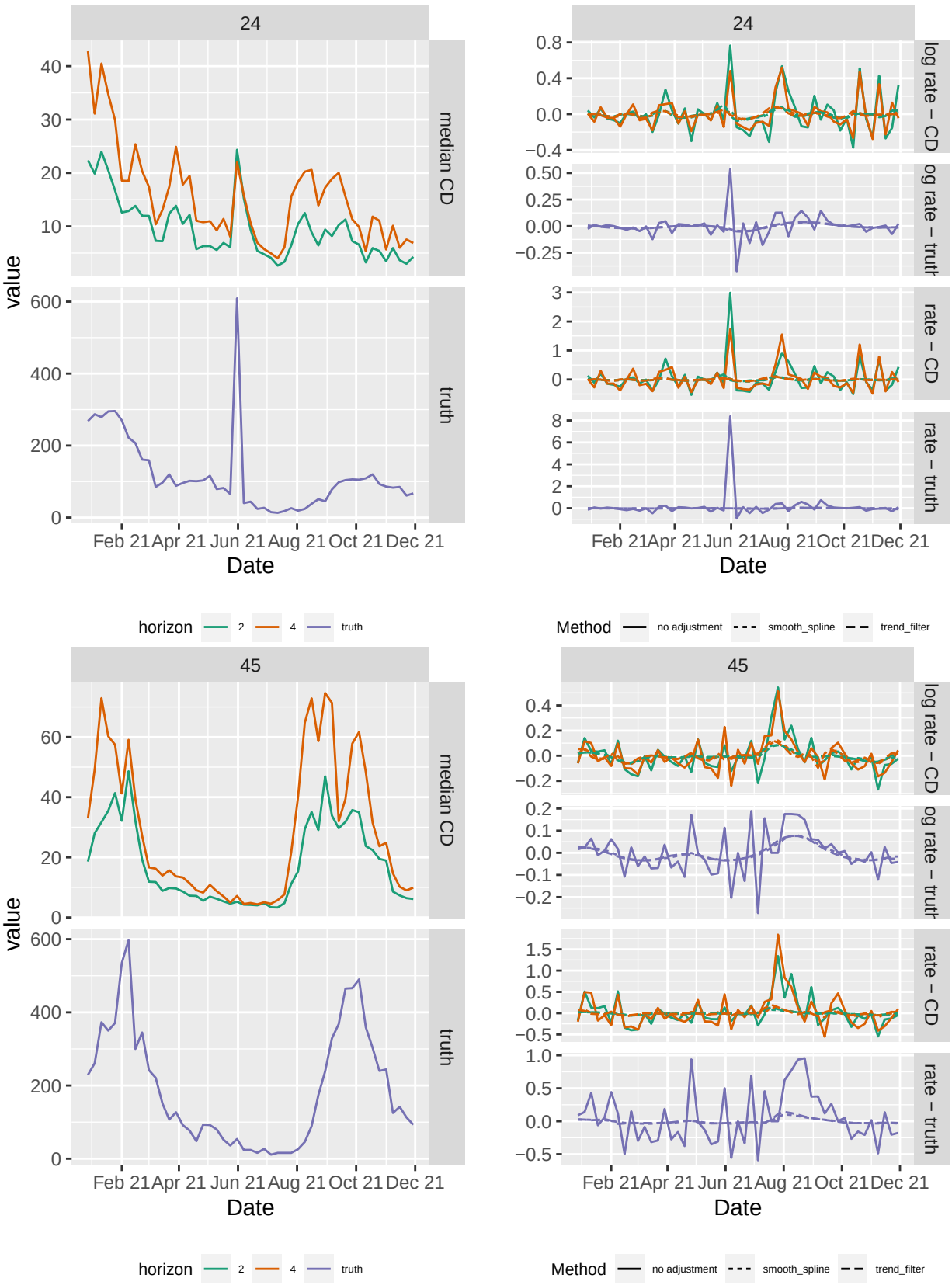
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log rate − CD
og rate − truth
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rate − truth
Method
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smooth_spline
trend_filter
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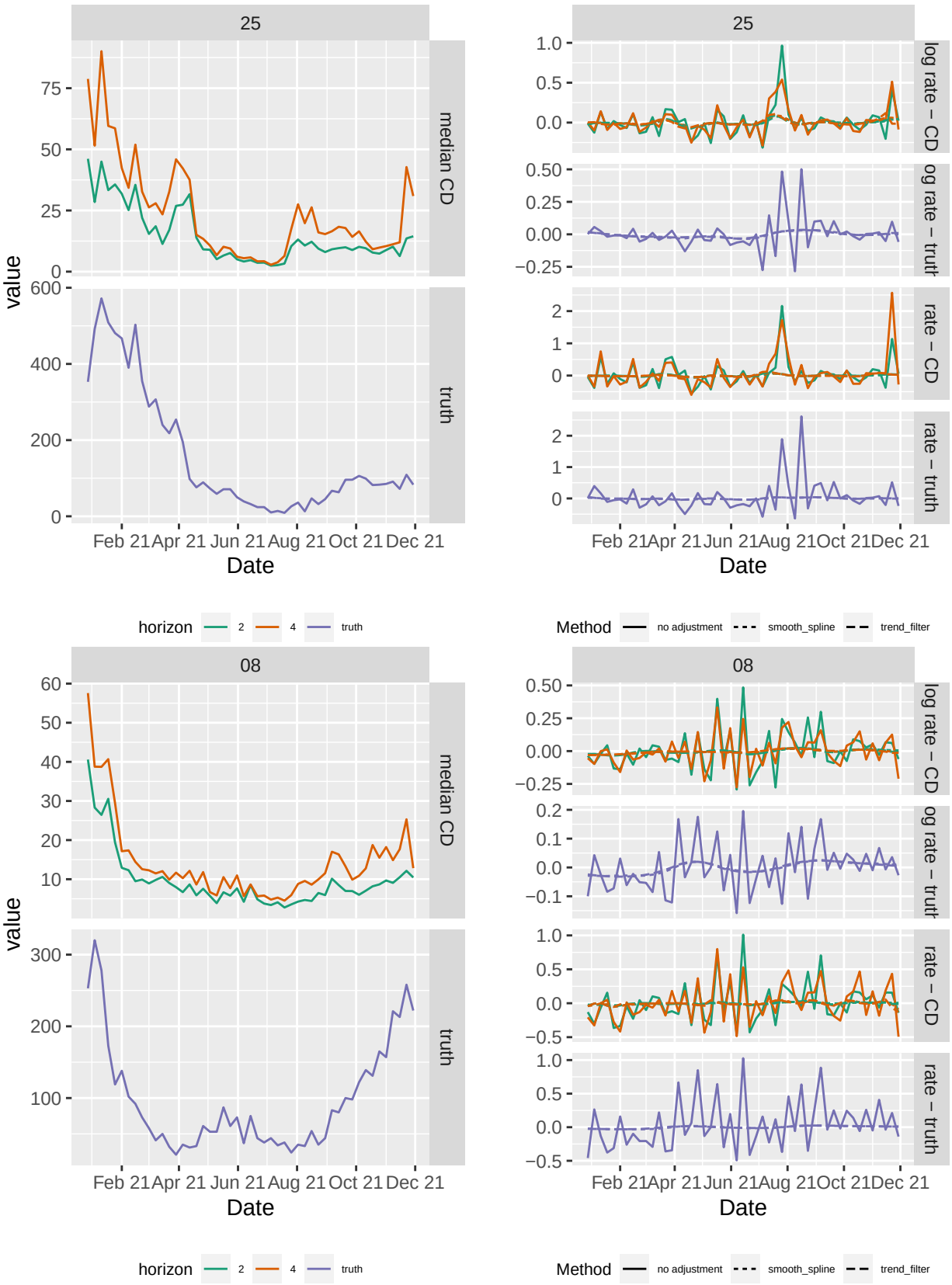
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Dec 21
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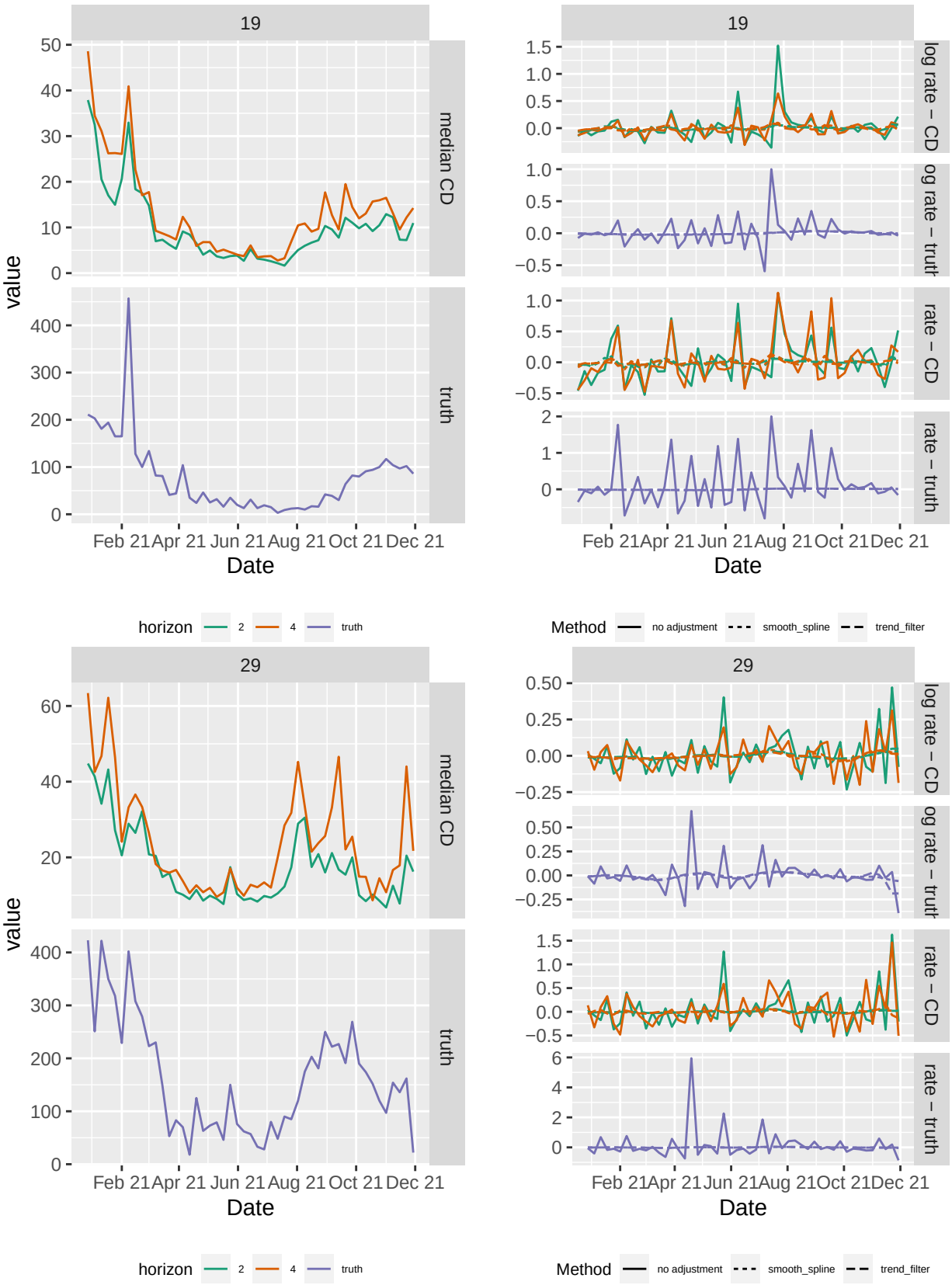
rate − CD
rate − truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
08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median CD
truth
value
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Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
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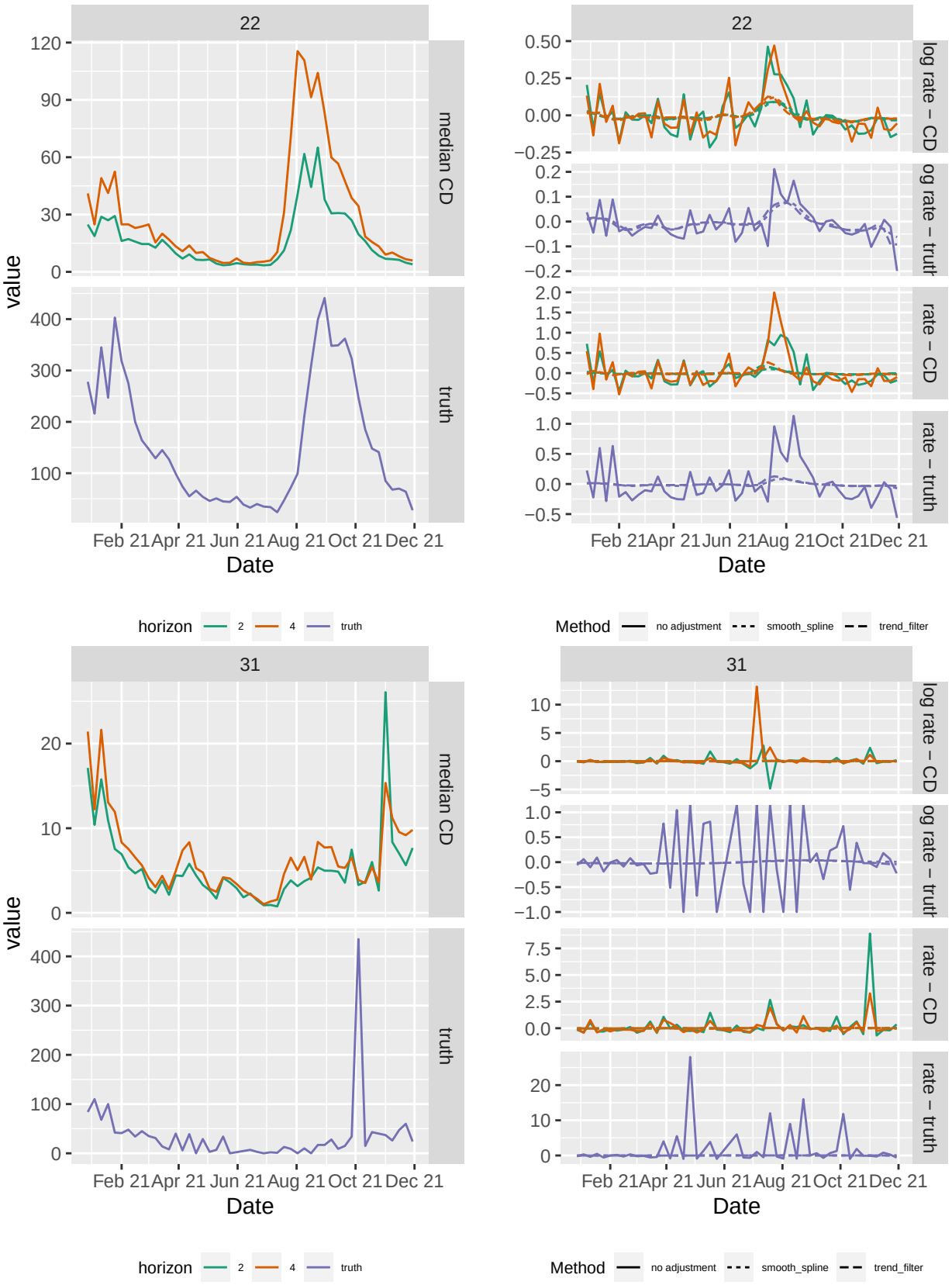
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
no adjustment
smooth_spline
trend_filter
29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median CD
truth
value
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Aug 21
Oct 21
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rate − CD
rate − truth
horizon
2
4
truth
Method
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smooth_spline
trend_filter
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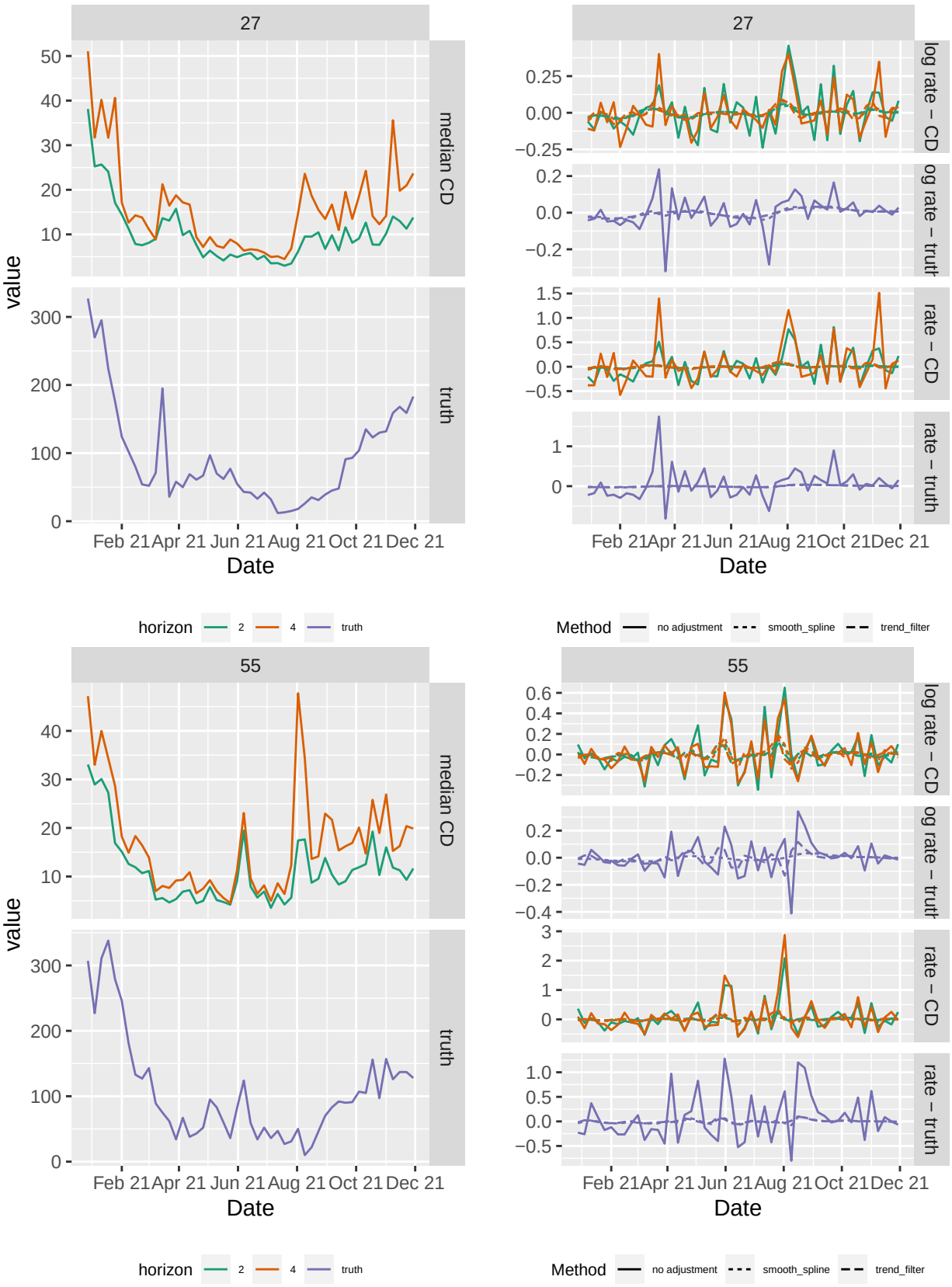
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median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
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truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
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smooth_spline
trend_filter
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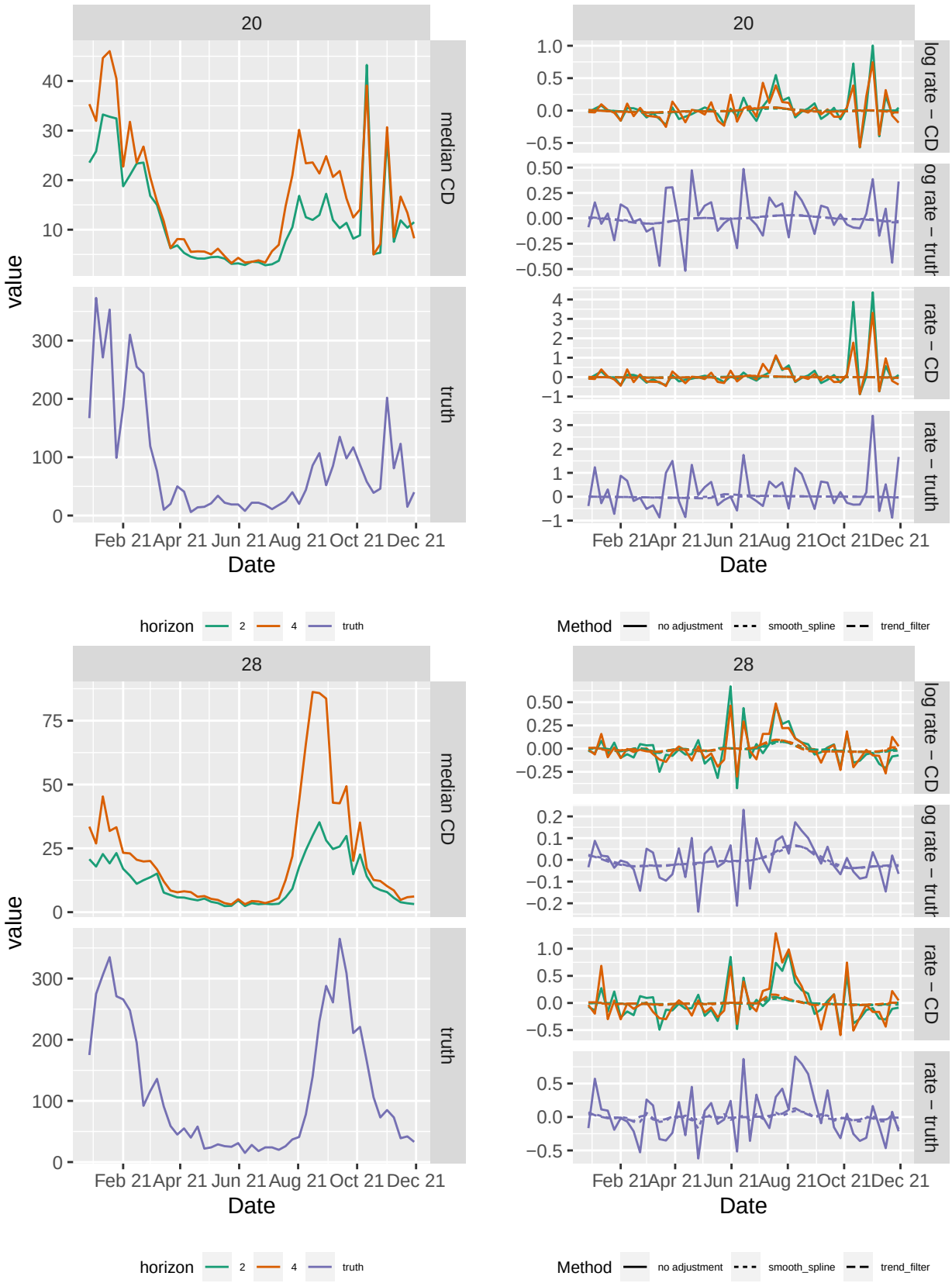
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median CD
truth
value
Feb 21
Apr 21
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Aug 21
Oct 21
Dec 21
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horizon
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truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
no adjustment
smooth_spline
trend_filter
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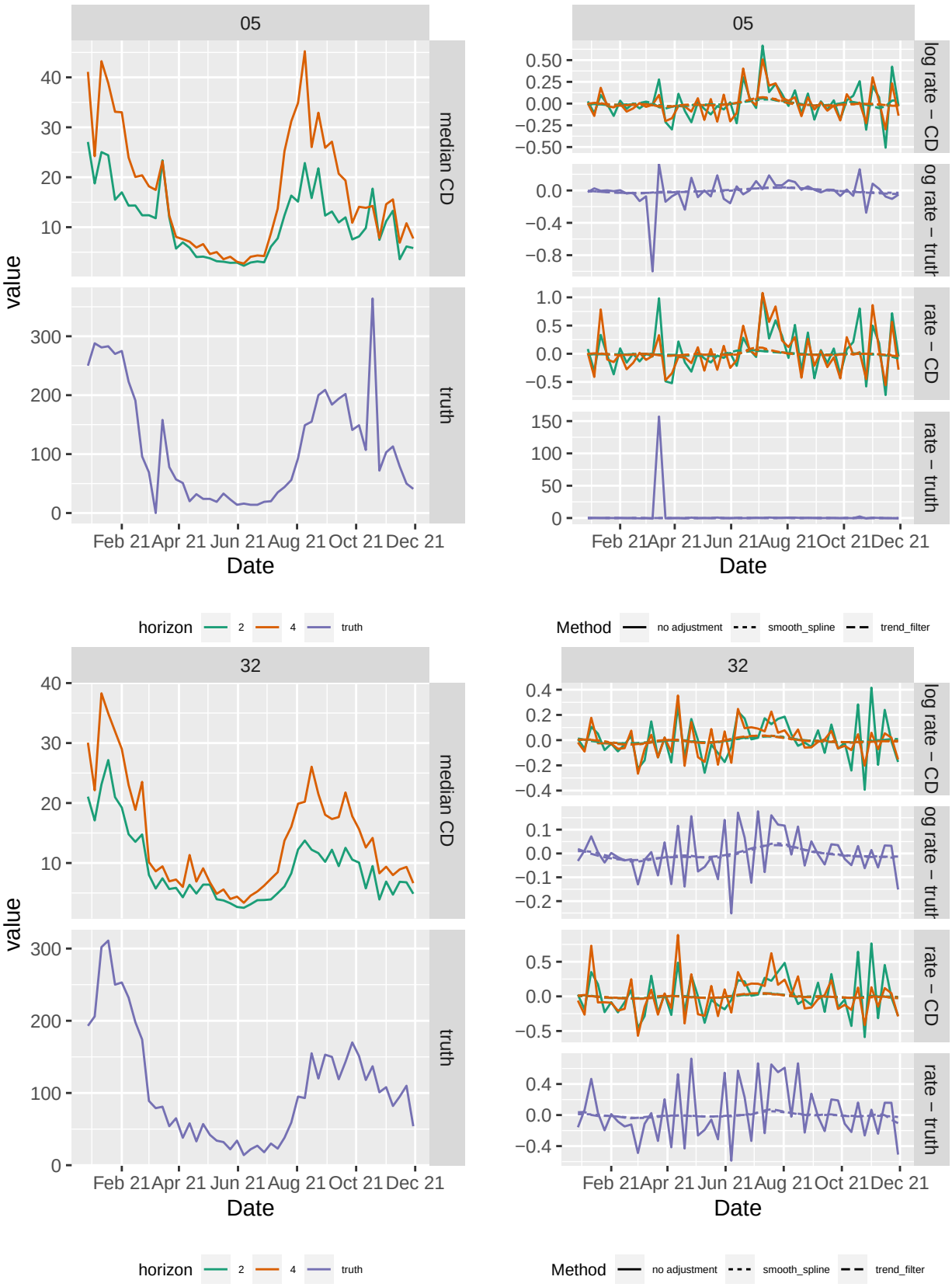
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median CD
truth
value
Feb 21
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Jun 21
Aug 21
Oct 21
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truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
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smooth_spline
trend_filter
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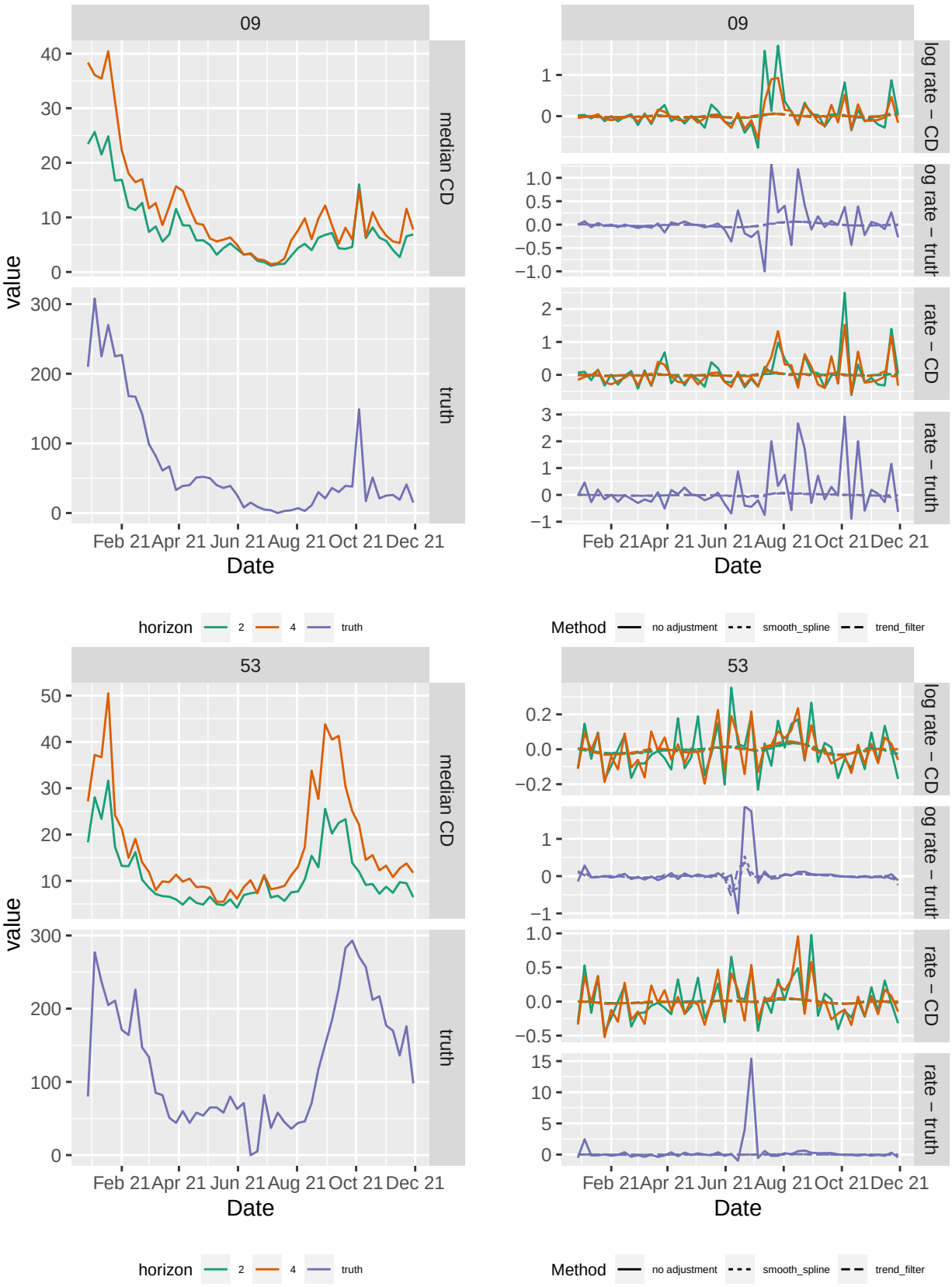
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truth
value
Feb 21
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Jun 21
Aug 21
Oct 21
Dec 21
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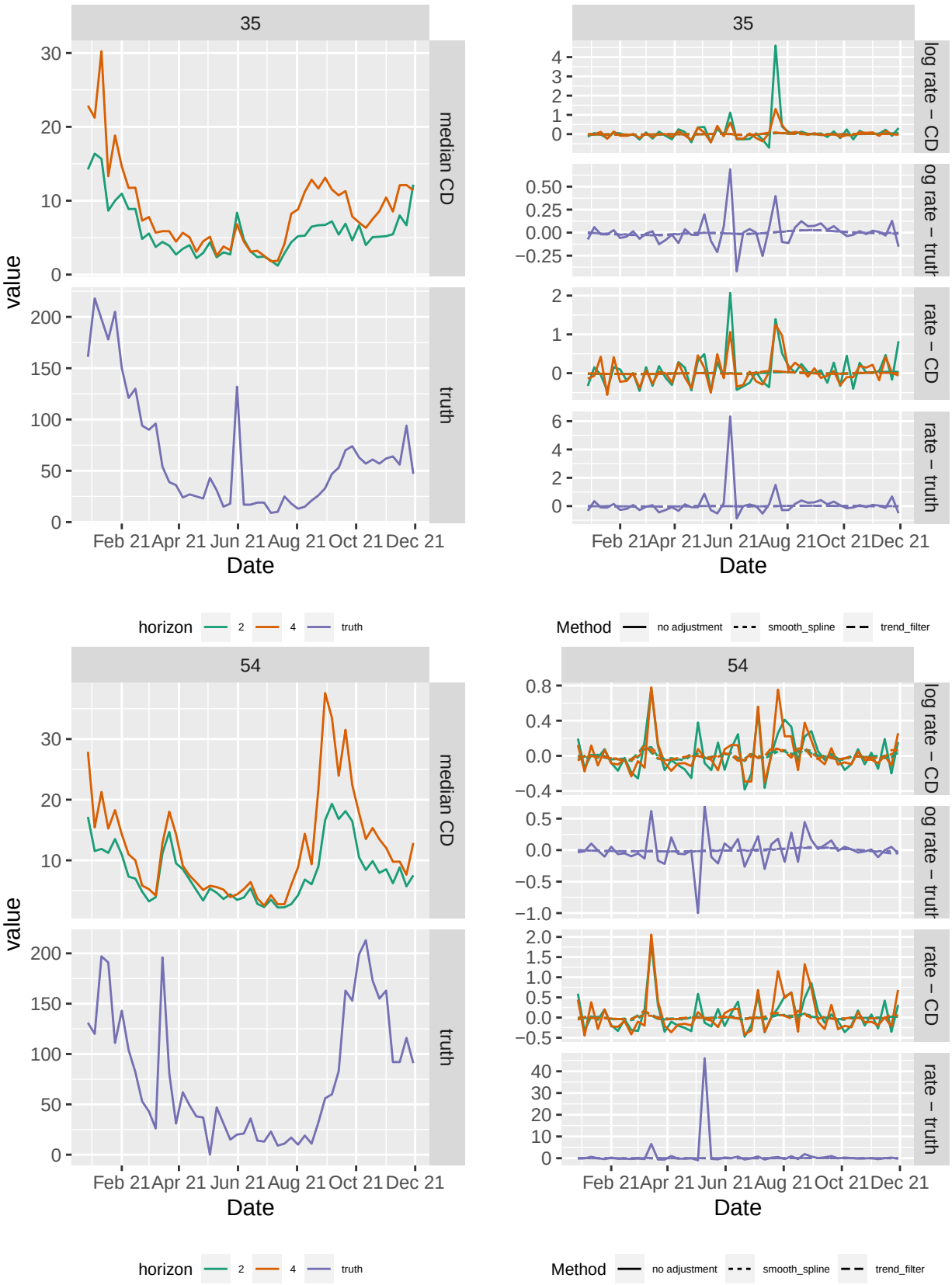
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
no adjustment
smooth_spline
trend_filter
53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median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
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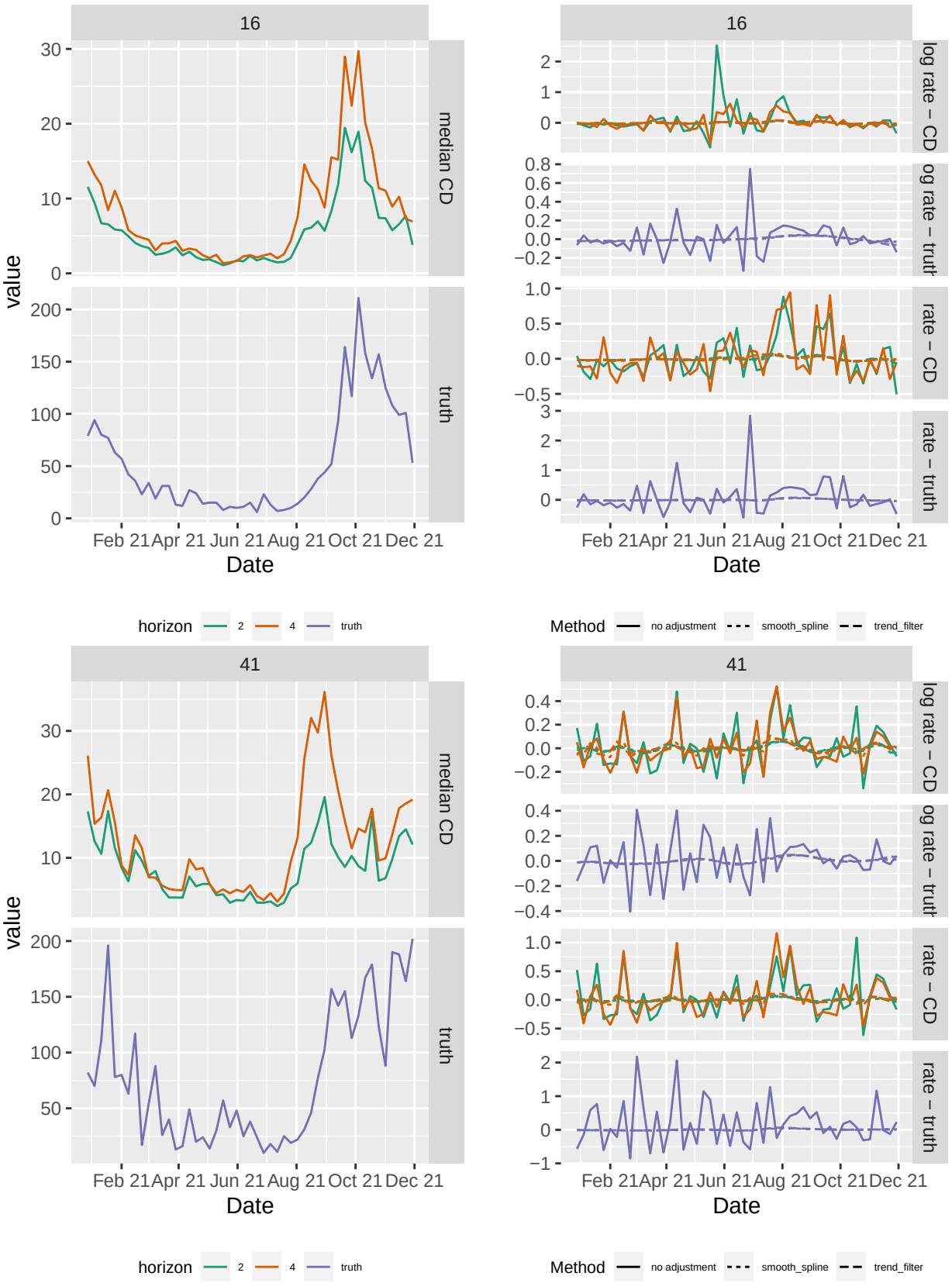
truth
54
35
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
no adjustment
smooth_spline
trend_filter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median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
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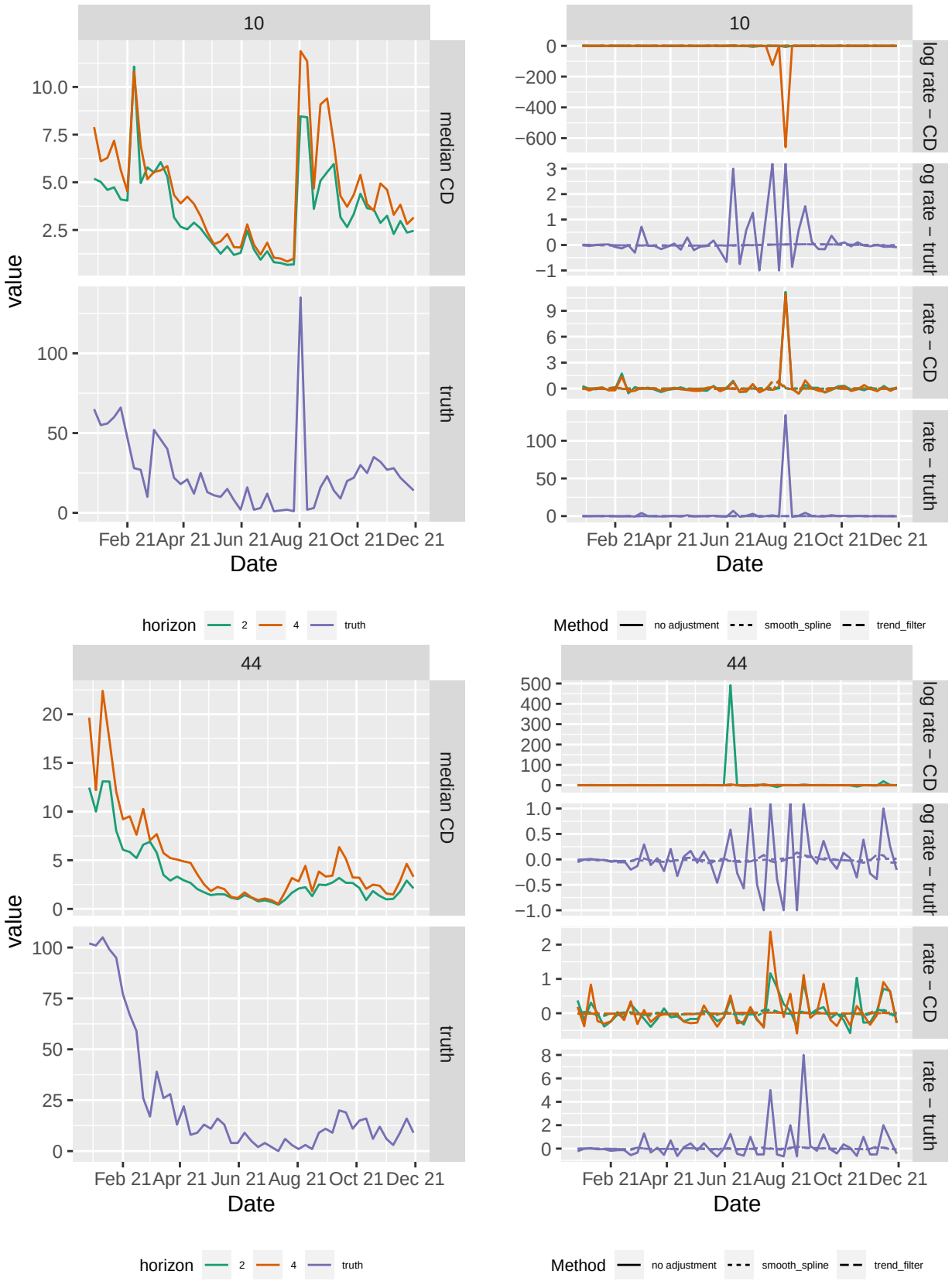
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
no adjustment
smooth_spline
trend_filter
41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median CD
truth
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Date
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
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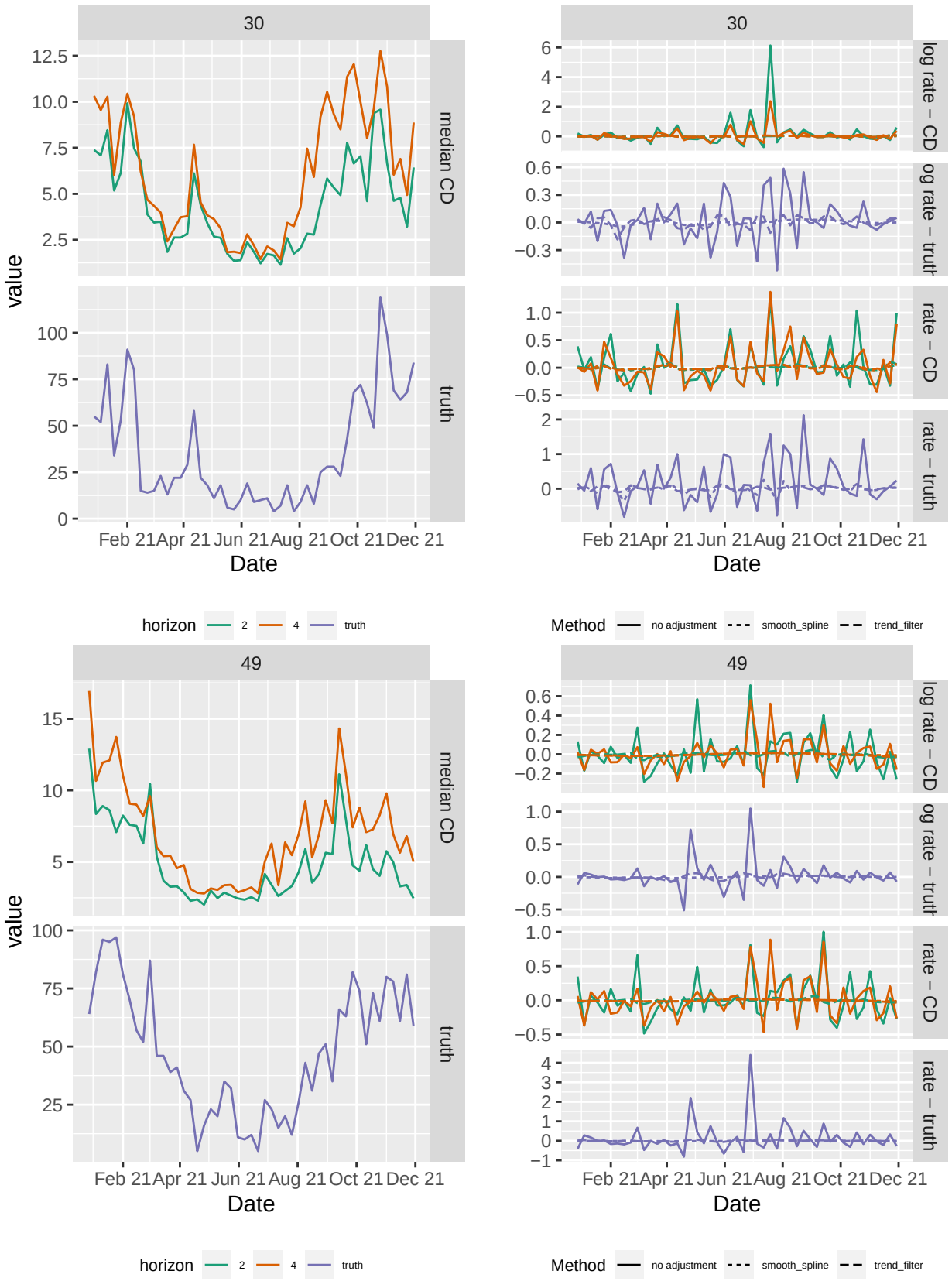
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
no adjustment
smooth_spline
trend_filter
44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Aug 21
Oct 21
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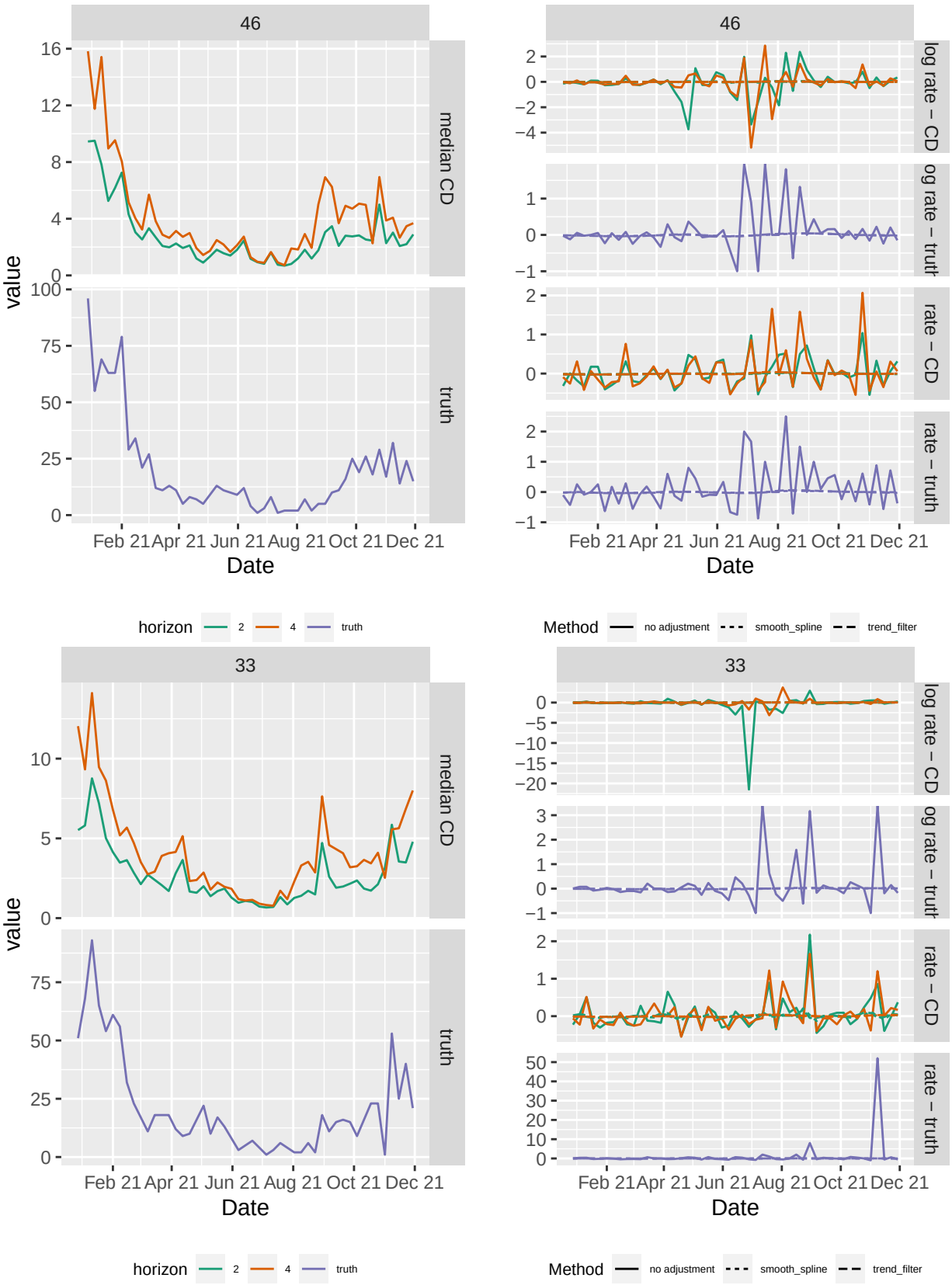
rate – CD
rate – truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
49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Date
horizon
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4
truth
46
log rate − CD
og rate − truth
rate − CD
rate − truth
Feb 21 Apr 21 Jun 21 Aug 21 Oct 21 Dec 21
Date
Method
no adjustment
smooth_spline
trend_filter
33
median CD
truth
value
Feb 21 Apr 21 Jun 21 Aug 21 Oct 21 Dec 21
Date
horizon
2
4
truth
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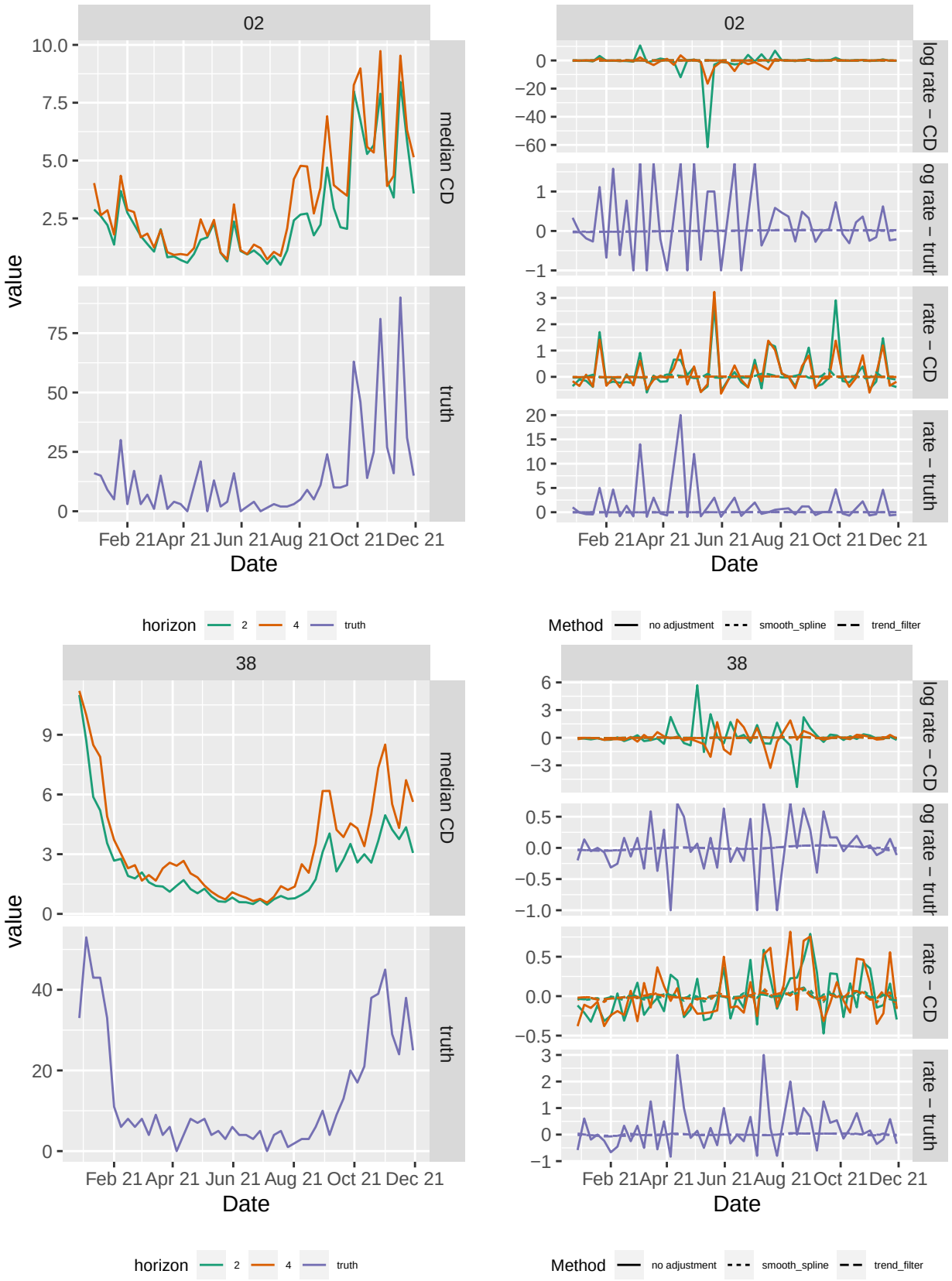
log rate − CD
og rate − truth
rate − CD
rate − truth
Feb 21 Apr 21 Jun 21 Aug 21 Oct 21 Dec 21
Date
Method
no adjustment
smooth_spline
trend_filter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Date
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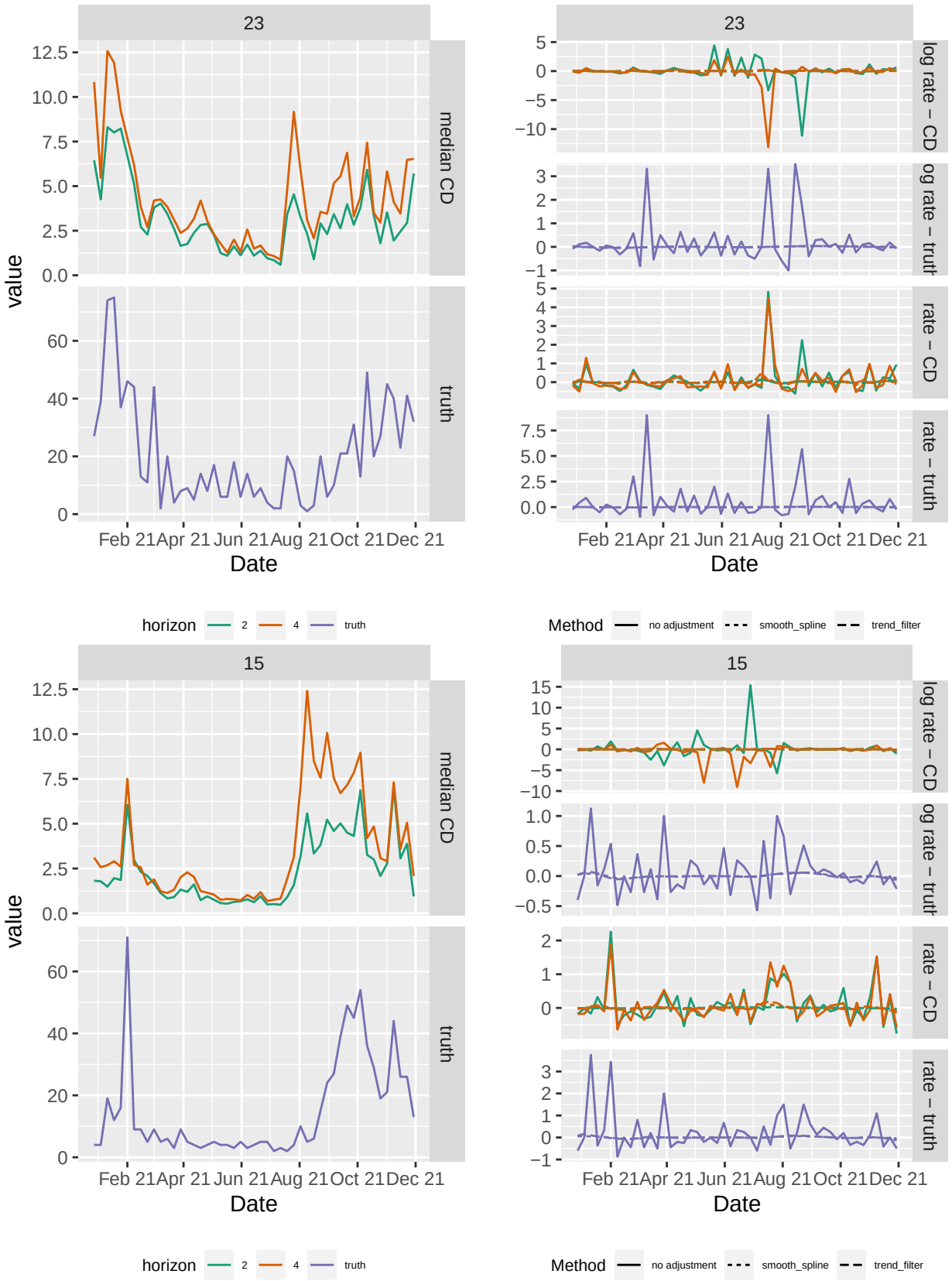
rate − CD
rate − truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
38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median CD
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Aug 21
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truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
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smooth_spline
trend_filter
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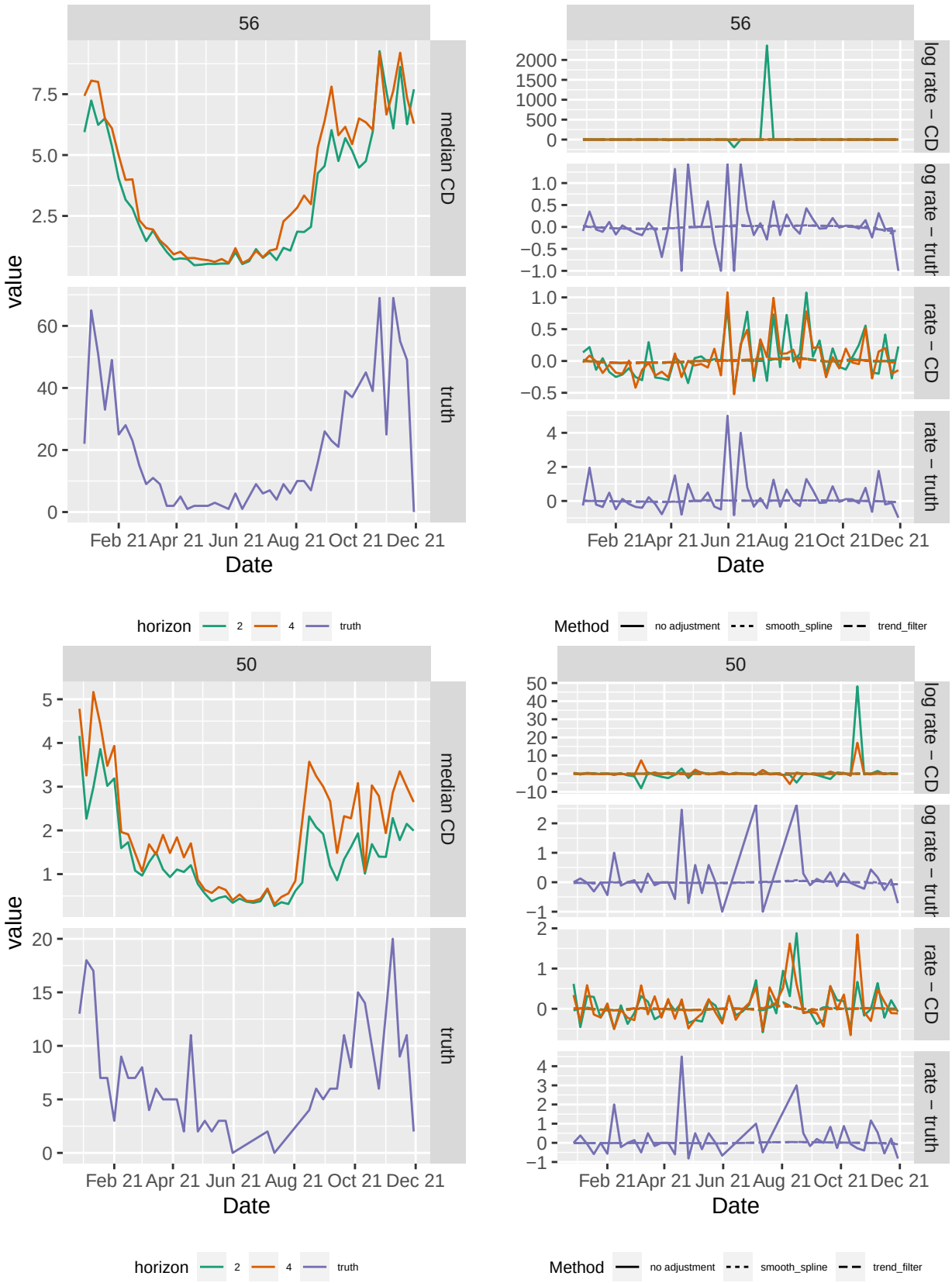
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Date
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Jun 21
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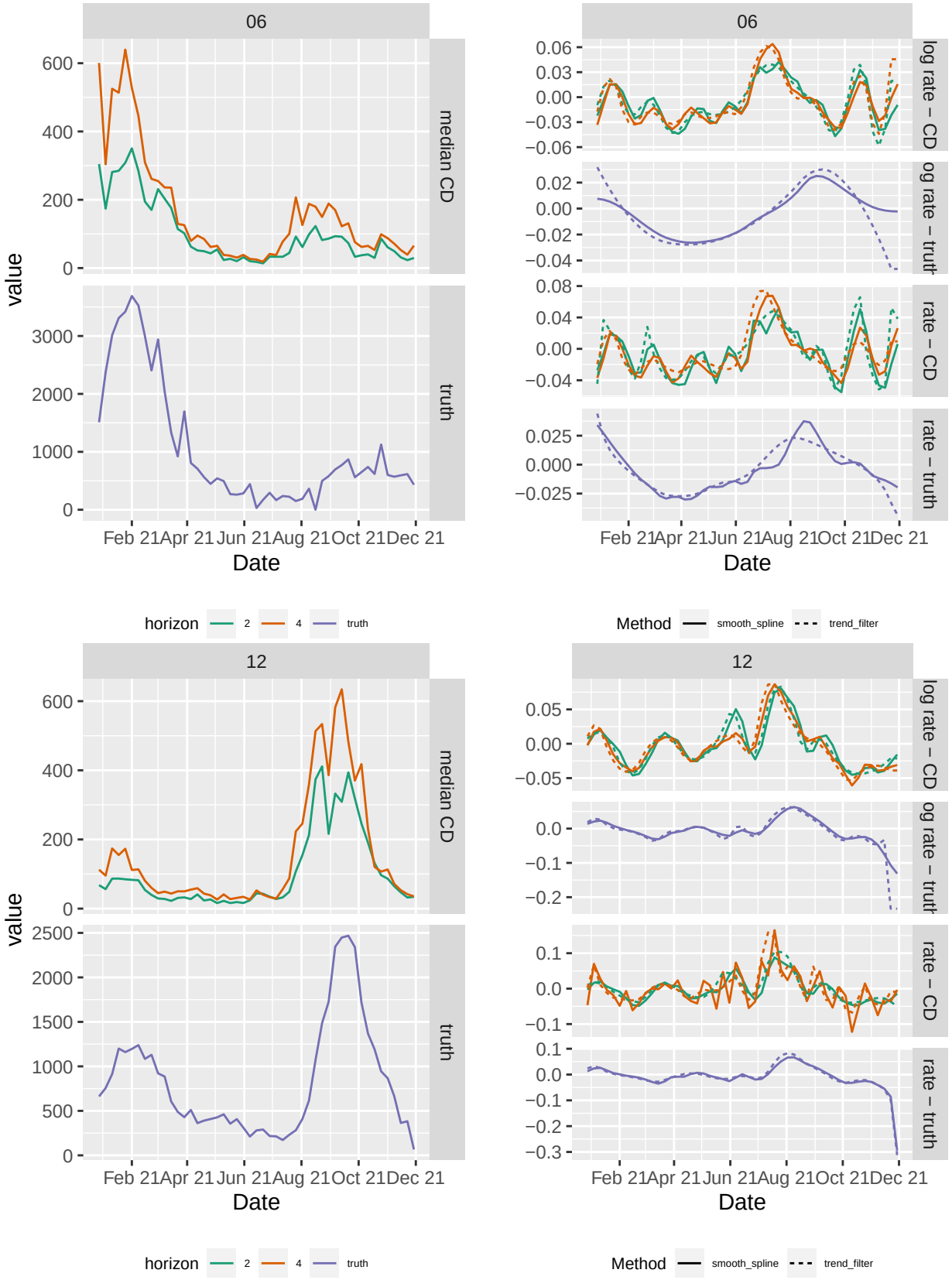
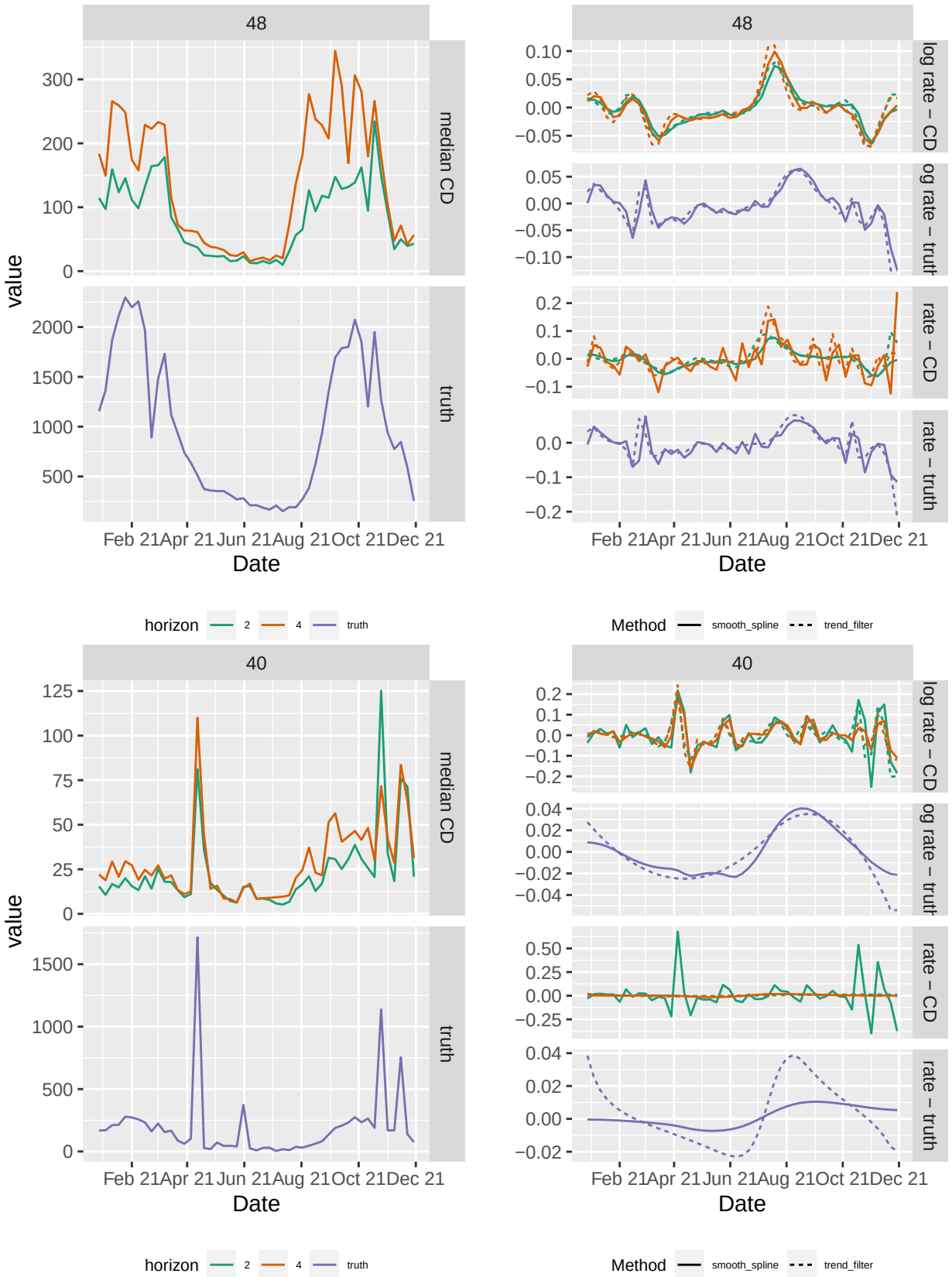
Oct 21
Dec 21
log rate − CD
og rate − truth
rate − CD
rate − truth
horizon
2
4
truth
Method
no adjustment
smooth_spline
trend_filter
50

Plots - without no adjustment line




48
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
40

42
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
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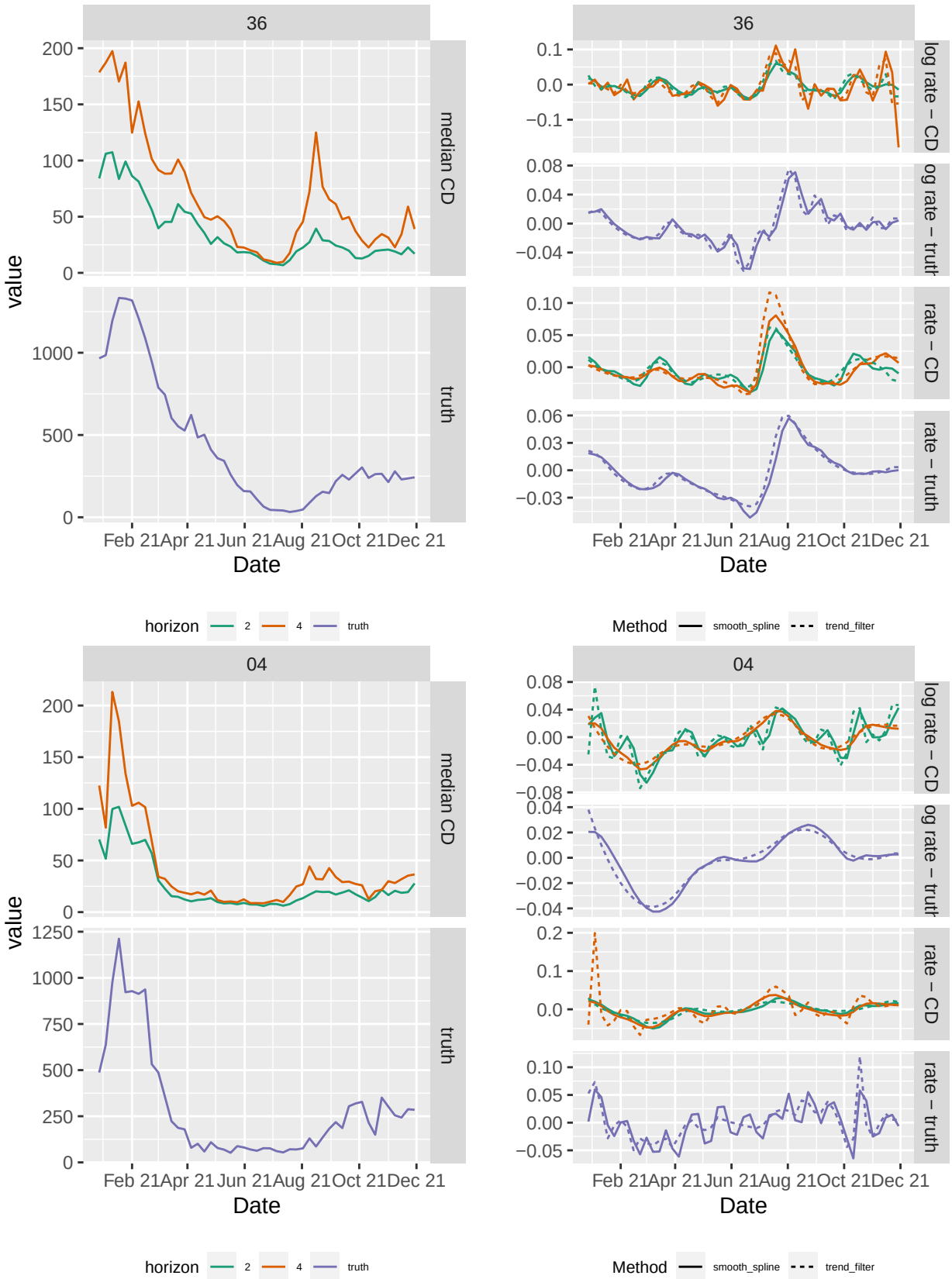
2
4
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
39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04
median CD
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
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Date
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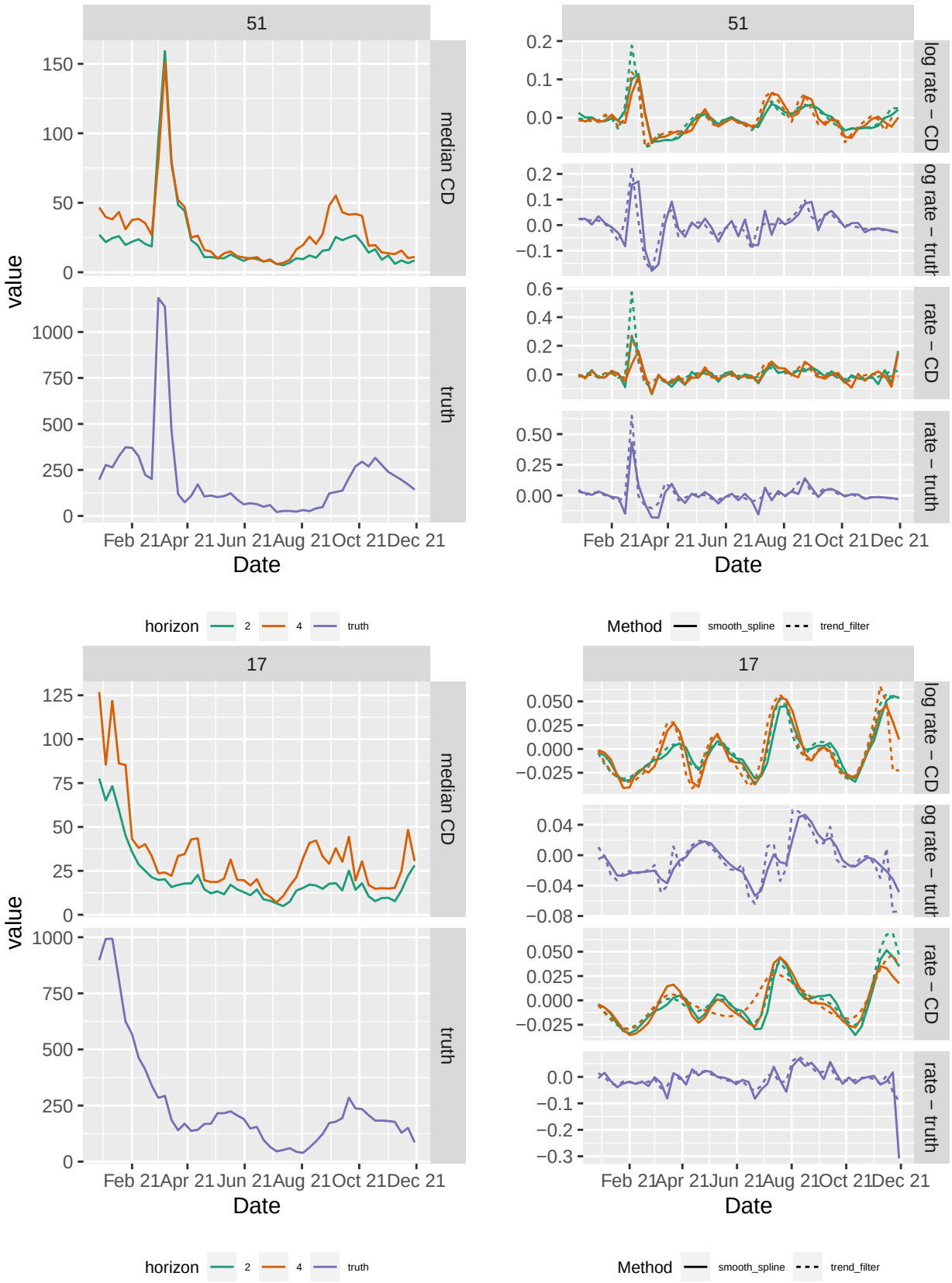
Aug 21
Oct 21
Dec 21
horizon
2
4
truth
Method
smooth_spline
trend_filter


51
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
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Date
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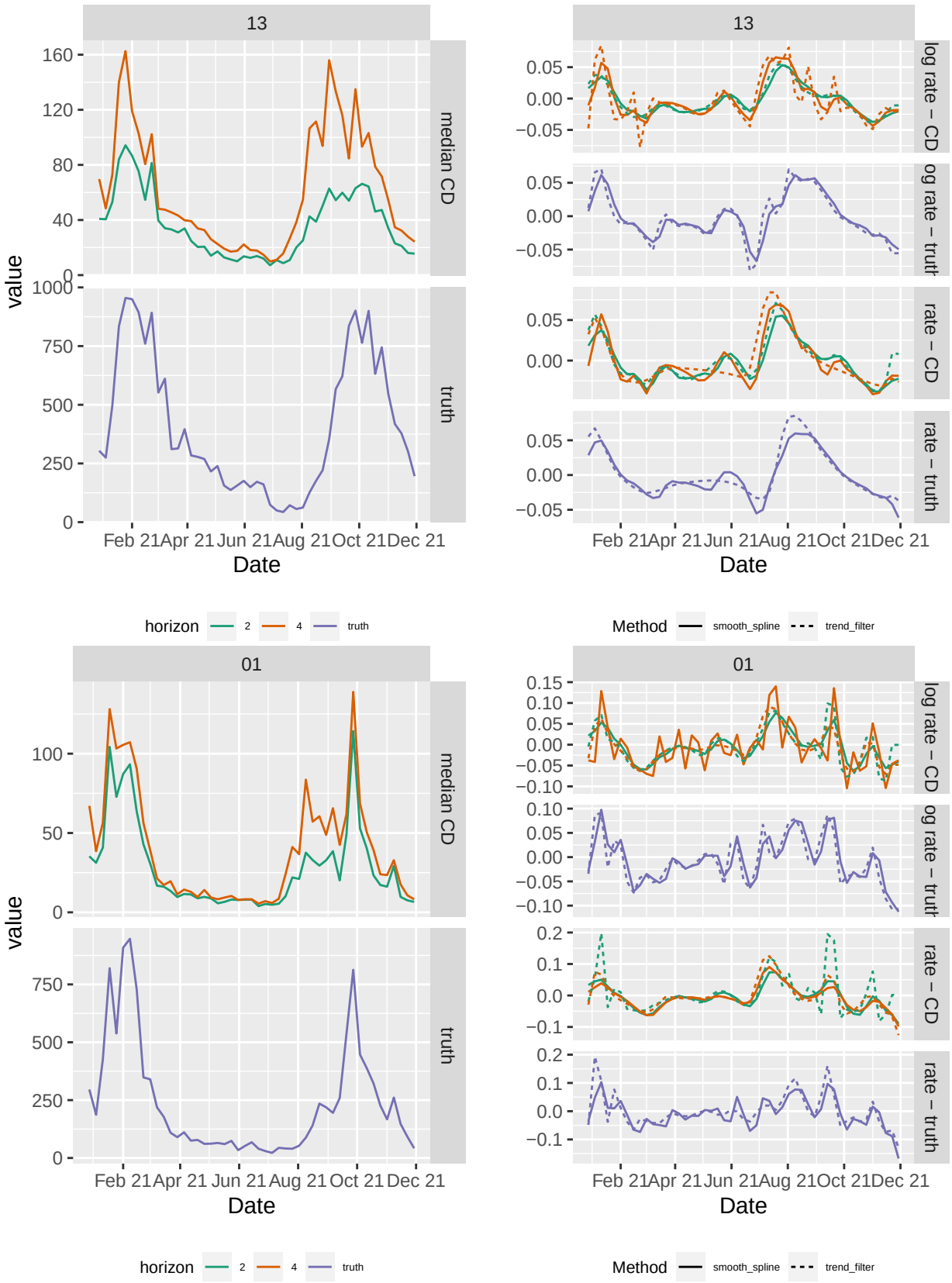
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
17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median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
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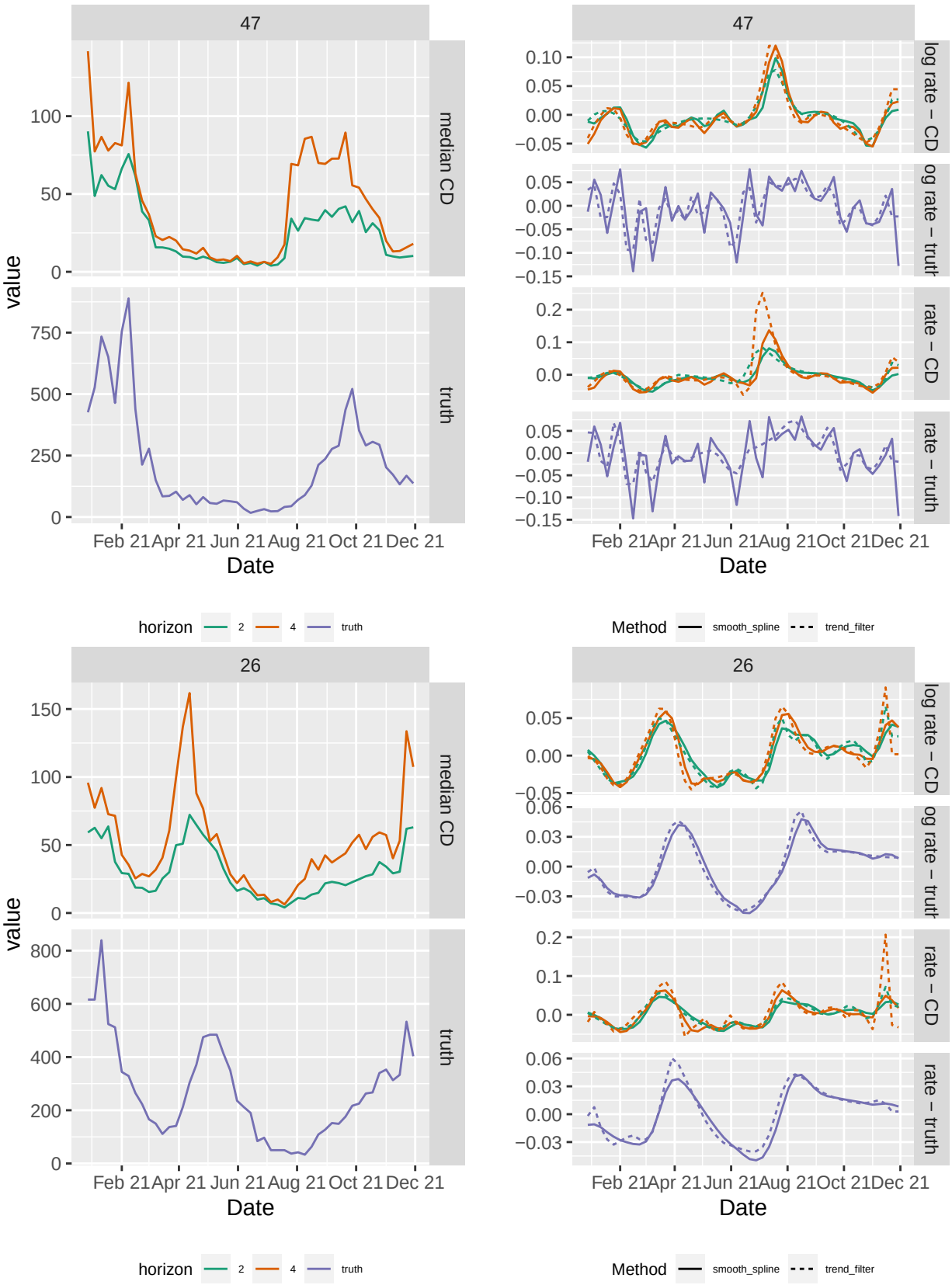
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
01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750
500
250
0
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Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
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horizon
2
4
truth
47
log rate – CD
og rate – truth
rate – CD
rate – truth
0.10
0.05
0.00
−0.05
−0.10
−0.15
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0.1
0.0
Method
smooth_spline
trend_filter
26
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800
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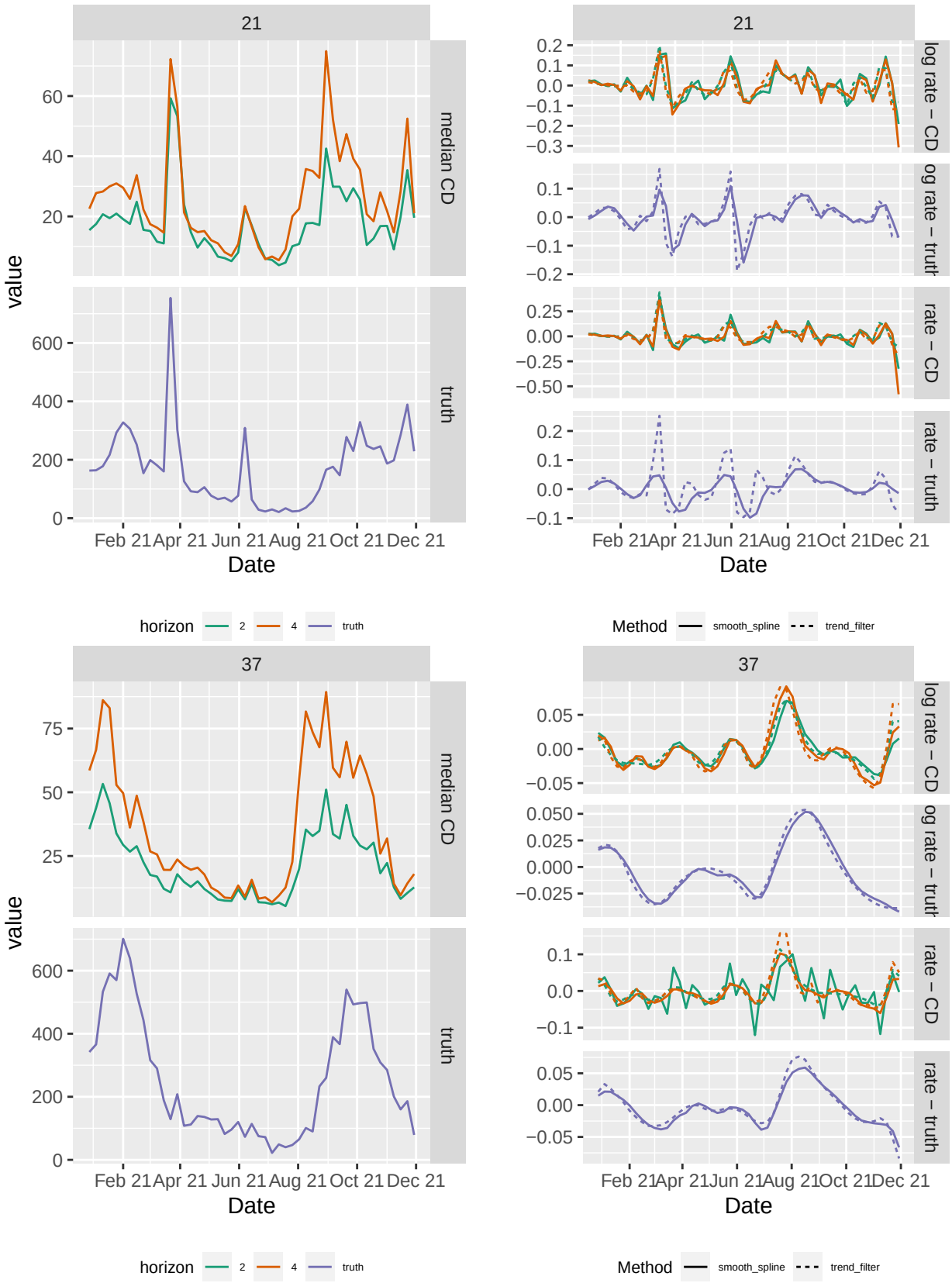
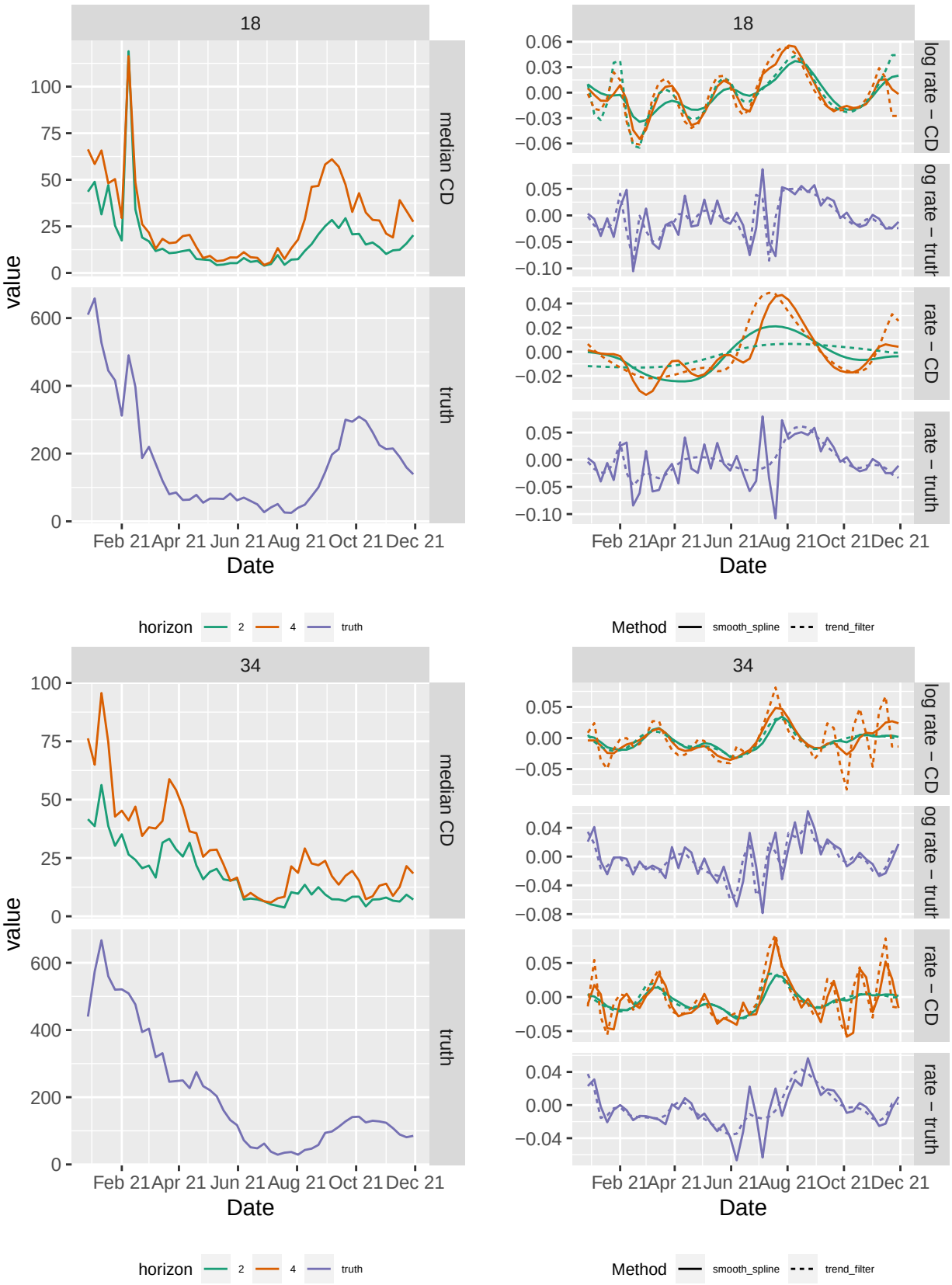
400
200


21
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
37


18
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
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Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
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smooth_spline
trend_filter
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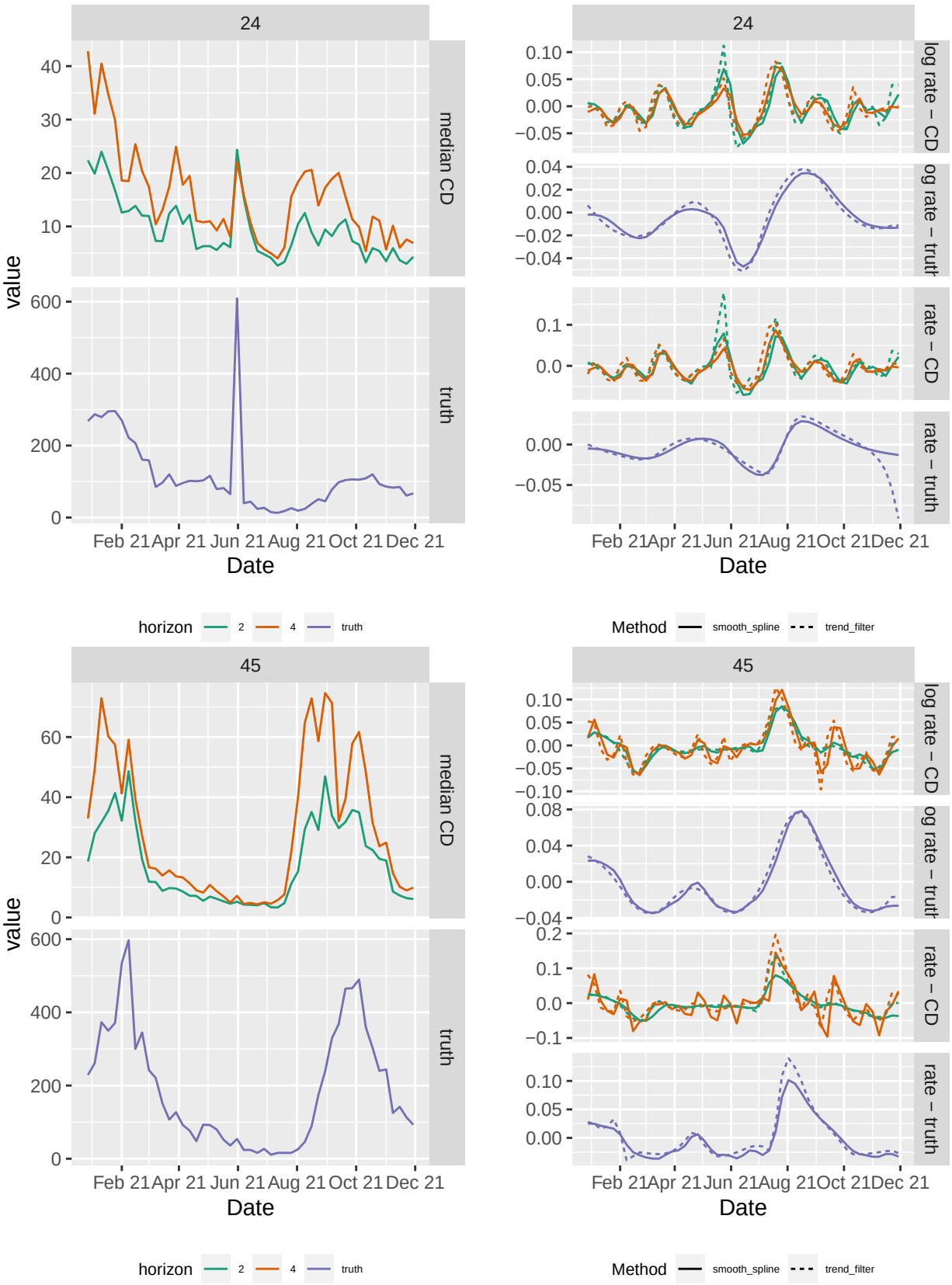
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median CD
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value
Feb 21
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Jun 21
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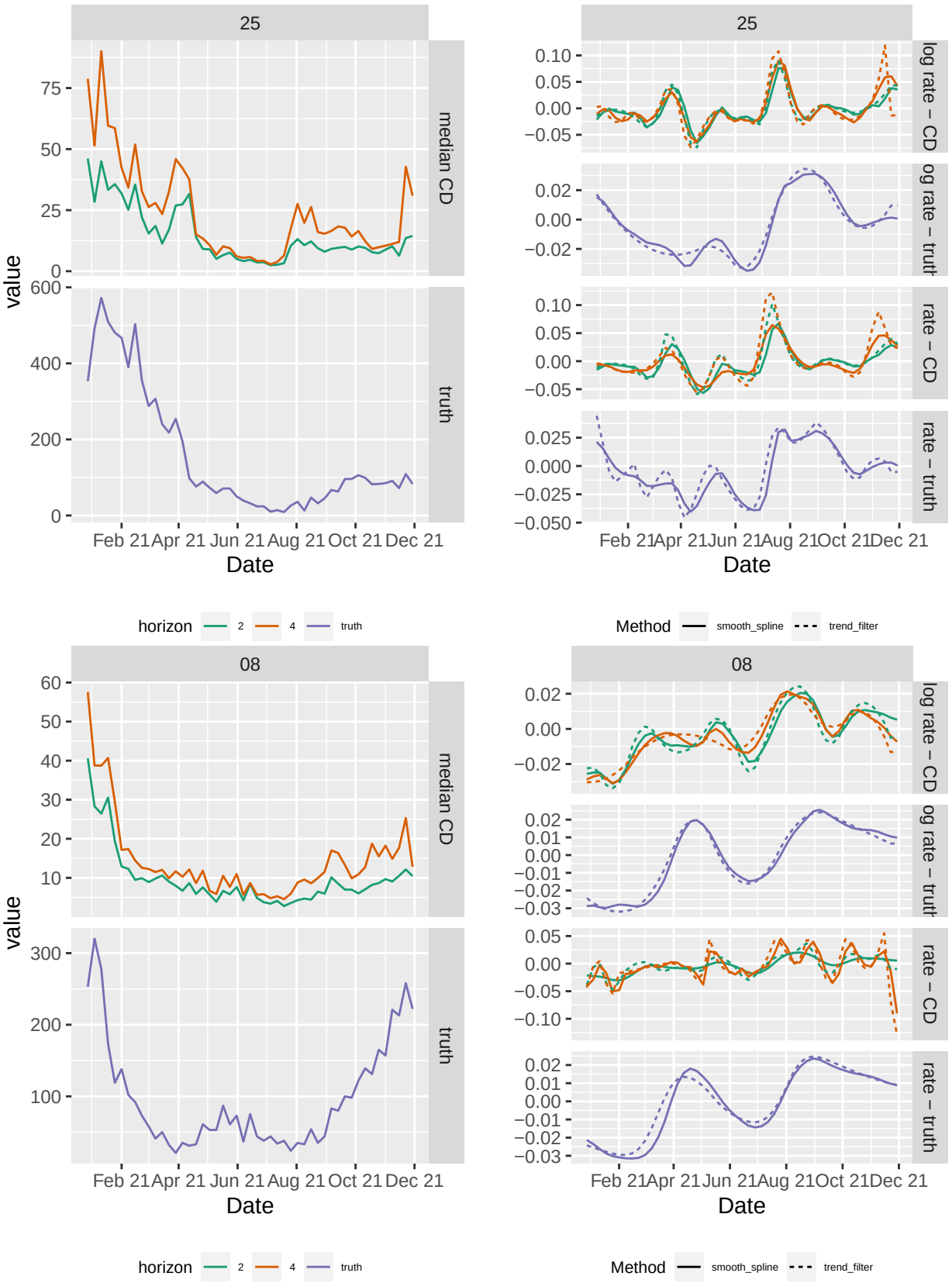
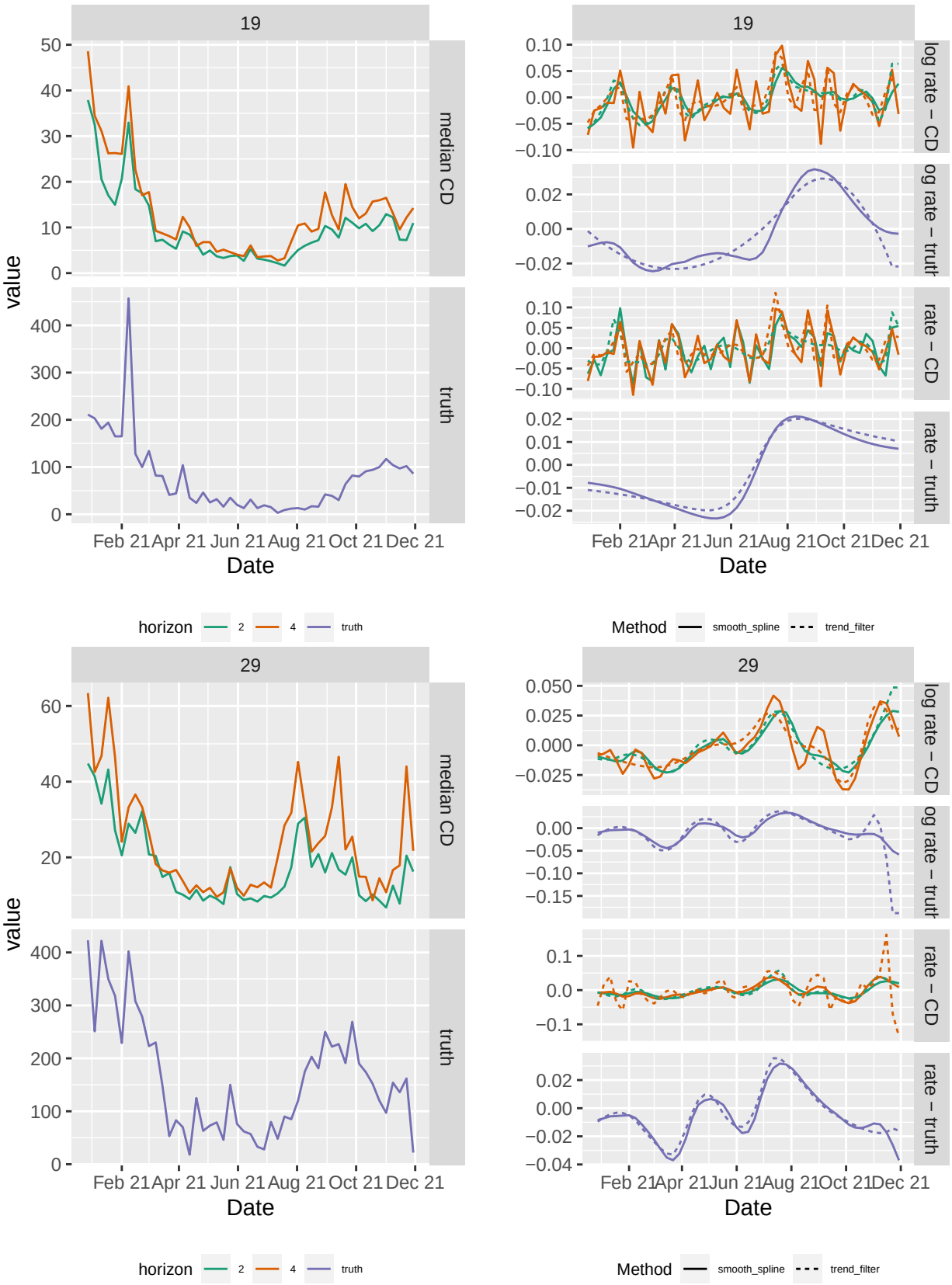
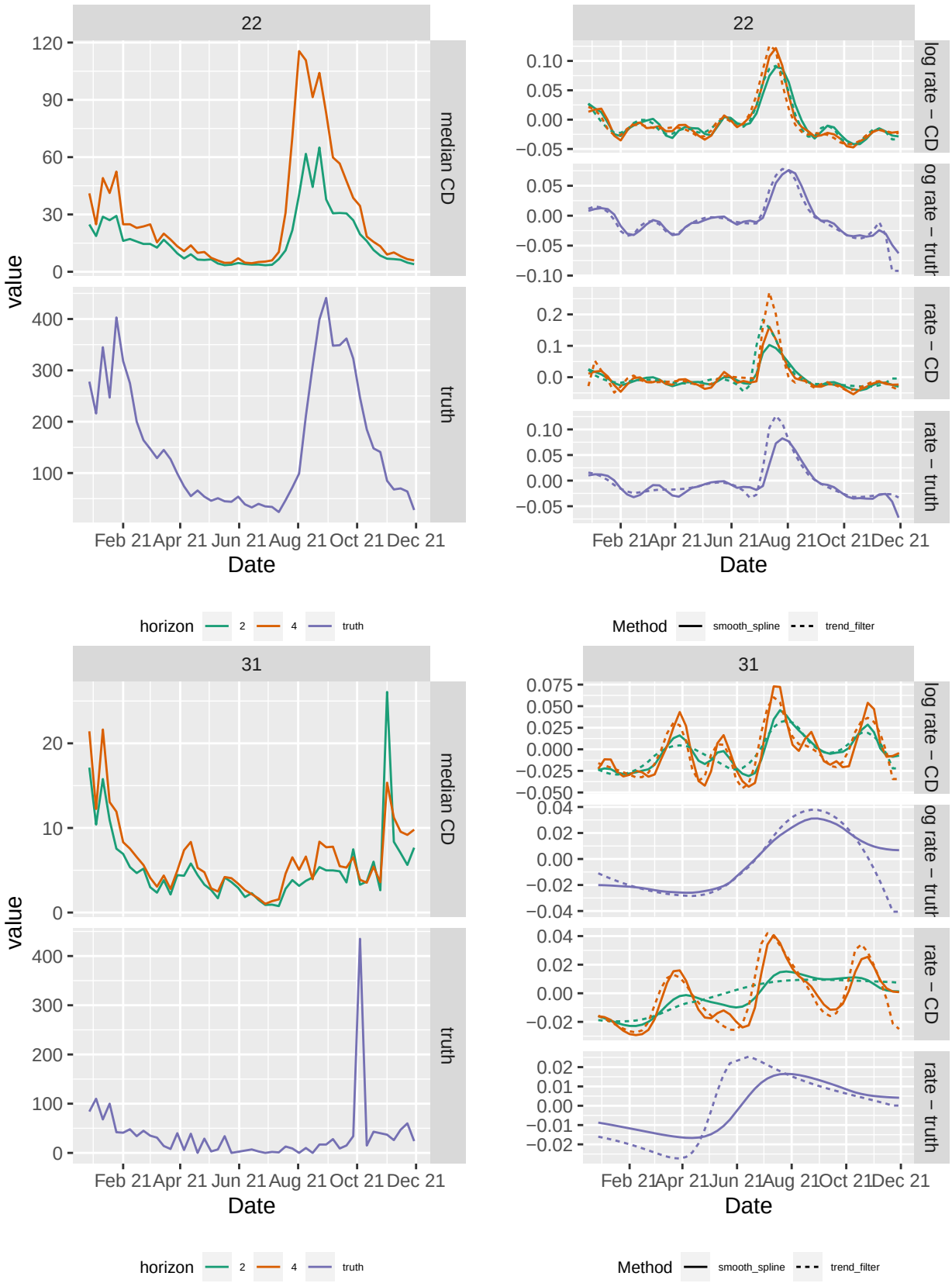
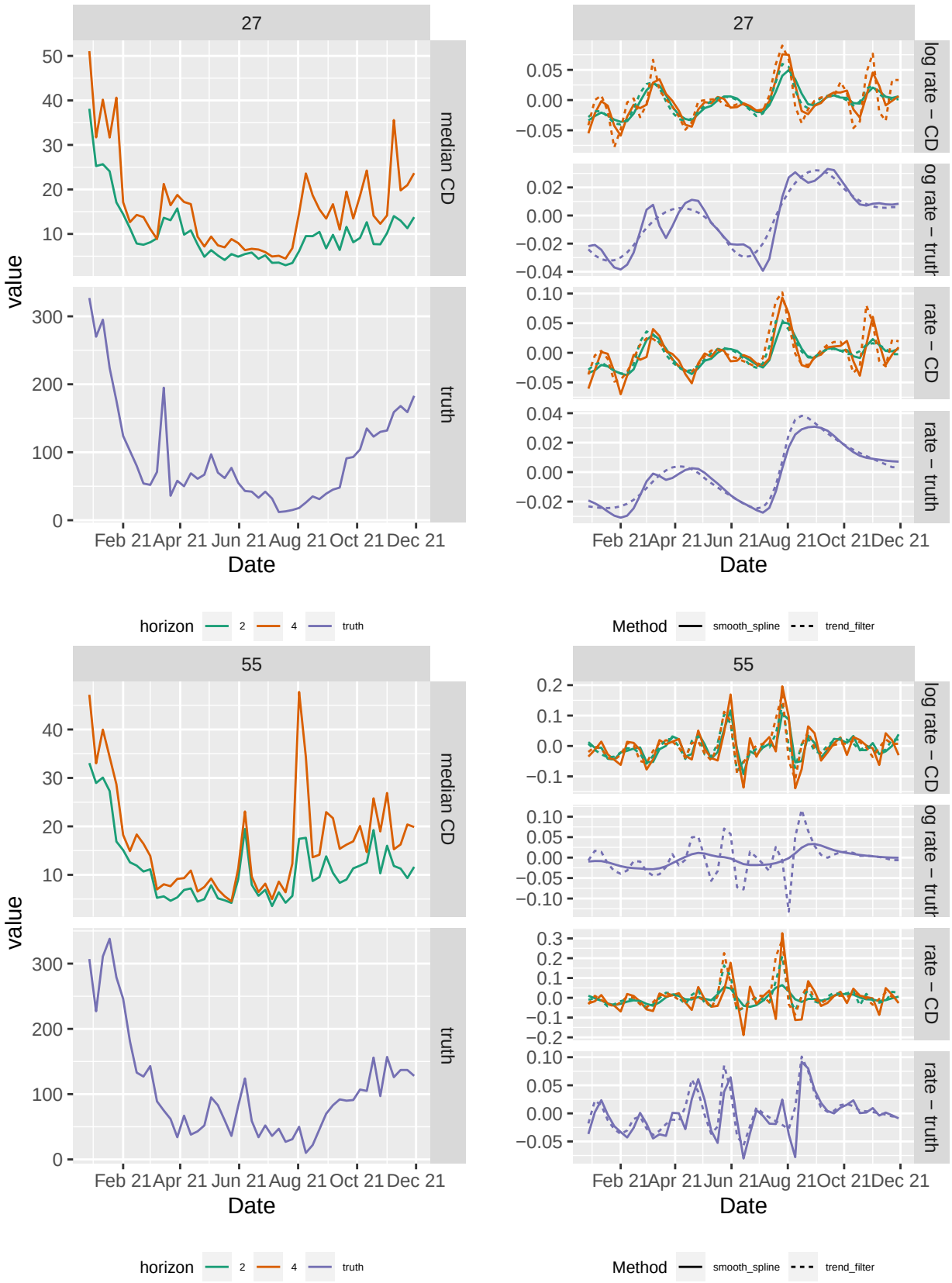
Dec 21
Date
horizon
2
4
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
45

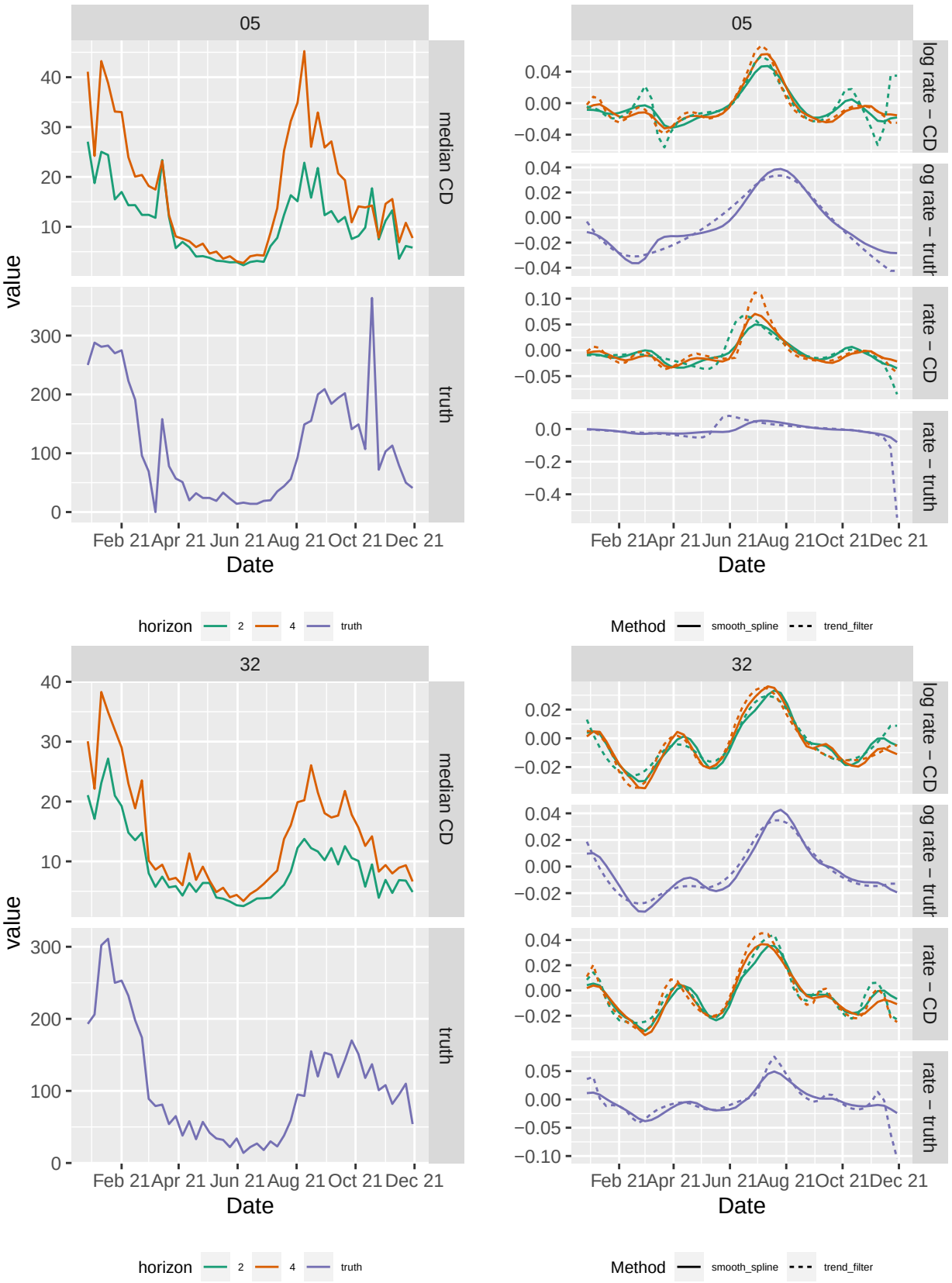

25
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
08

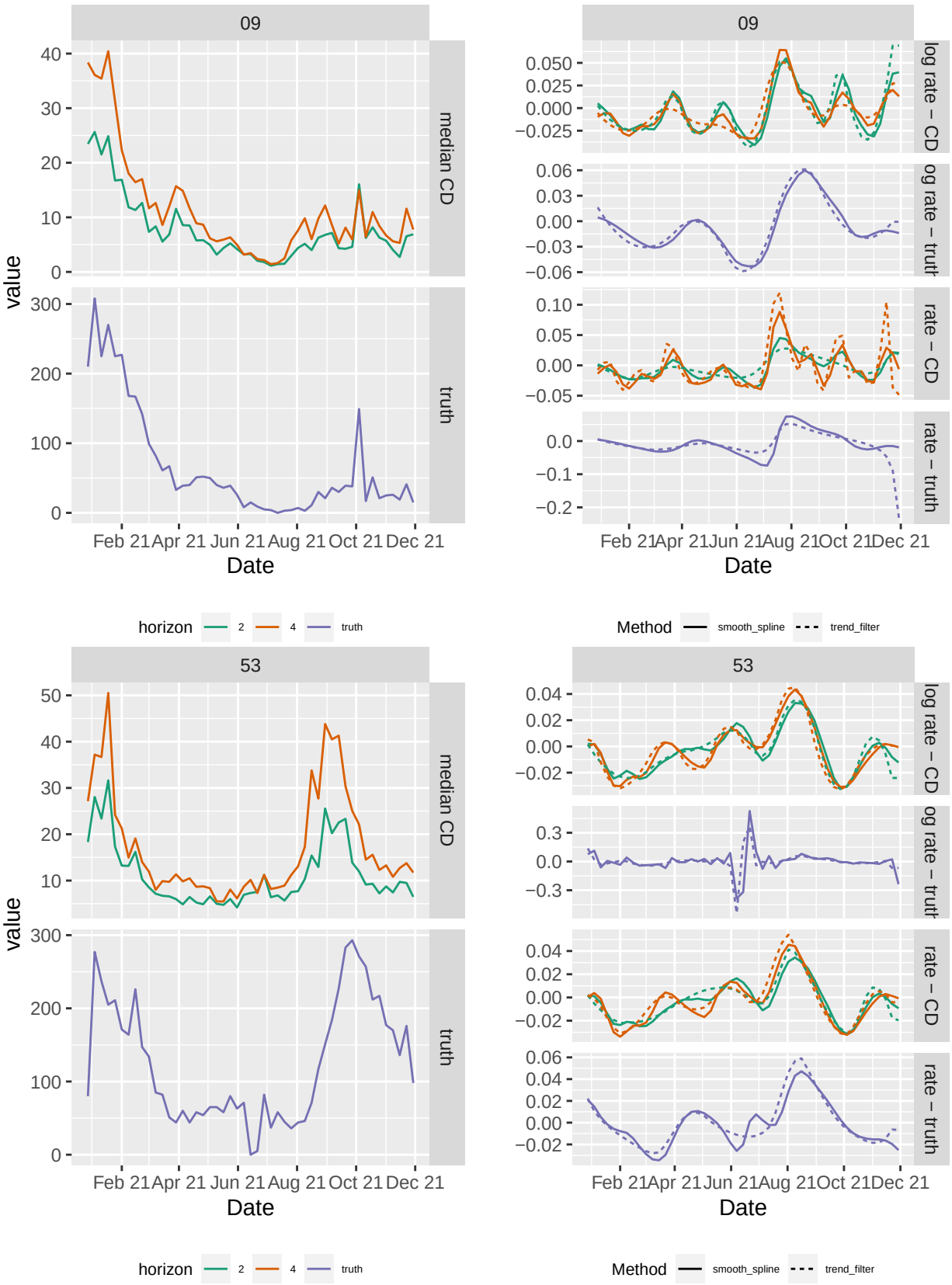

19
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
29

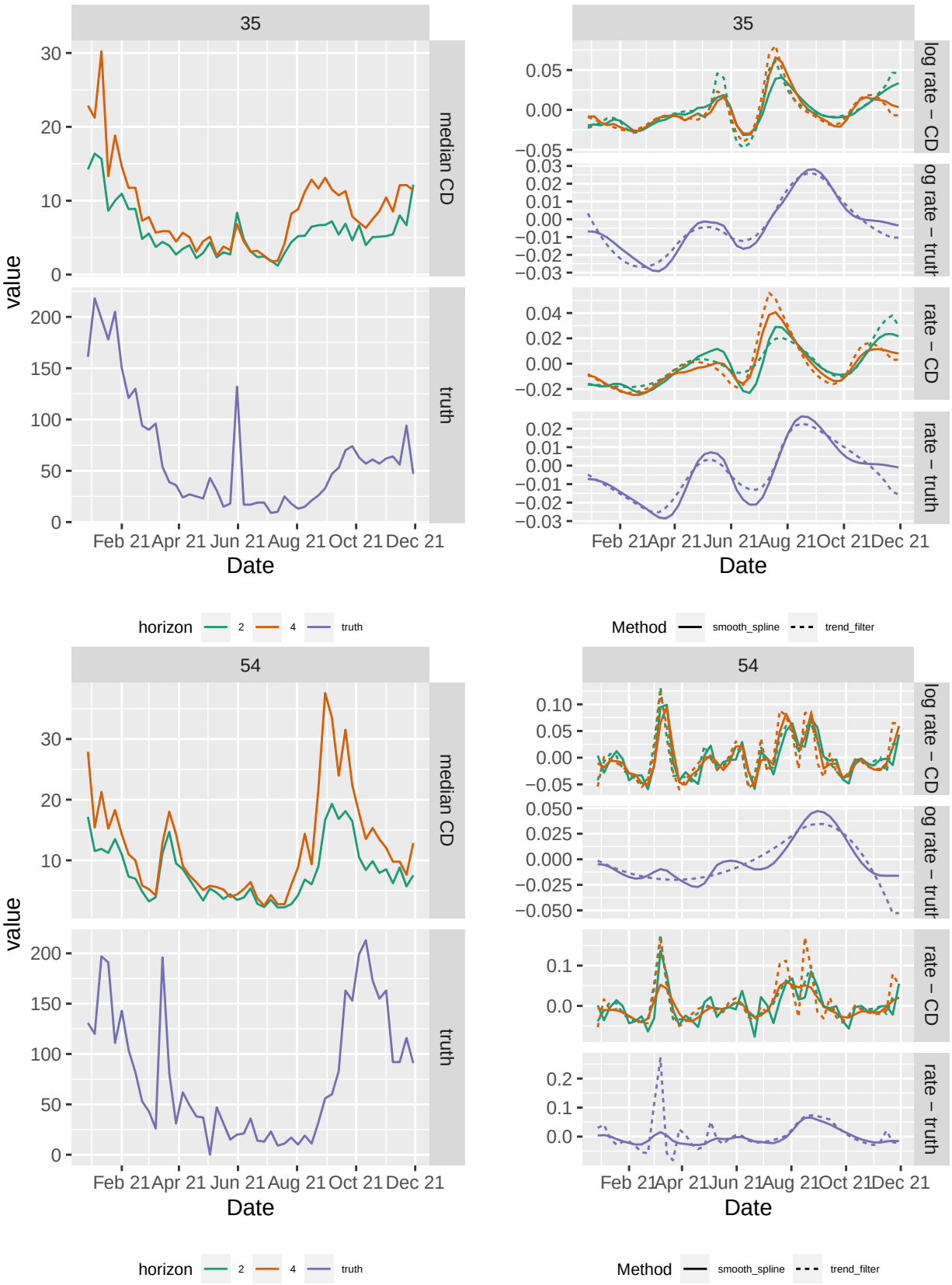

22
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
31

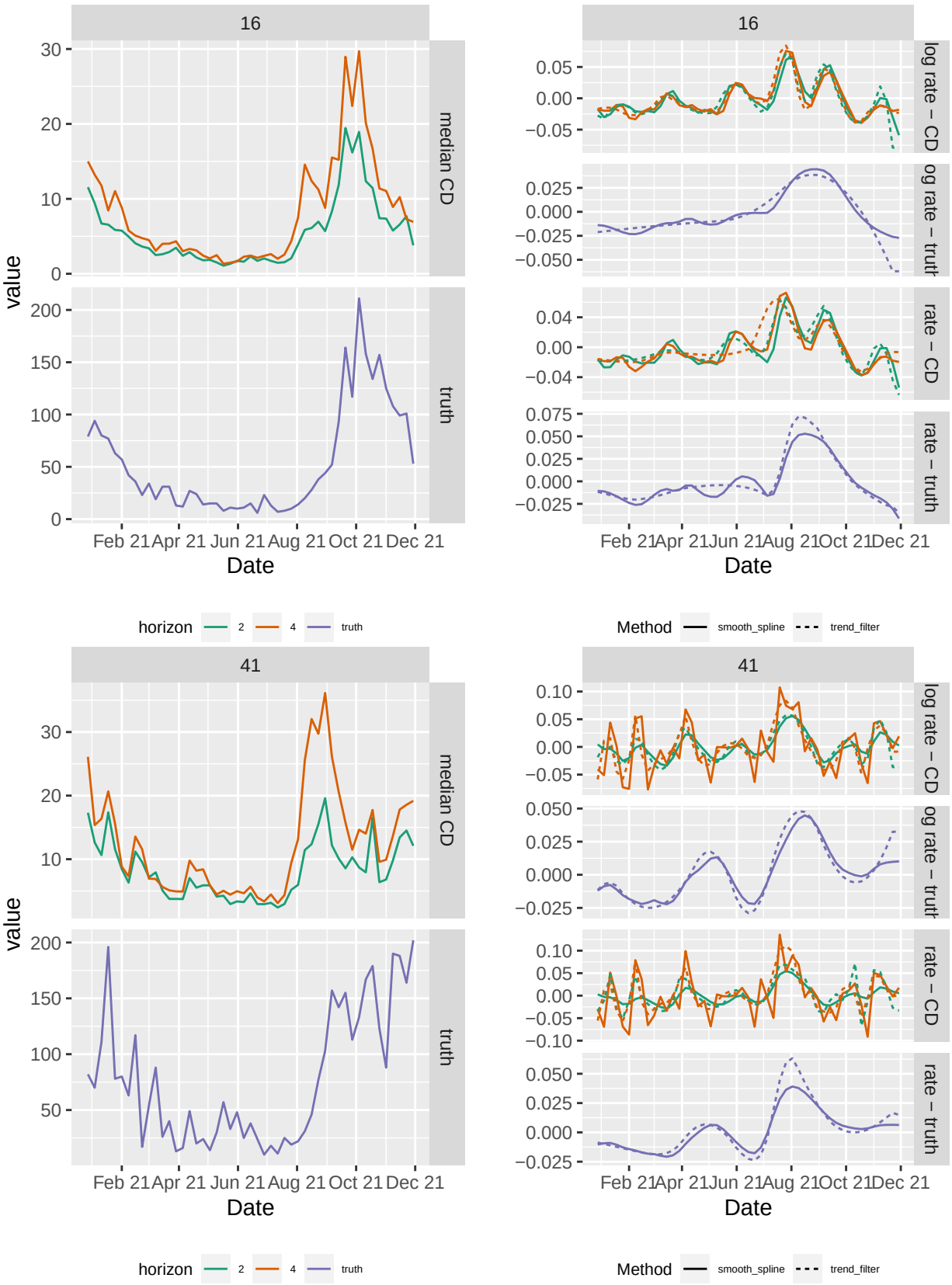

27
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
55

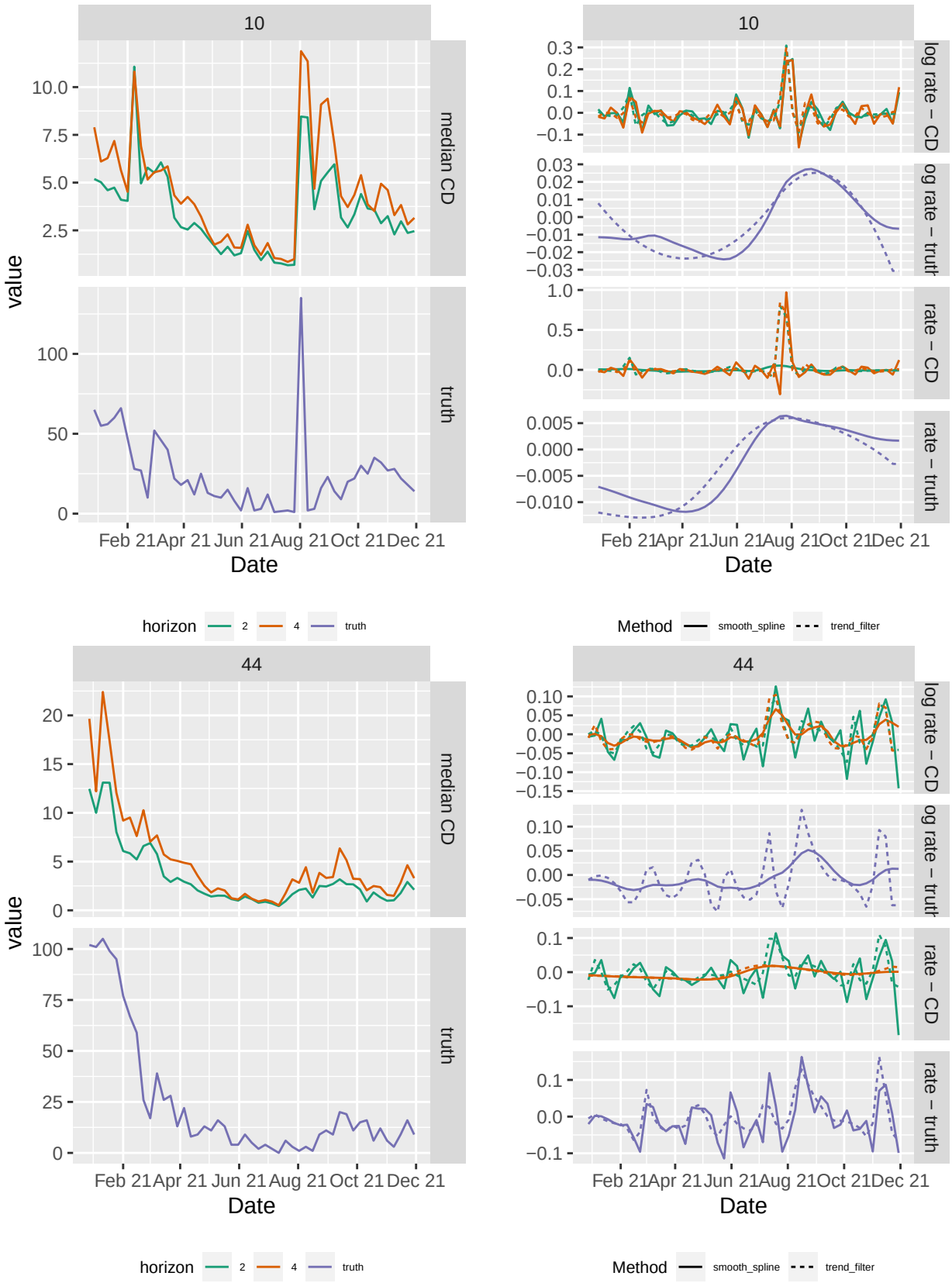
20
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
log rate – CD
og rate – truth
rate – CD
rate – truth
horizon
2
4
truth
Method
smooth_spline
trend_filter
28

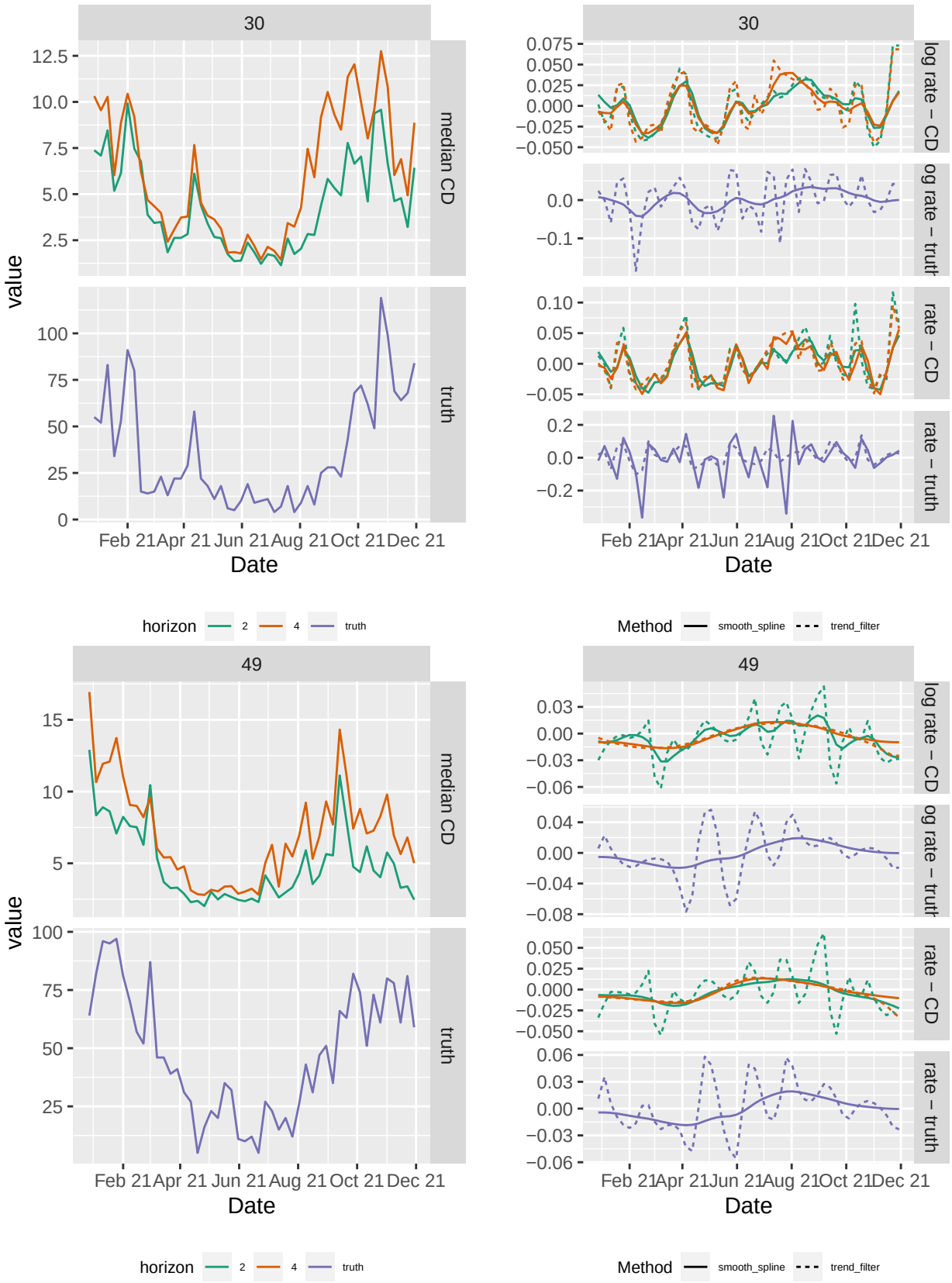

05
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
32

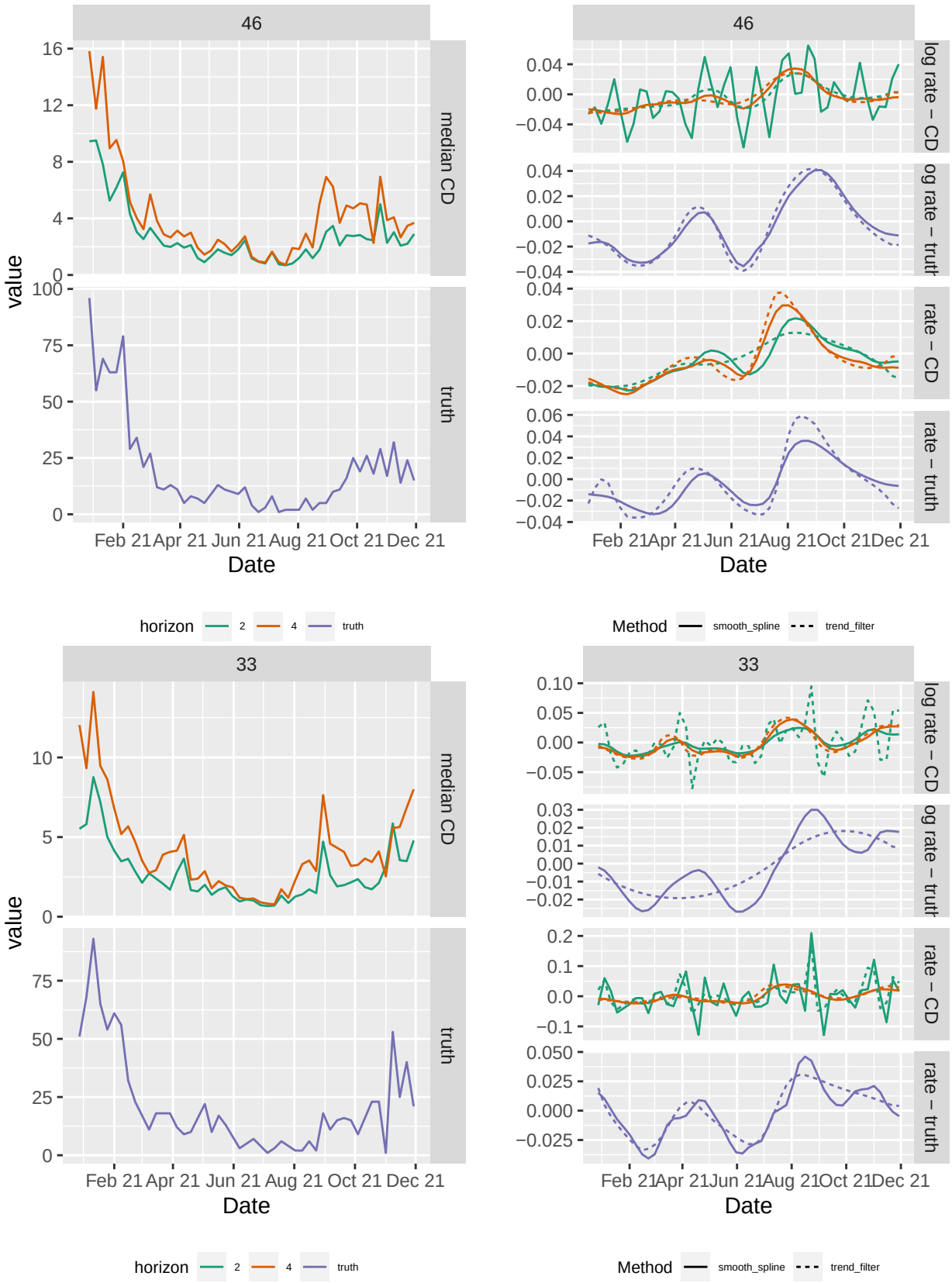

09
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
53

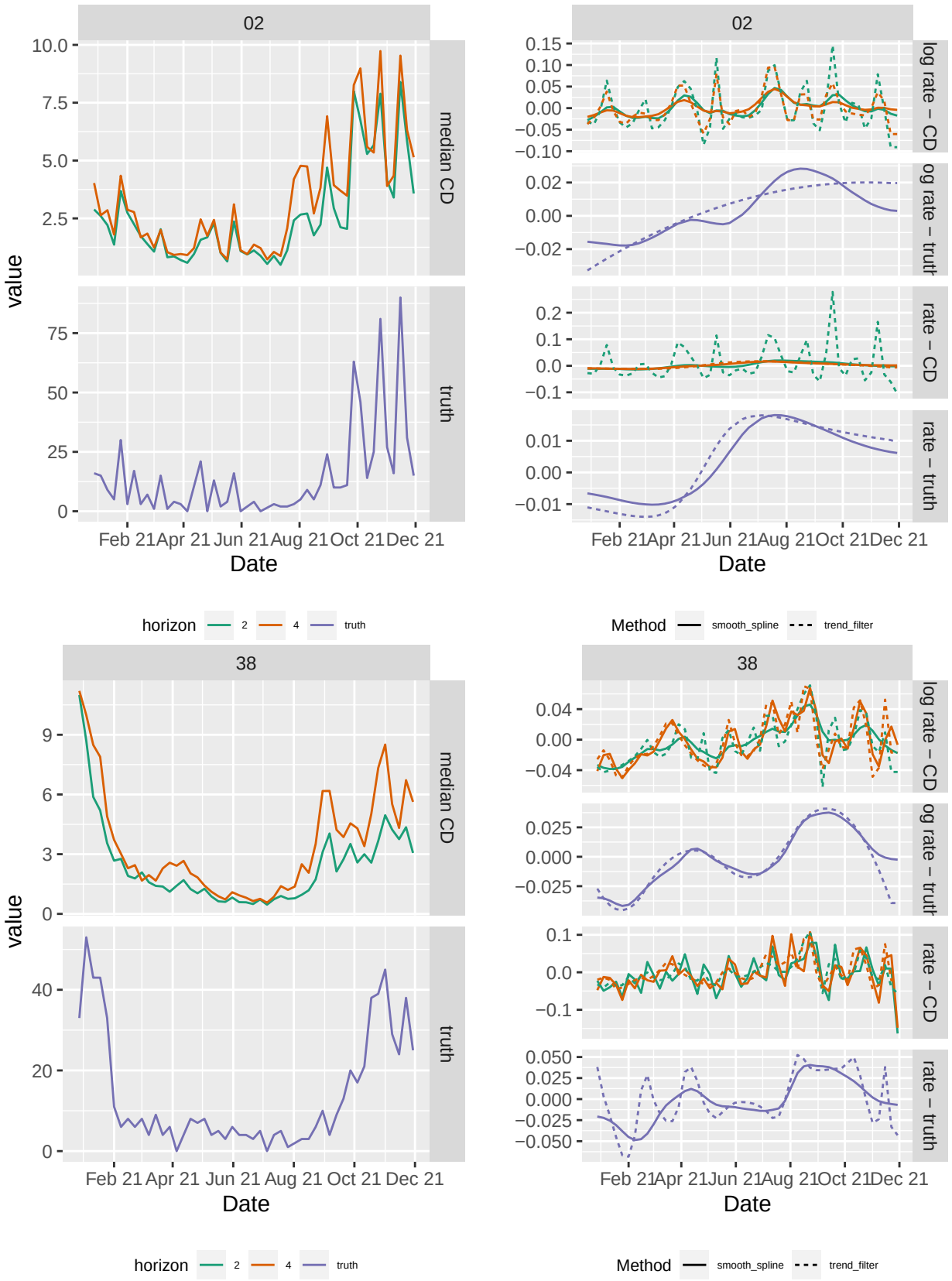

35
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
54

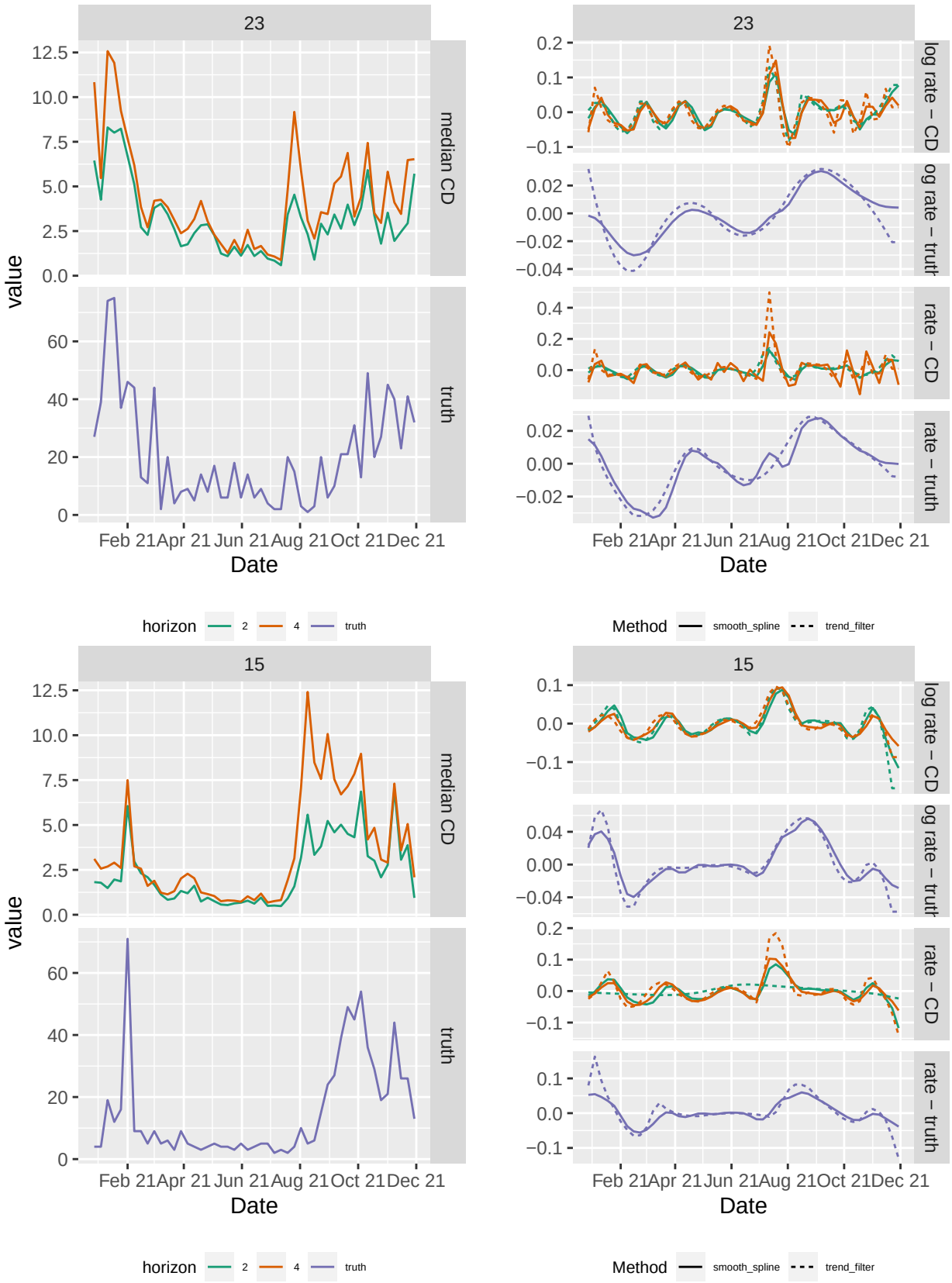

16
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
41

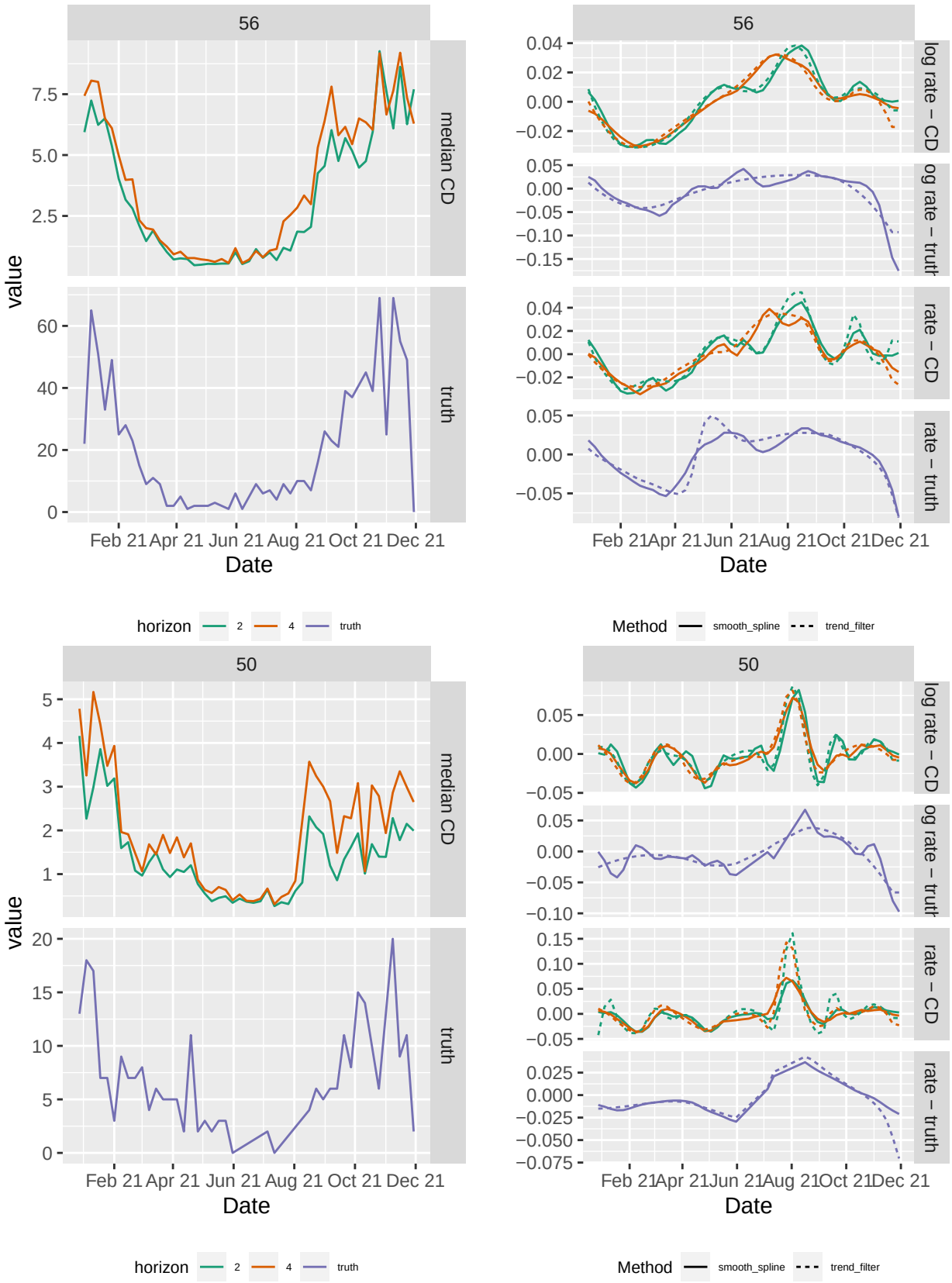

10
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
Method
smooth_spline
trend_filter
44


30
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
30
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
49
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
49
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter


46
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
33


02
median CD
truth
value
Date
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
log rate − CD
og rate − truth
rate − CD
rate − truth
horizon
2
4
truth
Method
smooth_spline
trend_filter
38


23
median CD
truth
value
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate – CD
og rate – truth
rate – CD
rate – truth
Method
smooth_spline
trend_filter
15


56
median CD
truth
value
7.5
5.0
2.5
60
40
20
0
Feb 21
Apr 21
Jun 21
Aug 21
Oct 21
Dec 21
Date
horizon
2
4
truth
log rate − CD
og rate − truth
rate − CD
rate − truth
0.04
0.02
0.00
−0.02
0.05
−0.05
−0.10
−0.15
Method
smooth_spline
trend_filter
50
5
4
3
2
1
20
15
10
0.15
0.10
0.025
0.000
−0.025
−0.050
−0.075