# CV-scores for initial models

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This file contains cross-validated RMSE on each time series for each model fit.

Each model is the combination of four components listed below:

a) Local level

b) Cycle

- cycle of frequency 52

- cycle of frequency 52 and frequency 26

- cycle of frequency 52, frequency 26, and frequency 13

c) Dummy variables:

- None

- Holiday effects: Christmas and Post Christmas

- Holiday effects: Christmas only

d) Transformation

- No

- log (lambda = 0)

- BoxCox paramater (lambda ~ 0.299)

1) Local level + cycle of frequency 52 + no dummy + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5198000       0.8662624        0.9500314   3.992358       2.871095
## 2 0.5735947       0.9909116        1.2169802   4.004186       3.335891
## 3 0.6241386       1.0915681        1.2939793   3.990119       4.043656
## 4 0.6673864       1.1826673        1.4844213   3.994178       4.520808
```

2) Local level + cycle of frequency 52 and frequency 26 + no dummy + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5143137       0.8585825         0.944717   3.993336       2.870048
## 2 0.5540991       0.9773541         1.204026   4.007571       3.333409
## 3 0.5895385       1.0744090         1.268948   4.003855       4.037838
## 4 0.6143297       1.1609931         1.446669   4.022420       4.508790
```

3) Local level + cycle of frequency 52 and frequency 26 and frequency 13 + no dummy + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5106255       0.8820252        0.9321005   3.992121       2.882798
## 2 0.5615257       1.0120531        1.1731703   3.996881       3.372629
## 3 0.6069322       1.1155050        1.2234211   3.979350       4.102629
## 4 0.6410063       1.2057424        1.3960998   3.988394       4.596523
```

4) Local level + cycle of frequency 52 + dummy (Christmas and post Christmas) + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5684776        0.8987632        0.9607845   3.992054       2.736236
## 2 0.6236160        1.0101274        1.1948716   4.001174       3.110337
## 3 0.6695082        1.1009253        1.2632386   3.988357       3.881405
## 4 0.7067609        1.1792117        1.4471528   3.993348       4.444315
```

5) Local level + cycle of frequency 52 and frequency 26 + dummy (Christmas and post Christmas) + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5012489        0.8772413        0.9471502   3.995212       2.734864
## 2 0.5444322        0.9905325        1.1738965   4.008144       3.102078
## 3 0.5761075        1.0852709        1.2328568   4.009243       3.868299
## 4 0.5918158        1.1628347        1.4137748   4.021789       4.427756
```

6) Local level + cycle freq 56 and 26 and 13 + dummy (Xmas and post Xmas) + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5317076        0.8664532        0.9292836   4.001823       2.745605
## 2 0.5809162        0.9919513        1.1440501   4.008275       3.127357
## 3 0.6188546        1.0968946        1.1986443   3.988082       3.911922
## 4 0.6423512        1.1852796        1.3798408   3.996549       4.494082
```

7) Local level + cycle of frequency 52 + dummy (none) + log transformation

```
##         fit     fit.1     fit.2     fit.3     fit.4
## 1 0.4116321 0.9260237 2.307823 3.297156 3.978851
## 2 0.4272129 1.0423511 2.446999 3.338938 4.107709
## 3 0.4390322 1.1332119 2.568993 3.380645 4.225405
## 4 0.4468590 1.2093230 2.691923 3.426940 4.325028
```

8) Local level + cycle of frequency 52 and 26 + dummy (none) + log transformation

```
##         fit     fit.1     fit.2     fit.3     fit.4
## 1 0.4408773 0.9239123 2.473702 3.353951 4.203830
## 2 0.4467364 1.0391200 2.639741 3.411076 4.383099
## 3 0.4478245 1.1281687 2.803187 3.468385 4.540678
## 4 0.4476025 1.2017872 2.954917 3.527486 4.675288
```

9) Local level + cycle of frequency 52 and 26 and 13 + dummy (none) + log transformation

```
##         fit     fit.1     fit.2     fit.3     fit.4
## 1 0.3831808 0.9269283 2.436087 3.313358 4.152042
## 2 0.3966435 1.0514716 2.680714 3.366640 4.313662
## 3 0.4027787 1.1549534 2.912009 3.432614 4.583860
## 4 0.4112057 1.2388461 3.169424 3.499120 4.822065
```

10) Local level + cycle of frequency 52 + dummy (Christmas and post Christmas) + log transformation

```
##         fit     fit.1     fit.2     fit.3     fit.4
## 1 0.4612771 0.9958117 2.317349 3.309608 4.052328
## 2 0.4638101 1.1045913 2.457641 3.350808 4.174019
## 3 0.4649748 1.1879192 2.582168 3.392124 4.282320
## 4 0.4646311 1.2517618 2.699381 3.434621 4.373989
```

11) Local level + cycle of frequency 52 and 26 + dummy (Christmas and post Christmas) + log transformation

```
##         fit     fit.1     fit.2     fit.3     fit.4
## 1 0.4547571 0.9997622 2.426843 3.349310 4.190316
## 2 0.4580359 1.1091779 2.590915 3.402034 4.363341
```

2

```
## 3 0.4594919 1.1933359 2.739369 3.455204 4.521636
## 4 0.4589881 1.2584057 2.877060 3.509277 4.663807
```

12) Local level + cycle of frequency 52 and 26 and 13 + dummy (Christmas and post Christmas) + log transformation

```
##          fit    fit.1    fit.2    fit.3    fit.4
## 1 0.4321325 1.000453 2.478307 3.345410 4.269520
## 2 0.4355754 1.111962 2.656742 3.400307 4.466231
## 3 0.4364899 1.196473 2.817782 3.456809 4.651424
## 4 0.4356540 1.260916 2.965114 3.515060 4.812863
```

13) Local level + cycle of frequency 52 + dummy (none) + power transformation

```
##          fit     fit.1    fit.2    fit.3    fit.4
## 1 0.4635118 0.8962027 1.637638 3.192489 3.329550
## 2 0.4901835 0.9952957 1.726712 3.211578 3.531970
## 3 0.5050419 1.0747123 1.789169 3.228664 3.720656
## 4 0.5131166 1.1395731 1.847490 3.235301 3.869296
```

14) Local level + cycle of frequency 52 and 26 + dummy (none) + power transformation

```
##          fit     fit.1    fit.2    fit.3    fit.4
## 1 0.4573972 0.8904032 1.670493 3.223249 3.326523
## 2 0.4777697 0.9911276 1.760607 3.249459 3.530376
## 3 0.4878542 1.0714613 1.834563 3.273916 3.735991
## 4 0.4900542 1.1391202 1.909613 3.299338 3.900125
```

15) Local level + cycle of frequency 52 and 26 and 13 + dummy (none) + power transformation

```
##          fit     fit.1    fit.2    fit.3    fit.4
## 1 0.4307100 0.8977536 1.636126 3.212840 3.390474
## 2 0.4363340 0.9988381 1.726378 3.238006 3.596051
## 3 0.4420036 1.0736470 1.796254 3.260711 3.801980
## 4 0.4470828 1.1392634 1.869150 3.285960 3.948374
```

16) Local level + cycle of frequency 52 + dummy (Christmas and post Christmas) + power transformation

```
##          fit     fit.1    fit.2    fit.3    fit.4
## 1 0.4506491 0.9410089 1.609466 3.196310 3.386896
## 2 0.4546948 1.0339565 1.686854 3.216004 3.566335
## 3 0.4568812 1.1060579 1.748639 3.232367 3.731071
## 4 0.4579111 1.1620508 1.810409 3.250496 3.862251
```

17) Local level + cycle of frequency 52 and 26 + dummy (Christmas and post Christmas) + power transformation

```
##          fit     fit.1    fit.2    fit.3    fit.4
## 1 0.4416165 0.9318545 1.640954 3.225367 3.361578
## 2 0.4475360 1.0248198 1.728157 3.250721 3.550143
## 3 0.4526684 1.0965913 1.799055 3.273695 3.728700
## 4 0.4574426 1.1523051 1.867764 3.297590 3.867984
```

18) Local level + cycle of frequency 52 and 26 and 13 + dummy (Christmas and post Christmas) + power transformation

```
##          fit     fit.1    fit.2    fit.3    fit.4
## 1 0.4251960 0.9320868 1.636361 3.218557 3.408662
## 2 0.4321560 1.0280232 1.727430 3.242435 3.609885
## 3 0.4364302 1.1006859 1.802592 3.265382 3.797627
## 4 0.4387873 1.1559658 1.876837 3.290477 3.940573
```

19) Local level + cycle of frequency 52 + dummy (Christmas only) + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5810370        0.886312        0.9709614   3.994995       2.829626
## 2 0.6290346        1.002220        1.2238185   3.997626       3.237777
## 3 0.6705232        1.095980        1.2965062   3.985684       3.962695
## 4 0.7017475        1.182426        1.4867489   3.991550       4.459868
```

20) Local level + cycle of frequency 52 + freq 26 + dummy (Christmas) + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5103409       0.8641093        0.9546304   4.001055       2.830432
## 2 0.5567190       0.9812799        1.1969966   4.010222       3.231558
## 3 0.5853365       1.0744239        1.2517738   4.006694       3.949310
## 4 0.6047262       1.1459970        1.4191589   4.032817       4.431940
```

21) Local level + cycle of frequency 52 +freq 26 +freq 13 + dummy (Christmas) + no transformation

```
##     wili_jfk wili_ny_upstate wiki_common_cold wiki_cough wiki_influenza
## 1 0.5184985       0.8728094        0.9416501   4.001864       2.837331
## 2 0.5746628       1.0020328        1.1667560   4.013466       3.264001
## 3 0.6130351       1.1066089        1.2095580   3.998378       4.002292
## 4 0.6374341       1.1973335        1.3789878   4.001497       4.511483
```

22) Local level + cycle of frequency 52 + dummy (Christmas ) + log transformation

```
##          fit      fit.1     fit.2     fit.3     fit.4
## 1 0.4545061 0.9603088 2.340482 3.311970 4.060744
## 2 0.4570957 1.0707440 2.481953 3.354583 4.184208
## 3 0.4584601 1.1586682 2.609606 3.397731 4.292451
## 4 0.4584894 1.2273866 2.732091 3.442326 4.390097
```

23) Local level + cycle of frequency 52 +freq 26 + dummy (Christmas) + log transformation

```
##          fit      fit.1     fit.2     fit.3     fit.4
## 1 0.4477072 0.9631712 2.458732 3.354000 4.207351
## 2 0.4510553 1.0737105 2.623942 3.408873 4.381676
## 3 0.4526994 1.1617869 2.778115 3.464644 4.543894
## 4 0.4524218 1.2306675 2.922196 3.521404 4.688938
```

24) Local level + cycle of frequency 52 +freq 26 +freq 13 + dummy (Christmas) + log transformation

```
##          fit      fit.1     fit.2     fit.3     fit.4
## 1 0.4258918 0.9657836 2.490099 3.346841 4.285271
## 2 0.4301774 1.0790560 2.671674 3.403808 4.481305
## 3 0.4311385 1.1686172 2.839351 3.462725 4.666597
## 4 0.4305829 1.2378169 2.992440 3.523340 4.828946
```

25) Local level + cycle of frequency 52 + dummy (Christmas) + power transformation

```
##          fit      fit.1     fit.2     fit.3     fit.4
## 1 0.4478358 0.9150378 1.635347 3.199470 3.340218
## 2 0.4537959 1.0078634 1.715157 3.219784 3.524208
## 3 0.4554521 1.0834295 1.774152 3.237366 3.695015
## 4 0.4566135 1.1429569 1.832654 3.257154 3.828358
```

26) Local level + cycle of frequency 52 +freq 26 + dummy (Christmas) + power transformation

```
##          fit      fit.1     fit.2     fit.3     fit.4
## 1 0.4488568 0.9055191 1.675559 3.231006 3.324232
## 2 0.4543283 0.9976040 1.768234 3.258373 3.523448
```

```
## 3 0.4585809 1.0719106 1.840405 3.283877 3.711739
## 4 0.4605031 1.1303575 1.913665 3.310354 3.858976
```

27) Local level + cycle of frequency 52 +freq 26 +freq 13 + dummy (Christmas) + power transformation

```
##           fit      fit.1    fit.2    fit.3    fit.4
## 1 0.4237087 0.9092008 1.652904 3.221534 3.381917
## 2 0.4302290 1.0044650 1.746278 3.247147 3.587828
## 3 0.4347215 1.0791505 1.823182 3.271605 3.782194
## 4 0.4374066 1.1369537 1.898893 3.298368 3.931991
```