From newer to older

# Validation set: last 16 days of train

## Full series (no STL)

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Model = D-Linear (global, all features)

MAE: mean = 1615.91, sd = 793.19, min = 457.73, max = 4376.14

MSE: mean = 5324438.3, sd = 5717716.84, min = 361276.21, max = 30947683.03

RMSE: mean = 2061.91, sd = 1035.83, min = 601.06, max = 5563.06

RMSLE: mean = 0.17, sd = 0.06, min = 0.1, max = 0.33

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## STL = 731 trend, 7 period, 29 season, robust

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Model = Linear

MAE: mean = 2498.97, sd = 2261.83, min = 593.47, max = 14263.91

MSE: mean = 14619467.59, sd = 31080983.43, min = 510608.47, max = 212857246.5

RMSE: mean = 2995.64, sd = 2376.06, min = 714.57, max = 14589.63

RMSLE: mean = 0.24, sd = 0.18, min = 0.1, max = 1.46

--------

Model = Linear + AutoARIMA

MAE: mean = 2236.88, sd = 2103.15, min = 469.25, max = 14263.91

MSE: mean = 12092722.98, sd = 29672322.47, min = 329555.51, max = 212857272.74

RMSE: mean = 2674.05, sd = 2223.1, min = 574.07, max = 14589.63

RMSLE: mean = 0.21, sd = 0.18, min = 0.09, max = 1.46

--------

Model = Linear + RF

MAE: mean = 2274.33, sd = 2121.06, min = 501.06, max = 14263.91

MSE: mean = 12376189.48, sd = 30138973.13, min = 450961.87, max = 212857246.5

RMSE: mean = 2720.36, sd = 2230.65, min = 671.54, max = 14589.63

RMSLE: mean = 0.22, sd = 0.18, min = 0.1, max = 1.46

--------

Model = Linear + RNN (global)

MAE: mean = 4018.5, sd = 2339.78, min = 724.95, max = 13003.85

MSE: mean = 24781640.23, sd = 31415166.22, min = 822821.64, max = 177950596.72

RMSE: mean = 4343.38, sd = 2432.42, min = 907.1, max = 13339.81

RMSLE: mean = 0.35, sd = 0.16, min = 0.13, max = 1.21

--------

Model = D-Linear (global, time features only)

MAE: mean = 1757.51, sd = 914.23, min = 619.43, max = 4945.73

MSE: mean = 6593697.38, sd = 7800135.91, min = 596963.55, max = 42194209.63

RMSE: mean = 2258.88, sd = 1221.12, min = 772.63, max = 6495.71

RMSLE: mean = 0.18, sd = 0.05, min = 0.11, max = 0.34

--------

Model = D-Linear (global, time) + AutoARIMA

MAE: mean = 1768.95, sd = 921.87, min = 582.32, max = 4447.62

MSE: mean = 6454297.8, sd = 7373902.69, min = 520483.77, max = 37656960.56

RMSE: mean = 2234.44, sd = 1208.96, min = 721.45, max = 6136.53

RMSLE: mean = 0.18, sd = 0.06, min = 0.09, max = 0.39

--------

Model = D-Linear (global, time) + RF

MAE: mean = 1721.45, sd = 824.37, min = 576.62, max = 5201.88

MSE: mean = 5996801.57, sd = 7091137.23, min = 598676.16, max = 45118951.09

RMSE: mean = 2190.79, sd = 1094.19, min = 773.74, max = 6717.06

RMSLE: mean = 0.18, sd = 0.06, min = 0.1, max = 0.33

--------

Model = D-Linear (global, time) + RNN (global)

MAE: mean = 3195.12, sd = 956.62, min = 1209.65, max = 6100.94

MSE: mean = 14162666.21, sd = 9714075.9, min = 2074590.7, max = 56691847.29

RMSE: mean = 3585.48, sd = 1143.23, min = 1440.34, max = 7529.4

RMSLE: mean = 0.3, sd = 0.13, min = 0.13, max = 0.77

--------

Chart

Description automatically generated

## STL = 731 trend, 7 period, 7 season, robust

--------

Model = Linear

MAE: mean = 2541.83, sd = 2265.95, min = 585.99, max = 14263.91

MSE: mean = 14852804.28, sd = 31210230.21, min = 502822.28, max = 212857261.81

RMSE: mean = 3026.05, sd = 2386.59, min = 709.1, max = 14589.63

RMSLE: mean = 0.24, sd = 0.18, min = 0.1, max = 1.46

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NameError: name 'pred\_arima\_store' is not defined

Model = Linear + RF

MAE: mean = 2307.39, sd = 2044.63, min = 643.83, max = 14263.91

MSE: mean = 12311245.99, sd = 29661918.39, min = 682954.06, max = 212857261.81

RMSE: mean = 2756.98, sd = 2170.32, min = 826.41, max = 14589.63

RMSLE: mean = 0.22, sd = 0.18, min = 0.1, max = 1.46

--------

## STL = 365 trend, 7 period, 7 season, robust

Chart

Description automatically generated

--------

Model = Linear

MAE: mean = 2574.11, sd = 2320.21, min = 565.7, max = 14363.31

MSE: mean = 15282514.67, sd = 31944428.03, min = 481391.93, max = 215717846.81

RMSE: mean = 3054.69, sd = 2439.55, min = 693.82, max = 14687.34

RMSLE: mean = 0.24, sd = 0.18, min = 0.1, max = 1.49

--------

Model = Linear + AutoARIMA

MAE: mean = 2418.88, sd = 2165.36, min = 469.26, max = 13661.93

MSE: mean = 13415198.13, sd = 28677635.9, min = 331619.62, max = 194849443.87

RMSE: mean = 2856.83, sd = 2292.1, min = 575.86, max = 13958.85

RMSLE: mean = 0.22, sd = 0.16, min = 0.1, max = 1.34

--------

Model = Linear + RF

MAE: mean = 2430.74, sd = 2186.07, min = 621.71, max = 14128.46

MSE: mean = 13644893.63, sd = 30521109.55, min = 709783.93, max = 209631653.75

RMSE: mean = 2883.23, sd = 2309.08, min = 842.49, max = 14478.66

RMSLE: mean = 0.23, sd = 0.18, min = 0.11, max = 1.44

--------

Model = Linear + RNN (global)

MAE: mean = 3447.46, sd = 2347.19, min = 658.85, max = 13022.09

MSE: mean = 20480562.63, sd = 30633838.45, min = 684625.23, max = 178250849.62

RMSE: mean = 3800.12, sd = 2457.57, min = 827.42, max = 13351.06

RMSLE: mean = 0.3, sd = 0.16, min = 0.11, max = 1.21

--------

Model = D-Linear (global)

MAE: mean = 1904.23, sd = 930.02, min = 615.27, max = 4970.5

MSE: mean = 7476786.19, sd = 8258702.41, min = 597006.38, max = 43317017.76

RMSE: mean = 2439.63, sd = 1234.91, min = 772.66, max = 6581.57

RMSLE: mean = 0.2, sd = 0.06, min = 0.12, max = 0.39

--------

Model = D-Linear + RNN (global)

MAE: mean = 2587.08, sd = 895.17, min = 1278.47, max = 5565.12

MSE: mean = 10690007.03, sd = 8994791.97, min = 2391013.97, max = 50343528.25

RMSE: mean = 3063.27, sd = 1142.98, min = 1546.29, max = 7095.32

RMSLE: mean = 0.25, sd = 0.09, min = 0.13, max = 0.59

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## Baseline

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Model = Naive drift

MAE: mean = 2337.59, sd = 1141.09, min = 453.56, max = 5388.45

MSE: mean = 9532898.86, sd = 9673267.24, min = 340639.34, max = 39922897.06

RMSE: mean = 2778.01, sd = 1347.42, min = 583.64, max = 6318.46

RMSLE: mean = 0.24, sd = 0.08, min = 0.09, max = 0.49

--------

Model = Naive seasonal

MAE: mean = 2039.1, sd = 1039.65, min = 562.73, max = 5141.7

MSE: mean = 8877173.67, sd = 10126600.6, min = 473075.66, max = 49331038.61

RMSE: mean = 2631.9, sd = 1396.52, min = 687.8, max = 7023.61

RMSLE: mean = 0.22, sd = 0.07, min = 0.11, max = 0.36

--------

Model = Exponential smoothing

MAE: mean = 1771.99, sd = 975.24, min = 517.72, max = 4883.16

MSE: mean = 6943952.38, sd = 8438338.93, min = 506765.23, max = 40456253.77

RMSE: mean = 2293.39, sd = 1297.82, min = 711.87, max = 6360.52

RMSLE: mean = 0.18, sd = 0.05, min = 0.1, max = 0.35

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# Validation set: 2017

## STL = 365 trend, 7 period, 7 season, robust

--------

Model = Linear

MAE: mean = 2072.68, sd = 1556.98, min = 621.88, max = 9609.55

MSE: mean = 13505099.33, sd = 27006508.91, min = 892145.95, max = 186283233.07

RMSE: mean = 2947.06, sd = 2195.44, min = 944.53, max = 13648.56

RMSLE: mean = 0.77, sd = 0.87, min = 0.32, max = 7.07

--------

Model = Linear + AutoARIMA

MAE: mean = 2231.12, sd = 1699.52, min = 548.22, max = 9609.55

MSE: mean = 13054468.23, sd = 26373898.23, min = 581303.54, max = 186283214.04

RMSE: mean = 2897.09, sd = 2159.02, min = 762.43, max = 13648.56

RMSLE: mean = 0.73, sd = 0.87, min = 0.22, max = 7.07

--------

Model = Linear + RF

MAE: mean = 2330.0, sd = 1719.61, min = 592.78, max = 9609.55

MSE: mean = 15169178.78, sd = 28198825.95, min = 677384.54, max = 186283233.07

RMSE: mean = 3130.16, sd = 2317.6, min = 823.03, max = 13648.56

RMSLE: mean = 0.79, sd = 0.88, min = 0.3, max = 7.07

--------

Model = Linear + RNN (global)

MAE: mean = 2629.96, sd = 1390.25, min = 762.26, max = 8993.99

MSE: mean = 15303460.93, sd = 24028177.44, min = 1126629.43, max = 163453843.88

RMSE: mean = 3380.1, sd = 1969.36, min = 1061.43, max = 12784.91

RMSLE: mean = 0.73, sd = 0.36, min = 0.34, max = 3.31

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## STL = 85 trend, 7 period, 7 season, robust)

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Model = Linear (trend + seasonality feats)

MAE: mean = 2046.32, sd = 1539.36, min = 613.24, max = 9609.55

MSE: mean = 13563682.38, sd = 26863817.51, min = 898487.02, max = 186283233.07

RMSE: mean = 2962.48, sd = 2188.01, min = 947.89, max = 13648.56

RMSLE: mean = 0.78, sd = 0.87, min = 0.36, max = 7.07

--------

Model = Linear + AutoARIMA (calendar + cyclicality feats)

MAE: mean = 2124.35, sd = 1614.63, min = 557.05, max = 9609.55

MSE: mean = 12206346.55, sd = 25945482.03, min = 594005.27, max = 186283214.04

RMSE: mean = 2785.3, sd = 2109.14, min = 770.72, max = 13648.56

RMSLE: mean = 0.72, sd = 0.88, min = 0.2, max = 7.07

--------

Model = Linear + RF (calendar + cyclicality feats)

MAE: mean = 2092.38, sd = 1538.2, min = 573.96, max = 9609.55

MSE: mean = 13005342.68, sd = 26391260.62, min = 645534.17, max = 186283233.07

RMSE: mean = 2911.87, sd = 2127.53, min = 803.45, max = 13648.56

RMSLE: mean = 0.76, sd = 0.87, min = 0.32, max = 7.07

--------

Model = Linear + RNN (global) (calendar + cyclicality feats)

MAE: mean = 5485.38, sd = 1284.81, min = 3229.92, max = 10135.01

MSE: mean = 38436688.17, sd = 23497295.9, min = 13121037.03, max = 146031353.86

RMSE: mean = 5992.42, sd = 1589.83, min = 3622.3, max = 12084.34

RMSLE: mean = 0.9, sd = 0.69, min = 0.51, max = 5.86

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## Baseline

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Model = Naive drift

MAE: mean = 6363.13, sd = 3694.66, min = 1156.91, max = 21050.07

MSE: mean = 64192549.51, sd = 76134854.1, min = 2097909.98, max = 457287381.6

RMSE: mean = 7013.42, sd = 3873.57, min = 1448.42, max = 21384.28

RMSLE: mean = 0.95, sd = 0.86, min = 0.62, max = 7.07

--------

Model = Naive seasonal

MAE: mean = 3966.55, sd = 2940.74, min = 1012.22, max = 14603.02

MSE: mean = 33918822.51, sd = 50677321.75, min = 1744277.29, max = 234667386.71

RMSE: mean = 4777.28, sd = 3331.13, min = 1320.71, max = 15318.86

RMSLE: mean = 0.84, sd = 0.86, min = 0.63, max = 7.07

--------

Model = Exponential smoothing

MAE: mean = 3836.35, sd = 2810.97, min = 802.52, max = 17339.77

MSE: mean = 29501088.36, sd = 49408274.76, min = 1047947.49, max = 309188135.64

RMSE: mean = 4473.39, sd = 3080.57, min = 1023.69, max = 17583.75

RMSLE: mean = 0.85, sd = 0.86, min = 0.59, max = 7.07

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