From newer to older

# Validation set: last 16 days of train

Chart

Description automatically generated

## Full series (no STL)

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Model = D-Linear (global, all features)

MAE: mean = 1600.2577, sd = 801.3244, min = 492.6346, max = 4345.1654

MSE: mean = 5517059.0031, sd = 6307348.8066, min = 390232.4119, max = 33151775.8288

RMSE: mean = 2073.6542, sd = 1103.185, min = 624.6859, max = 5757.7579

RMSLE: mean = 0.1687, sd = 0.0539, min = 0.0997, max = 0.3337

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Model = TFT (global, all features, local & regional holiday error in training)

MAE: mean = 1262.733, sd = 676.1699, min = 383.7968, max = 3156.0067

MSE: mean = 3074339.0296, sd = 2976528.4363, min = 243829.9226, max = 13977659.8768

RMSE: mean = 1567.242, sd = 786.1879, min = 493.7914, max = 3738.6709

RMSLE: mean = 0.1415, sd = 0.0709, min = 0.0515, max = 0.353

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Model = TFT (global, all features)

MAE: mean = 1469.0391, sd = 853.5575, min = 481.0351, max = 4277.4793

MSE: mean = 4413098.1683, sd = 5043791.0104, min = 363269.4454, max = 22099265.4403

RMSE: mean = 1835.544, sd = 1021.7027, min = 602.7184, max = 4700.9856

RMSLE: mean = 0.1542, sd = 0.0627, min = 0.0663, max = 0.3259

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

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Model = Linear (time features only)

MAE: mean = 2511.7564, sd = 2258.5144, min = 598.3314, max = 14206.4418

MSE: mean = 14628335.9978, sd = 30947397.1564, min = 514776.9245, max = 211145503.821

RMSE: mean = 2997.6249, sd = 2375.4117, min = 717.4796, max = 14530.8466

RMSLE: mean = 0.2372, sd = 0.1755, min = 0.1057, max = 1.4614

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Model = Linear + linear

MAE: mean = 2260.4629, sd = 2020.5091, min = 558.5088, max = 14206.4418

MSE: mean = 12034271.1563, sd = 29042345.7087, min = 432947.2359, max = 211145504.3472

RMSE: mean = 2734.0291, sd = 2135.2649, min = 657.9873, max = 14530.8466

RMSLE: mean = 0.2224, sd = 0.1764, min = 0.1047, max = 1.4614

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Model = Linear + AutoARIMA

MAE: mean = 2365.3748, sd = 2160.7664, min = 529.7516, max = 14206.4418

MSE: mean = 13240588.3643, sd = 30127632.0882, min = 408764.0225, max = 211145504.0641

RMSE: mean = 2829.0974, sd = 2288.4048, min = 639.3466, max = 14530.8466

RMSLE: mean = 0.2239, sd = 0.175, min = 0.0984, max = 1.4614

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Model = Linear (trend + seasonality) + RF (remainder)

MAE: mean = 2397.1323, sd = 2238.5964, min = 570.2938, max = 14206.4418

MSE: mean = 14113144.495, sd = 30930782.8458, min = 444719.8924, max = 211145503.8305

RMSE: mean = 2880.878, sd = 2411.1587, min = 666.8732, max = 14530.8466

RMSLE: mean = 0.2224, sd = 0.1764, min = 0.0928, max = 1.4614

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Model = Linear + RNN (global)

MAE: mean = 2232.1061, sd = 2065.9403, min = 608.5556, max = 14208.1535

MSE: mean = 12084955.8576, sd = 29478297.8336, min = 526218.5911, max = 211180117.0558

RMSE: mean = 2696.6871, sd = 2193.8173, min = 725.4093, max = 14532.0376

RMSLE: mean = 0.219, sd = 0.1781, min = 0.094, max = 1.4617

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

MAE: mean = 2037.3991, sd = 1193.0949, min = 622.5164, max = 5979.9464

MSE: mean = 8891668.0128, sd = 10957331.0073, min = 678799.8009, max = 56311677.094

RMSE: mean = 2583.3276, sd = 1489.3242, min = 823.8931, max = 7504.1107

RMSLE: mean = 0.2009, sd = 0.0483, min = 0.1171, max = 0.3265

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Model = D-Linear + linear

MAE: mean = 1818.1418, sd = 973.7656, min = 630.2861, max = 5268.6488

MSE: mean = 7286736.7197, sd = 8721704.8131, min = 544459.7534, max = 47754719.8946

RMSE: mean = 2362.6279, sd = 1305.6515, min = 737.8752, max = 6910.479

RMSLE: mean = 0.1854, sd = 0.0485, min = 0.1072, max = 0.329

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Model = D-Linear (global) + AutoARIMA

MAE: mean = 1910.5009, sd = 1171.8067, min = 536.2856, max = 6138.3636

MSE: mean = 8163077.1726, sd = 10987995.6823, min = 513327.3527, max = 57579060.0013

RMSE: mean = 2435.6618, sd = 1493.529, min = 716.4687, max = 7588.0867

RMSLE: mean = 0.1854, sd = 0.0427, min = 0.1074, max = 0.3361

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Model = D-Linear (trend + seasonality, global) + RF (remainder)

MAE: mean = 1906.0926, sd = 1227.4808, min = 548.4679, max = 6002.3761

MSE: mean = 8616092.7405, sd = 12272894.8791, min = 512139.8297, max = 58314455.9086

RMSE: mean = 2448.1816, sd = 1619.4133, min = 715.6395, max = 7636.3902

RMSLE: mean = 0.1816, sd = 0.0485, min = 0.1009, max = 0.3616

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

MAE: mean = 1816.2007, sd = 1015.0604, min = 592.3175, max = 5626.5688

MSE: mean = 7326077.6273, sd = 9137053.8235, min = 580982.6589, max = 51565299.8883

RMSE: mean = 2347.4992, sd = 1347.3399, min = 762.2222, max = 7180.8983

RMSLE: mean = 0.1844, sd = 0.0533, min = 0.0993, max = 0.3335

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## Baseline

Store sales prediction scores, baseline models

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Model = Naive drift

MAE: mean = 2328.177, sd = 1136.4971, min = 451.7328, max = 5366.7402

MSE: mean = 9456240.9585, sd = 9595478.7352, min = 337899.9963, max = 39601845.7175

RMSE: mean = 2766.8203, sd = 1341.9935, min = 581.2917, max = 6292.9997

RMSLE: mean = 0.2362, sd = 0.0814, min = 0.0947, max = 0.4938

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Model = Naive seasonal

MAE: mean = 2030.8822, sd = 1035.465, min = 560.4581, max = 5120.9853

MSE: mean = 8805785.35, sd = 10045164.6608, min = 469271.2874, max = 48934329.0129

RMSE: mean = 2621.2977, sd = 1390.8932, min = 685.0338, max = 6995.3076

RMSLE: mean = 0.2171, sd = 0.0672, min = 0.1109, max = 0.36

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Model = Exponential smoothing

MAE: mean = 1764.8952, sd = 970.2832, min = 530.253, max = 4860.8032

MSE: mean = 6891643.5112, sd = 8368370.5105, min = 516867.0186, max = 40144777.0205

RMSE: mean = 2285.0048, sd = 1292.4383, min = 718.9346, max = 6335.9906

RMSLE: mean = 0.1804, sd = 0.0519, min = 0.0991, max = 0.3466

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