

ภาคผนวก

ภาคผนวก ก

ข้อมูลความต้องการสินค้า ปี 2554-2556

ปริมาณความต้องการสินค้า ตั้งแต่เดือน ม.ค 2554 – มิ.ย 2556

| เดือน ที่ | ประเภทสินค้า | ความต้องการจริง (กิโลกรัม) 2554 | ความต้องการจริง (กิโลกรัม) 2555 | ความต้องการจริง (กิโลกรัม) 2556 |
|--------------|---------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 1 | BOS507CM | 50,108.05 | 28,002.87 | 76,638.29 |
| 2 | BOS507CM | 51,320.87 | 29,854.49 | 79,655.77 |
| 3 | BOS507CM | 66,545.40 | 44,332.26 | 90,282.29 |
| 4 | BOS507CM | 25,598.43 | 44,568.25 | 76,668.89 |
| 5 | BOS507CM | 15,188.61 | 64,466.74 | 85,185.43 |
| 6 | BOS507CM | 39,738.11 | 70,044.20 | 84,379.62 |
| 7 | BOS507CM | 53,170.96 | 62,652.88 | - |
| 8 | BOS507CM | 55,801.26 | 65,321.53 | - |
| 9 | BOS507CM | 62,452.69 | 67,557.08 | - |
| 10 | BOS507CM | 31,782.35 | 75,054.22 | - |
| 11 | BOS507CM | 13,587.80 | 66,537.64 | - |
| 12 | BOS507CM | 51,775.52 | 70,593.89 | - |
| | รวม(กิโลกรัม) | 517,070.06 | 688,986.05 | 492,810.29 |

ภาคผนวก ข

ผลการพยากรณ์ความต้องการสินค้าเพื่อหาดัชนี

การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน มี.ค. 2555

โดยวิธี Moving Average (MA)

| 08-18-2013 Month | Actual Data | Forecast by 3-MA | Forecast by 4-MA | Forecast by 5-MA | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|---------------------|---------------------|---------------------|-------------------|-------------|----------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | | | | |
| 4 | 25598.4300 | 55991.4400 | | | | | | | | | | |
| 5 | 15188.6100 | 47921.5600 | 48393.1900 | | | | | | | | | |
| 6 | 39738.1100 | 25777.4800 | 38963.3300 | 41752.2700 | | | | | | | | |
| 7 | 53170.9600 | 26841.7100 | 36767.6400 | 39678.2900 | 41416.5800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | | |
| 8 | 55801.2600 | 36032.5600 | 33424.0300 | 40048.3000 | 41927.0600 | 13874.2000 | 25628.5800 | 12614.2900 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6300 | 49570.1100 | 40974.7300 | 37899.4800 | 42673.7900 | 19778.9000 | 45407.4800 | 15125.8300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 57141.6400 | 52790.7500 | 45270.3300 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 50012.1000 | 50801.8100 | 48589.0700 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338492700.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 35940.9500 | 40906.0200 | 43359.0100 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 32381.8900 | 39893.5900 | 43079.3300 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8080 | -0.1248 | 0.0039 |
| 14 | 29854.4900 | 31122.0600 | 31287.1300 | 37520.2500 | 40567.0800 | -10712.5900 | -12687.8700 | 15192.8500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0150 |
| 15 | 36544.2900 | | 30895.1700 | 31000.6100 | | 36242.6200 | | | | | | |
| CFE | | -51680.4000 | -33553.5600 | -11030.8800 | -12687.8700 | | | | | | | |
| MAD | | 19021.8800 | 17595.9200 | 15051.2900 | 15192.8500 | | | | | | | |
| MSE | | 499605700.0000 | 442162800.0000 | 311228800.0000 | 271183300.0000 | | | | | | | |
| MAPE | | 77.0404 | 73.2401 | 54.8622 | 55.0674 | | | | | | | |
| Trk.Signal | | -2.7170 | -1.9069 | -0.7329 | -0.8351 | | | | | | | |
| R-square | | 0.4904 | 0.2154 | 0.0563 | 0.0150 | | | | | | | |
| | | m=3 | m=4 | m=5 | m=6 | | | | | | | |

โดยวิธี Single Exponential Smoothing (SES)

| 08-18-2013 Month | Actual Data | Forecast by SES | Forecast by SES | Forecast by SES | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|--------------------|--------------------|--------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 1212.8200 | 1212.8200 | 1470933.0000 | 2.3632 | 1.0000 | |
| 3 | 66545.4000 | 50229.3300 | 50350.6100 | 50471.5000 | 16073.5000 | 17286.3200 | 8643.1600 | 129914200.0000 | 13.2587 | 2.0000 | |
| 4 | 25598.4300 | 51860.9400 | 53589.5700 | 55293.9500 | -29695.5200 | -12409.2000 | 15660.6100 | 380550800.0000 | 47.5075 | -0.7924 | 0.0795 |
| 5 | 15188.6100 | 49234.6900 | 47991.3400 | 46385.2900 | -31196.6800 | -43605.8800 | 19544.6300 | 528721300.0000 | 86.9795 | -2.2311 | 0.3114 |
| 6 | 39738.1100 | 45830.8800 | 41430.8000 | 37026.2900 | 2711.8200 | -40894.0600 | 16178.0700 | 424447800.0000 | 70.9484 | -2.5277 | 0.3148 |
| 7 | 53170.9600 | 45220.8800 | 41092.2600 | 37839.8400 | 15331.1300 | -25562.9400 | 16036.9100 | 392880400.0000 | 63.9293 | -1.9540 | 0.2098 |
| 8 | 55801.2600 | 46015.8900 | 43508.0000 | 42439.1700 | 13362.0900 | -12200.8500 | 15654.7900 | 362261200.0000 | 58.2174 | -0.7794 | 0.1540 |
| 9 | 62452.6300 | 46994.4300 | 45966.6500 | 46447.8000 | 16004.8900 | 3804.0430 | 15638.5600 | 348998100.0000 | 54.1436 | 0.2423 | 0.1253 |
| 10 | 31782.3500 | 48540.2600 | 49263.8600 | 51249.2700 | -19466.9200 | -15662.8800 | 16117.2600 | 352272700.0000 | 54.9333 | -0.9718 | 0.1371 |
| 11 | 13587.8000 | 46084.4700 | 45767.5500 | 45403.1900 | -31021.3900 | -47484.2700 | 17687.6800 | 418354700.0000 | 72.8590 | -2.5846 | 0.1612 |
| 12 | 51775.5200 | 43536.8000 | 39321.6100 | 35962.7700 | 15912.7500 | -31571.5200 | 17526.3200 | 403342000.0000 | 69.0295 | -1.8014 | 0.1460 |
| 13 | 28002.8700 | 44360.6700 | 41820.3900 | 40636.6000 | -12633.7300 | -44205.2500 | 17118.6000 | 383031100.0000 | 67.0367 | -2.5823 | 0.1639 |
| 14 | 29854.4900 | 42724.8900 | 39056.8800 | 36946.4800 | -6991.9900 | -51197.2400 | 16339.6300 | 357327800.0000 | 63.6816 | -3.1333 | 0.1852 |
| 15 | 36544.2900 | 41437.8500 | 37216.4000 | 34748.8800 | | | | | | | |
| CFE | | -86702.0200 | -64458.2100 | -51197.2400 | | | | | | | |
| MAD | | 15740.3500 | 15836.7100 | 16339.6300 | | | | | | | |
| MSE | | 341602500.0000 | 343579900.0000 | 357327800.0000 | | | | | | | |
| MAPE | | 64.7129 | 63.3426 | 63.6816 | | | | | | | |
| Trk.Signal | | -5.5083 | -4.0702 | -3.1333 | | | | | | | |
| R-square | | 0.1801 | 0.1563 | 0.1852 | | | | | | | |
| | | Alpha=0.1 | Alpha=0.2 | Alpha=0.3 | | | | | | | |
| | | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | | | | | | | |

โดยวิธี Double Exponential Smoothing (DES)

| 08-18-2013 Month | Actual Data | Forecast by DES | Forecast by DES | Forecast by DES | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|--------------------|--------------------|--------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 1212.8200 | 1212.8200 | 1470933.0000 | 2.3632 | 1.0000 | |
| 3 | 66545.4000 | 50120.1800 | 50156.5600 | 50217.2100 | 16328.1900 | 17541.0100 | 8770.5060 | 134040400.0000 | 13.4501 | 2.0000 | |
| 4 | 25598.4300 | 50294.2500 | 50843.1600 | 51740.2300 | -26141.8000 | -8600.7890 | 14560.9400 | 317158200.0000 | 43.0076 | -0.5907 | 0.0307 |
| 5 | 15188.6100 | 50188.3000 | 50272.8000 | 50133.7500 | -34945.1400 | -43545.9300 | 19556.9900 | 543159400.0000 | 89.7744 | -2.2153 | 0.2875 |
| 6 | 39738.1100 | 49752.4800 | 48904.4000 | 46201.5100 | -4663.4020 | -50009.3300 | 17018.2700 | 442882600.0000 | 75.0725 | -2.9386 | 0.3124 |
| 7 | 53170.9600 | 49299.3200 | 47021.9700 | 43693.0100 | 9477.9530 | 40521.3800 | 15761.5500 | 394040800.0000 | 65.5313 | -2.5715 | 0.1775 |
| 8 | 55801.2600 | 48970.9700 | 46318.1800 | 43316.8600 | 12484.4100 | -28046.9700 | 15293.3900 | 351443600.0000 | 59.3658 | -1.8339 | 0.0933 |
| 9 | 62452.6300 | 48773.3200 | 46248.6700 | 44256.1400 | 16186.5900 | -39584.2200 | 15656.2800 | 348982400.0000 | 55.5872 | -0.6292 | 0.0420 |
| 10 | 31782.3500 | 48750.0100 | 46851.7100 | 46264.0800 | -14571.7200 | -24422.1500 | 15925.7800 | 333728300.0000 | 54.5051 | -1.5720 | 0.0613 |
| 11 | 13587.8000 | 48561.4600 | 46534.8800 | 46070.6100 | -32482.8100 | -58304.9600 | 17230.4800 | 409688800.0000 | 72.9605 | -3.3026 | 0.1232 |
| 12 | 51775.5200 | 48058.9900 | 45174.2200 | 43008.2600 | 8767.2580 | -48137.7000 | 16461.1000 | 379593300.0000 | 67.8671 | -2.9243 | 0.0914 |
| 13 | 28002.8700 | 47689.1600 | 44503.4600 | 42296.7600 | -14293.8900 | -62431.5900 | 16280.5000 | 361655600.0000 | 66.4652 | -3.8347 | 0.1233 |
| 14 | 29854.4900 | 47192.7300 | 43414.1400 | 40661.6800 | -10807.1900 | -73238.7800 | 15859.4700 | 342820300.0000 | 64.1371 | -4.6180 | 0.1512 |
| 15 | 36544.2900 | 46617.2500 | 42174.5900 | 38887.8400 | | | | | | | |
| CFE | | -112939.9000 | -91233.8400 | -73238.7800 | | | | | | | |
| MAD | | 15723.9700 | 15639.2300 | 15859.4700 | | | | | | | |
| MSE | | 35903200.0000 | 340331200.0000 | 342820300.0000 | | | | | | | |
| MAPE | | 66.6856 | 64.6833 | 64.1371 | | | | | | | |
| Trk.Signal | | -7.1827 | -5.8337 | -4.6180 | | | | | | | |
| R-square | | 0.2662 | 0.1901 | 0.1512 | | | | | | | |
| | | Alpha=0.1 | Alpha=0.2 | Alpha=0.3 | | | | | | | |
| | | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | | | | | | | |

การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.ย 2555

โดยวิธี Moving Average (MA)

| Month | Actual Data | Forecast by 3-MA | Forecast by 4-MA | Forecast by 5-MA | Forecast by 6-MA | Forecast by 7-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|-----------|-------------|------------------|------------------|------------------|------------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | | | | | |
| 4 | 25598.4300 | 55091.4400 | | | | | | | | | | | |
| 5 | 15188.6100 | 47821.5600 | 46393.1900 | | | | | | | | | | |
| 6 | 39738.1100 | 35777.4800 | 39663.3300 | 41752.2700 | | | | | | | | | |
| 7 | 53170.9600 | 26841.7100 | 36767.6400 | 39678.2900 | 41416.5800 | | | | | | | | |
| 8 | 95801.2600 | 36032.5600 | 32424.0300 | 40948.3000 | 41927.0600 | 43095.7800 | 12705.4800 | 12705.4800 | 12705.4800 | 161423300.0000 | 22.7632 | 1.0000 | |
| 9 | 62452.6900 | 49570.1100 | 40974.7300 | 37899.4000 | 42673.7900 | 43909.0900 | 18543.6000 | 31249.0800 | 15624.5400 | 252647200.0000 | 26.2307 | 2.0000 | |
| 10 | 31782.3500 | 57141.6400 | 52790.7500 | 45270.3300 | 41991.6800 | 45499.3500 | -13771.0000 | 17532.0800 | 14988.7000 | 231150200.0000 | 31.8735 | 1.1697 | 0.2025 |
| 11 | 13587.0800 | 58012.9100 | 45805.4300 | 42244.5200 | 43883.3600 | 39512.5600 | 30531.6400 | 47618.9700 | 16513.1400 | 353681300.0000 | 73.4816 | -0.5236 | 0.0231 |
| 12 | 51775.5200 | 39540.9500 | 40906.0200 | 43359.0100 | 42755.5300 | 38817.4000 | 12958.1200 | 3544.8030 | 16373.5200 | 317483600.0000 | 62.7988 | 0.2088 | 0.0194 |
| 13 | 28082.8700 | 32381.8900 | 39899.5800 | 43079.3300 | 44761.7700 | 44044.1000 | -16841.2300 | -12496.4300 | 16818.4700 | 387458500.0000 | 62.7064 | -0.7430 | 0.0317 |
| 14 | 29854.4900 | 31122.0600 | 31287.1300 | 37520.2500 | 40567.0800 | 42367.6300 | -12513.1400 | -25009.5700 | 16203.4200 | 285902500.0000 | 59.7380 | -1.5425 | 0.0436 |
| 15 | 44332.2600 | 36544.2900 | 38085.1700 | 31880.5100 | 36242.6200 | 38036.7100 | 6295.9510 | 19714.0200 | 14839.3400 | 252670100.0000 | 53.7621 | -1.3284 | 0.0422 |
| 16 | 44568.2500 | 34083.2100 | 38491.2800 | 33510.5900 | 33222.5500 | 37398.2800 | 7163.9630 | -12544.0500 | 13987.7200 | 231196500.0000 | 49.5761 | -0.8960 | 0.0411 |
| 17 | 64466.7400 | 39995.0000 | 36689.4600 | 39706.6800 | 35353.5400 | 34843.3600 | 29623.2000 | 17079.3300 | 15551.2900 | 295831300.0000 | 49.2136 | 1.0983 | 0.0530 |
| 18 | 70044.2000 | 51122.4200 | 45805.4300 | 42244.5200 | 43883.3600 | 39512.5600 | 30531.6400 | 47618.9700 | 16513.1400 | 353681300.0000 | 48.7023 | 2.8150 | 0.0889 |
| 19 | 62652.8800 | 59653.0600 | 55852.8600 | 50653.1900 | 46878.1400 | 47777.7600 | 15075.1200 | 62686.9900 | 16759.9700 | 343146100.0000 | 46.6489 | 3.7402 | 0.1383 |
| 20 | 65321.5300 | 65721.2700 | 60433.0200 | 57212.8600 | 52653.1400 | 49131.3700 | 16189.8600 | 78875.9500 | 16716.1200 | 336912700.0000 | 44.9670 | 4.7186 | 0.1814 |
| 21 | 66006.2000 | 65621.3400 | 61410.7200 | 58964.3100 | 54462.9100 | | | | | | | | |
| CFE | | 12976.2100 | 45755.0600 | 86026.1400 | 96514.6400 | 78075.9500 | | | | | | | |
| MAD | | 15146.7700 | 15755.9400 | 15719.2400 | 15719.2400 | 15719.2400 | | | | | | | |
| MSE | | 339368800.0000 | 379423300.0000 | 313111200.0000 | 307682200.0000 | 336912700.0000 | | | | | | | |
| MAPE (%) | | 56.4429 | 54.5362 | 43.8894 | 43.6711 | 44.3670 | | | | | | | |
| Tk.Signal | | 0.8031 | 5.3705 | 5.5346 | 5.6384 | 4.7186 | | | | | | | |
| R-square | | 0.4091 | 0.2725 | 0.2855 | 0.2359 | 0.1814 | | | | | | | |
| | | m=3 | m=4 | m=5 | m=6 | m=7 | | | | | | | |

โดยวิธี Single Exponential Smoothing (SES)

| Month | Actual Data | Forecast by SES | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square | |
|-----------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|------------|----------------|--------------|----------|-----------------|----------|--|
| 1 | 50108.0500 | | | | | | | | | | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 1212.8200 | 1212.8200 | 1470933.0000 | 2.3632 | 1.0000 | | |
| 3 | 66545.4000 | 50229.3300 | 50350.5100 | 50471.9000 | 50593.1800 | 50714.4600 | 50835.7400 | 50957.0200 | 51078.3100 | 51199.5900 | 51320.8700 | 51442.1500 | 51563.4300 | 16243.3000 | 17456.0900 | 132657800.0000 | 13.3863 | 2.0000 | | | |
| 4 | 25598.4300 | 51889.9400 | 53589.5700 | 55293.9500 | 56974.0700 | 58629.5300 | 60261.5400 | 61868.8900 | 63451.9800 | 65018.2000 | 66545.4000 | 68071.6200 | 69578.8400 | 39142.3900 | 39142.3900 | 22962.0000 | 154.6636 | 0.0442 | | | |
| 5 | 15188.6100 | 45238.8800 | 47991.3400 | 49385.2900 | 50442.8100 | 51114.1800 | 51463.6700 | 51479.5700 | 51185.1400 | 50639.6700 | 50000.0000 | 49275.0000 | 48000.0000 | 29539.6700 | 14291.0600 | 3726.0000 | 19.8140 | 0.0000 | | | |
| 6 | 39738.1100 | 45830.8800 | 41430.8800 | 37025.2900 | 32729.7300 | 28651.2800 | 24696.6300 | 21575.9000 | 18784.7200 | 16623.7200 | 14514.3900 | 12414.3900 | 10314.3900 | 1446.0000 | 1446.0000 | 1446.0000 | 11.6667 | 0.0000 | | | |
| 7 | 53170.9600 | 45220.8800 | 41052.2600 | 37833.8400 | 35533.0800 | 34194.7500 | 33802.3200 | 34289.4500 | 35547.4300 | 37426.6700 | 39474.2000 | 41471.8300 | 43420.0000 | 165.0000 | 165.0000 | 165.0000 | 0.3077 | 0.0000 | | | |
| 8 | 95801.2600 | 46015.8900 | 43588.0000 | 42439.1700 | 42588.2300 | 43862.8600 | 45423.5000 | 47066.5100 | 48646.2500 | 50196.3000 | 51596.3000 | 52976.3000 | 54356.3000 | 4294.7310 | 580.0000 | 4294.7310 | 4.5384 | 0.0000 | | | |
| 9 | 62452.6900 | 46594.4200 | 42566.5500 | 40447.8600 | 42783.4500 | 45742.8600 | 49158.1600 | 52312.8400 | 54576.2600 | 56300.0000 | 57600.0000 | 58600.0000 | 59200.0000 | 1252.0000 | 1252.0000 | 1252.0000 | 2.0000 | 0.0000 | | | |
| 10 | 31782.3500 | 46548.2600 | 42563.8600 | 41249.2600 | 42705.1400 | 45697.3800 | 50131.6800 | 55710.7300 | 60676.2100 | 65451.5000 | 70000.0000 | 74500.0000 | 78900.0000 | 1500.0000 | 1500.0000 | 1500.0000 | 4.7239 | 0.0000 | | | |
| 11 | 13587.0800 | 46864.4700 | 45767.5600 | 45409.1900 | 44936.0300 | 44339.8600 | 43222.0800 | 42322.0800 | 41608.0700 | 41000.0000 | 40400.0000 | 39800.0000 | 39200.0000 | 2190.0000 | 2190.0000 | 2190.0000 | 16.1290 | 0.0000 | | | |
| 12 | 51775.5200 | 43536.8800 | 39231.6100 | 35862.7700 | 32396.7400 | 28763.8300 | 25081.5100 | 21593.7200 | 18398.4600 | 15706.8900 | 13608.6300 | 11900.0000 | 10300.0000 | 3068.6300 | 3068.6300 | 3068.6300 | 5.9281 | 0.0000 | | | |
| 13 | 28082.8700 | 44863.6700 | 41628.3500 | 40636.6500 | 40146.2500 | 40593.6800 | 41092.5200 | 42170.7800 | 43068.5100 | 43818.6600 | 44518.7900 | 45188.9200 | 45849.0500 | 2165.7900 | 2165.7900 | 2165.7900 | 7.7163 | 0.0000 | | | |
| 14 | 29854.4900 | 42724.8900 | 39056.8800 | 36846.4800 | 35290.1000 | 34136.2700 | 33240.8900 | 32415.2400 | 31422.0000 | 30613.4500 | 30013.4500 | 29413.4500 | 28813.4500 | 164.9590 | 164.9590 | 164.9590 | 0.5524 | 0.0000 | | | |
| 15 | 44332.2600 | 41437.8900 | 37216.4000 | 34748.8800 | 33115.8600 | 31995.9000 | 31209.0500 | 30622.7200 | 30167.9900 | 29870.9900 | 29670.9900 | 29470.9900 | 29270.9900 | 14461.2800 | 14461.2800 | 14461.2800 | 32.4800 | 0.0000 | | | |
| 16 | 44568.2500 | 41727.2900 | 38629.5700 | 37623.9900 | 37022.4200 | 36163.0200 | 35802.9800 | 35219.4000 | 34719.4000 | 34286.3000 | 33893.3000 | 33520.3000 | 33147.3000 | 1682.1170 | 1682.1170 | 1682.1170 | 3.7633 | 0.0000 | | | |
| 17 | 64466.7400 | 42011.3900 | 39825.3100 | 39707.2000 | 40386.7500 | 41366.0400 | 42374.1400 | 43263.5900 | 43954.4800 | 44400.0400 | 44800.0400 | 45150.0400 | 45450.0400 | 2096.7000 | 2096.7000 | 2096.7000 | 3.2500 | 0.0000 | | | |
| 18 | 70044.2000 | 44236.3300 | 44753.9900 | 47135.6600 | 50819.9500 | 52916.3000 | 55629.7000 | 58105.7900 | 60364.2900 | 62468.0700 | 64268.0700 | 65828.0700 | 67228.0700 | 1370.2100 | 1370.2100 | 1370.2100 | 1.9571 | 0.0000 | | | |
| 19 | 62652.8800 | 48815.6500 | 49811.7100 | 54007.8800 | 58029.5500 | 61480.3000 | 64278.4000 | 66462.6800 | 68108.2200 | 69295.7900 | 70000.0000 | 70000.0000 | 70000.0000 | 4632.9100 | 4632.9100 | 4632.9100 | 7.4000 | 0.0000 | | | |
| 20 | 65321.5300 | 48417.3800 | 52779.8600 | 56601.3300 | 59876.9400 | 62866.9800 | 65383.0900 | 67376.0200 | 68743.9500 | 69316.7700 | 69600.0000 | 69600.0000 | 69600.0000 | 2696.3900 | 2696.3900 | 2696.3900 | 4.1286 | 0.0000 | | | |
| 21 | 66006.2000 | 50107.7900 | 54968.2700 | 59217.3900 | 62965.9800 | 66384.0600 | 64514.1600 | 64863.8200 | 65006.0200 | 65121.0000 | | | | | | | | | | | |
| CFE | | -2.6484 | 24301.1100 | 30364.4400 | 29869.8100 | 27172.0200 | 24018.1700 | 21079.6600 | 18622.4600 | 16681.9500 | | | | | | | | | | | |
| MAD | | 15243.2400 | 15200.1900 | 15472.4700 | 15410.2900 | 15277.2300 | 15179.5900 | 15124.8300 | 15068.4200 | 14708.7700 | | | | | | | | | | | |
| MSE | | 324328108.0000 | 322711500.0000 | 319626200.0000 | 313178800.0000 | 321108800.0000 | 325219408.0000 | 331044200.0000 | 338701108.0000 | 348460300.0000 | | | | | | | | | | | |
| MAPE (%) | | 51.4181 | 50.9182 | 50.7011 | 50.5521 | 49.9867 | 49.3344 | 48.4370 | 47.1596 | 45.5251 | | | | | | | | | | | |
| Tk.Signal | | 0.8002 | 1.5671 | 1.9625 | 1.9383 | 1.7832 | 1.5825 | 1.3938 | 1.2426 | 1.1301 | | | | | | | | | | | |
| R-square | | 0.8301 | 0.8876 | 0.9157 | 0.9296 | 0.9369 | 0.9428 | 0.9462 | 0.9482 | 0.9494 | | | | | | | | | | | |
| | | Alpha=1 | Alpha=1.2 | Alpha=1.5 | Alpha=1.8 | Alpha=2 | Alpha=2.5 | Alpha=3 | Alpha=4 | Alpha=5 | | | | | | | | | | | |
| | | F(0)-50108.05 | | | | | | | | | | | |

โดยวิธี Double Exponential Smoothing (DES)

| Month | Actual Data | Forecast by DES | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square | |
|-------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|-----|-----|-----|----------|-----------------|----------|--|
| 1 | 50108.0500 | | | | | | | | | | | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 1212.8200 | 1212.8200 | 1470933.0000 | 2.3632 | 1.0000 | | | | | | | | | | | |

การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ต.ค 2555

โดยวิธี Moving Average (MA)

| OB-18-2013 Month | Actual Data | Forecast by 3-MA | Forecast by 4-MA | Forecast by 5-MA | Forecast by 6-MA | Forecast by 7-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|------------------|-------------|------------------|------------------|------------------|------------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | | | | | |
| 3 | 65455.4000 | | | | | | | | | | | | |
| 4 | 25598.4300 | 55991.4400 | | | | | | | | | | | |
| 5 | 15188.6100 | 47821.5600 | 48393.1900 | | | | | | | | | | |
| 6 | 39738.1100 | 25777.4800 | 39663.2300 | 41752.2700 | | | | | | | | | |
| 7 | 52170.9600 | 26841.7100 | 36767.6400 | 39678.2900 | 41416.5800 | | | | | | | | |
| 8 | 55801.2600 | 36032.5600 | 33424.0300 | 40048.3000 | 41927.0600 | 43095.7800 | 12705.4800 | 12705.4800 | 12705.4800 | 161429300.0000 | 22.7632 | 1.0000 | |
| 9 | 62452.0300 | 49570.1100 | 40574.7300 | 37892.4000 | 42673.7900 | 43909.9800 | 16543.6000 | 31249.0000 | 15624.5400 | 252647200.0000 | 26.2307 | 2.0000 | |
| 10 | 31782.3500 | 57141.6400 | 52798.7500 | 45270.3300 | 41991.6800 | 45499.3500 | 13717.0000 | 17532.0000 | 14988.7000 | 231150200.0000 | 31.8735 | 1.1697 | 0.2025 |
| 11 | 13587.8000 | 50012.1000 | 50881.8100 | 48589.0700 | 43022.3300 | 40533.2000 | -26345.4000 | -9413.3180 | 17977.8700 | 354876300.0000 | 73.4816 | -1.5236 | 0.0231 |
| 12 | 1775.5200 | 39540.5500 | 40990.0200 | 42795.5300 | 38814.0000 | 42795.5300 | 38814.0000 | 16973.5200 | 34448.0000 | 347583600.0000 | 63.7980 | 0.2080 | 0.0194 |
| 13 | 28002.8700 | 32381.8900 | 39895.5900 | 43079.3300 | 44763.7700 | 44644.1000 | 16041.2300 | 12496.4300 | 16818.4700 | 307466000.0000 | 62.7064 | 0.7430 | 0.0317 |
| 14 | 29854.4900 | 31122.0600 | 31287.1300 | 37520.2500 | 40967.0800 | 42367.6300 | -12513.1400 | -25009.5700 | 16203.4200 | 289902500.0000 | 59.7360 | -1.5435 | 0.0635 |
| 15 | 44332.2600 | 30544.2900 | 30085.1700 | 31060.6100 | 36242.6200 | 39036.7100 | 5295.9510 | 19714.0200 | 14839.9400 | 253670100.0000 | 53.7621 | -1.3284 | 0.0472 |
| 16 | 44568.2500 | 24063.2100 | 38491.2800 | 32910.5900 | 32222.5500 | 37288.2000 | 7163.9600 | 12544.0500 | 12987.2200 | 231186500.0000 | 45.9261 | 0.8968 | 0.0411 |
| 17 | 64466.7400 | 39585.0000 | 36689.4600 | 39706.6800 | 39393.5400 | 34843.3600 | 29623.3800 | 17079.3300 | 15551.2500 | 295831300.0000 | 49.2136 | 1.0983 | 0.0538 |
| 18 | 70044.2000 | 51122.4200 | 45809.4300 | 42244.3200 | 43833.3600 | 39512.5600 | 30931.8400 | 47610.9700 | 16913.1400 | 353601300.0000 | 48.7023 | 2.0150 | 0.0909 |
| 19 | 62652.8800 | 50631.8600 | 50962.8600 | 50653.1900 | 48070.1400 | 47577.7600 | 15075.1200 | 62686.0900 | 16759.3700 | 343146100.0000 | 45.6409 | 2.7402 | 0.1363 |
| 20 | 65321.5300 | 65721.2700 | 60433.0200 | 57212.8600 | 52653.1400 | 49131.6700 | 16189.8600 | 78875.9500 | 16716.1200 | 336912700.0000 | 44.9670 | 4.7186 | 0.1814 |
| 21 | 67957.0800 | 66096.2900 | 65621.3400 | 61410.7200 | 58964.3100 | 54462.9100 | 13094.1700 | 91970.1300 | 16457.4000 | 325094500.0000 | 43.1396 | 5.5884 | 0.2315 |
| 22 | | 65177.1600 | 66393.9200 | 66008.4800 | 62435.1100 | 59688.9900 | | | | | | | |
| CFE | | 14527.8900 | 15190.8200 | 92172.5000 | 99507.4100 | 91970.1300 | | | | | | | |
| MAD | | 15346.8000 | 15366.8100 | 14316.3600 | 15593.5400 | 14637.4000 | | | | | | | |
| MSE | | 369729500.0000 | 397324700.0000 | 299502000.0000 | 295904400.0000 | 329694500.0000 | | | | | | | |
| MAPE | | 53.4347 | 51.4567 | 41.7149 | 41.6472 | 43.1396 | | | | | | | |
| Trk. Signal | | 0.3466 | 3.3642 | 6.1792 | 6.3858 | 5.9884 | | | | | | | |
| R-square | | 0.4548 | 0.3429 | 0.3530 | 0.2970 | 0.2315 | | | | | | | |
| | | m=3 | m=4 | m=5 | m=6 | m=7 | | | | | | | |

โดยวิธี Single Exponential Smoothing (SES)

| OB-18-2013 Month | Actual Data | Forecast by SES | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square | |
|------------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|------------|------------|----------|----------|-----------------|----------|--|
| 1 | 50108.0500 | | | | | | | | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 1212.8200 | 1212.8200 | 2.3632 | 1.0000 | | | |
| 3 | 65455.4000 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 15176.3500 | 15176.3500 | 15176.3500 | 23.0311 | 0.2080 | | | |
| 4 | 25598.4300 | 51860.9400 | 53595.5700 | 55293.5900 | 56974.0700 | 58629.5300 | 60261.5400 | 61868.8900 | 63451.9800 | 65010.8200 | 66545.3900 | -2295.9600 | -2295.9600 | -2295.9600 | -3.5076 | -0.5907 | 0.0307 | | |
| 5 | 15188.6100 | 49234.6300 | 47991.3400 | 46395.2900 | 44423.8100 | 42114.1800 | 39463.6700 | 36479.3000 | 33163.1400 | 29539.6700 | 26119.0000 | -3720.6100 | -3720.6100 | -3720.6100 | -24.5000 | -0.2450 | 0.0000 | | |
| 6 | 39738.1100 | 45830.8800 | 41430.8800 | 37026.2900 | 32729.7300 | 28651.3900 | 24898.6300 | 21575.9000 | 18794.7200 | 16623.7200 | 15114.3900 | -1405.7200 | -1405.7200 | -1405.7200 | -3.5381 | -0.3538 | 0.0000 | | |
| 7 | 52170.9600 | 45220.8800 | 41052.2500 | 37629.5800 | 34553.0800 | 31494.7900 | 28602.3200 | 26289.4500 | 24547.4300 | 23426.5700 | 15744.2900 | -1652.6900 | -1652.6900 | -1652.6900 | -3.1572 | -0.3157 | 0.0000 | | |
| 8 | 55801.2600 | 46015.8900 | 43508.0000 | 42439.1700 | 42588.2300 | 43682.8600 | 45423.5000 | 47506.5100 | 49646.2500 | 51596.5300 | 4204.7310 | 580.9800 | 580.9800 | 580.9800 | 1.0381 | 0.1038 | 0.0000 | | |
| 9 | 62452.0300 | 46934.4300 | 45366.5500 | 46447.8000 | 47873.4500 | 49742.0600 | 51850.1600 | 53312.8400 | 54570.2600 | 55380.7900 | 7071.9020 | 1293.1300 | 1293.1300 | 1293.1300 | 2.0538 | 0.2054 | 0.0000 | | |
| 10 | 31782.3500 | 48949.2500 | 45263.8600 | 51249.2700 | 52705.1400 | 56097.3800 | 59131.6800 | 59710.7300 | 60876.2100 | 61745.5000 | -2996.1500 | -1703.8000 | -1703.8000 | -1703.8000 | -5.3571 | -0.5357 | 0.0000 | | |
| 11 | 13587.8000 | 46984.4700 | 45767.5600 | 45407.1900 | 44336.0300 | 43539.8600 | 42322.0800 | 40160.8700 | 37601.1200 | 34778.6600 | -21198.0600 | -3822.2600 | -3822.2600 | -3822.2600 | -28.1188 | -2.8119 | 0.0000 | | |
| 12 | 1775.5200 | 43536.8000 | 39331.6100 | 35862.7700 | 32396.7400 | 28763.8300 | 25081.5100 | 21599.7200 | 18398.4600 | 15706.8900 | 36068.6200 | -215.1500 | -215.1500 | -215.1500 | -12.1400 | -1.2140 | 0.0000 | | |
| 13 | 28002.8700 | 44360.6700 | 41820.3900 | 40636.6800 | 40148.2500 | 40263.6800 | 41897.9200 | 42710.7800 | 45098.5100 | 48188.6600 | -20165.7900 | -2232.2600 | -2232.2600 | -2232.2600 | -16.4000 | -1.6400 | 0.0000 | | |
| 14 | 29854.4900 | 42724.8900 | 39896.8800 | 38466.4800 | 39296.1800 | 34136.2700 | 33248.0900 | 32415.2400 | 31422.0000 | 30019.4500 | -164.9590 | -2248.2600 | -2248.2600 | -2248.2600 | -7.5361 | -0.7536 | 0.0000 | | |
| 15 | 44332.2600 | 41437.8500 | 37716.4000 | 34748.8000 | 32115.8600 | 31995.3000 | 31995.3000 | 30622.7200 | 29167.9500 | 28078.9900 | 14461.2800 | 862.2600 | 862.2600 | 862.2600 | 1.9236 | 0.1924 | 0.0000 | | |
| 16 | 44568.2500 | 41727.2900 | 38639.5700 | 37623.2000 | 37822.4200 | 38163.8200 | 39082.9800 | 40219.1000 | 41499.4100 | 42886.1300 | 16218.1170 | 6330.2600 | 6330.2600 | 6330.2600 | 14.3111 | 1.4311 | 0.0000 | | |
| 17 | 64466.7400 | 42011.3900 | 39825.3100 | 39707.2000 | 40388.7500 | 41366.0400 | 42374.1400 | 43763.9300 | 43994.4000 | 44400.0400 | 20064.7000 | 1372.7200 | 1372.7200 | 1372.7200 | 2.1140 | 0.2114 | 0.0000 | | |
| 18 | 70044.2000 | 44258.3300 | 41763.5800 | 41735.8600 | 42483.9500 | 43625.3700 | 45625.7000 | 50105.7900 | 60364.2900 | 62468.0700 | 7584.1370 | 2136.2600 | 2136.2600 | 2136.2600 | 3.0500 | 0.3050 | 0.0000 | | |
| 19 | 62652.8800 | 46835.6500 | 45011.7100 | 54007.8000 | 58029.6500 | 61480.3000 | 64278.4000 | 68482.6800 | 68108.2200 | 69295.7800 | 6632.9100 | 1462.6600 | 1462.6600 | 1462.6600 | 2.3361 | 0.2336 | 0.0000 | | |
| 20 | 65321.5300 | 48417.3800 | 52379.9500 | 56601.3300 | 59878.9400 | 62866.9900 | 63303.0900 | 63795.8200 | 63743.9500 | 63316.1700 | 2005.3590 | 1668.0000 | 1668.0000 | 1668.0000 | 2.5361 | 0.2536 | 0.0000 | | |
| 21 | 67957.0800 | 50107.7900 | 54968.2700 | 59217.3900 | 62095.9800 | 63634.0600 | 64514.1600 | 64863.8200 | 65006.0200 | 65121.0000 | 2436.0020 | 1911.1100 | 1911.1100 | 1911.1100 | 2.8119 | 0.2812 | 0.0000 | | |
| 22 | | 51846.4000 | 56889.5200 | 58704.1300 | 55370.9100 | 51025.0400 | 47053.0900 | 42765.0900 | 37727.9300 | 31173.5200 | 19112.1000 | | | | | | | | |
| CFE | | 17446.6400 | 36889.5200 | 38704.1300 | 35370.9100 | 31025.0400 | 27053.0900 | 23727.9300 | 21173.5200 | 19112.1000 | | | | | | | | | |
| MAD | | 15438.8700 | 15361.2700 | 15115.8300 | 14914.8300 | 14683.0300 | 14555.5300 | 14582.7800 | 14364.5300 | 14143.5700 | | | | | | | | | |
| MSE | | 323346000.0000 | 314493800.0000 | 307176000.0000 | 304732300.0000 | 305875500.0000 | 309421400.0000 | 314854700.0000 | 322100500.0000 | 331334000.0000 | | | | | | | | | |
| MAPE | | 50.1386 | 49.3040 | 48.7633 | 48.4316 | 47.7828 | 47.0929 | 46.2145 | 44.9904 | 43.4291 | | | | | | | | | |
| Trk. Signal | | 1.1381 | 2.4015 | 2.5695 | 2.1715 | 2.1147 | 1.8573 | 1.6140 | 1.4140 | 1.2516 | | | | | | | | | |
| R-square | | 0.0329 | 0.1032 | 0.1916 | 0.2910 | 0.3954 | 0.5008 | 0.6063 | 0.7123 | 0.8183 | | | | | | | | | |
| | | Alpha=0.1 | Alpha=0.2 | Alpha=0.3 | Alpha=0.4 | Alpha=0.5 | Alpha=0.6 | Alpha=0.7 | Alpha=0.8 | Alpha=0.9 | | | | | | | | | |
| | | F(0)-50108.05 | | | | | | | | | |

โดยวิธี Double Exponential Smoothing (DES)

| OB-18-2013 Month | Actual Data | Forecast by DES | Forecast by DES | Forecast by DES | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|------------------|-------------|-----------------|-----------------|-----------------|----------------|------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 1212.8200 | 1212.8200 | 1470933.0000 | 2.3632 | 1.0000 | |
| 3 | 65455.4000 | 50120.1800 | 50156.5600 | 50217.2100 | 16328.1900 | 17541.0100 | 8770.5800 | 140404800.0000 | 13.4501 | 2.0000 | |
| 4 | 25598.4300 | 50294.2500 | 50943.1600 | 51740.2300 | -26141.8000 | -8600.7890 | 14560.9400 | 317158200.0000 | 43.0076 | - | |

การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน พ.ย 2555

โดยวิธี Moving Average (MA)

| Month | Actual Data | Forecast by 3-MA | Forecast by 4-MA | Forecast by 5-MA | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|------------|---------------|------------------|------------------|------------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | | | | |
| 3 | 65545.4000 | | | | | | | | | | | |
| 4 | 25598.4300 | 55991.4400 | | | | | | | | | | |
| 5 | 15108.5100 | 47621.5600 | 48293.1900 | | | | | | | | | |
| 6 | 39738.1100 | 35777.4800 | 39663.3300 | 41752.2700 | | | | | | | | |
| 7 | 53170.9600 | 26841.7100 | 36767.6400 | 39678.2900 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 59801.2600 | 36532.5600 | 32424.0300 | 40048.3000 | 41937.9600 | 13874.2800 | 25628.5600 | 12814.2800 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 49570.1100 | 40974.7300 | 37899.4800 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.0300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 57141.6400 | 52798.7500 | 45270.3300 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13987.8000 | 58812.1000 | 58801.8100 | 48989.0700 | 43022.3300 | -29434.5300 | 5763.6200 | 17818.2700 | 238497200.0000 | 65.4776 | 0.3388 | 0.8951 |
| 12 | 51775.5200 | 49570.1100 | 40906.0200 | 43395.0100 | 42795.5300 | 3019.9520 | 14783.6200 | 15678.5000 | 295641000.0000 | 57.4682 | 0.9429 | 0.6226 |
| 13 | 26802.8700 | 32381.8900 | 39899.5900 | 43079.9300 | 44761.7700 | -16798.9000 | 19375.2700 | 15832.8900 | 293529500.0000 | 57.8880 | 0.1248 | 0.8039 |
| 14 | 29894.4900 | 31122.9600 | 31787.1700 | 37287.2500 | 40867.6800 | 10912.6100 | 12887.0700 | 15192.8500 | 271183300.0000 | 56.8674 | 0.8251 | 0.8150 |
| 15 | 44332.2600 | 38544.2900 | 30885.1700 | 31000.6100 | 36242.6200 | 8069.6410 | 4598.2310 | 14403.6100 | 248323200.0000 | 58.9763 | 0.3192 | 0.6225 |
| 16 | 44568.2500 | 34663.2100 | 38491.2900 | 33510.5900 | 32222.5500 | 11345.7000 | 6747.4690 | 14097.8200 | 236362300.0000 | 48.4244 | 0.4786 | 0.8543 |
| 17 | 64466.7400 | 39695.8000 | 36888.4600 | 39706.6800 | 39363.5400 | 29113.2000 | 30868.6700 | 15462.8500 | 291528400.0000 | 48.1276 | 2.3152 | 0.6886 |
| 18 | 70044.2000 | 51122.4200 | 45885.4300 | 42244.9200 | 43833.3600 | 26210.8400 | 62071.5200 | 16358.5200 | 324851700.0000 | 47.2353 | 3.7944 | 0.1460 |
| 19 | 62652.8800 | 59693.8600 | 56852.8600 | 50653.1900 | 46078.1400 | 15774.7400 | 27846.2500 | 16213.6100 | 319804800.0000 | 45.5396 | 4.7719 | 0.1871 |
| 20 | 65321.5300 | 65721.7700 | 60433.0200 | 57212.8600 | 52653.1400 | 12668.3900 | 89514.6400 | 16053.2400 | 307862200.0000 | 43.6311 | 5.6384 | 0.2959 |
| 21 | 67957.0800 | 66806.2000 | 65621.3400 | 61410.7200 | 58564.3100 | 8992.7660 | 99507.4100 | 15582.5400 | 292561400.0000 | 41.6472 | 6.3858 | 0.2970 |
| 22 | 75954.2200 | 65177.1600 | 66393.9200 | 66008.4800 | 62495.1100 | 12619.1100 | 112126.5000 | 15997.3300 | 284228900.0000 | 40.0950 | 7.2822 | 0.3602 |
| 23 | 69318.9500 | 69318.9500 | 67646.4200 | 68125.9800 | 67816.1100 | | | | | | | |
| CFE | 24404.1400 | 60351.1200 | 101218.2000 | 112126.5000 | | | | | | | | |
| MAD | | | | | | | | | | | | |
| MSE | 35540460.0000 | 341164000.0000 | 202310800.0000 | 1472182200.0000 | 158126000.0000 | | | | | | | |
| MAPE | 51.3150 | 49.2768 | 39.9700 | 40.0950 | | | | | | | | |
| Trk.Signal | 1.6206 | 4.0254 | 6.9464 | 7.2822 | | | | | | | | |
| R-square | 0.4603 | 0.3871 | 0.4215 | 0.3602 | | | | | | | | |
| | m=3 | m=4 | m=5 | m=6 | | | | | | | | |

โดยวิธี Single Exponential Smoothing (SES)

| Month | Actual Data | Forecast by SES |
|------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1 | 50108.0500 | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 |
| 3 | 65545.4000 | 50225.3300 | 50394.6100 | 50471.9000 | 50593.1800 | 50714.4600 | 50835.7400 | 50957.0200 | 51078.3100 | 51199.5900 | 51320.8700 | 51442.1500 |
| 4 | 25598.4300 | 51360.3400 | 51596.9500 | 51833.5600 | 52070.1700 | 52306.7800 | 52543.3900 | 52779.9900 | 53016.6000 | 53253.2100 | 53489.8200 | 53726.4300 |
| 5 | 15108.5100 | 49234.6000 | 47991.3400 | 46385.2900 | 44423.8100 | 42114.1800 | 39463.6700 | 36479.5700 | 33169.4700 | 29529.6700 | 26139.5700 | 22749.4700 |
| 6 | 39738.1100 | 45830.8800 | 41438.8800 | 37026.2900 | 32729.7200 | 28651.3900 | 24888.6300 | 21575.3000 | 18784.7200 | 16229.7200 | 13774.7200 | 11319.7200 |
| 7 | 53170.9600 | 45270.3300 | 41029.6600 | 37193.8400 | 33513.8800 | 29194.7400 | 25382.3200 | 21478.4500 | 17574.5800 | 13670.7100 | 9766.8400 | 5862.9700 |
| 8 | 59801.2600 | 46815.8900 | 43588.0000 | 42433.1700 | 42588.2300 | 43682.8600 | 45423.5900 | 47506.5100 | 49646.2500 | 51826.0000 | 54005.7500 | 56185.5000 |
| 9 | 62452.6900 | 46994.4300 | 45966.6500 | 46447.8800 | 47073.4500 | 49742.0600 | 51650.1600 | 53312.9400 | 54975.2600 | 56738.7900 | 58502.3200 | 60266.8500 |
| 10 | 31782.3500 | 40548.2600 | 42923.8600 | 51249.2700 | 53785.1400 | 56959.3800 | 58131.6800 | 59716.7300 | 60876.2100 | 61745.5000 | 62424.8000 | 62994.1000 |
| 11 | 13987.8000 | 46864.4700 | 45767.5600 | 45493.1900 | 44936.0300 | 42939.8600 | 42222.8800 | 40168.8700 | 37671.1200 | 34778.6600 | 31586.2000 | 28393.7400 |
| 12 | 51775.5200 | 43936.8800 | 39331.6100 | 35862.7700 | 32396.7400 | 28763.8300 | 25881.9100 | 23155.7200 | 20890.4600 | 18798.8900 | 16826.9200 | 14954.9500 |
| 13 | 28002.8700 | 44360.6700 | 41820.3900 | 40536.6800 | 40148.2500 | 40288.6800 | 41097.5200 | 42711.7800 | 45089.5100 | 48016.6600 | 51003.8100 | 54000.9600 |
| 14 | 29894.4900 | 42724.9900 | 39056.6000 | 36846.4800 | 35290.1000 | 34136.2700 | 33240.8900 | 32415.2400 | 31422.0000 | 30019.4500 | 28393.7400 | 26768.0300 |
| 15 | 44332.2600 | 41437.8500 | 37216.4000 | 34748.8800 | 33115.8600 | 31995.3800 | 31209.0500 | 30622.7200 | 30167.9900 | 29870.9900 | 29673.9900 | 29476.9900 |
| 16 | 44568.2500 | 41727.2900 | 38628.5700 | 37623.9000 | 37082.4200 | 38163.8200 | 39882.9800 | 40219.4000 | 41493.4100 | 42898.1300 | 44400.0400 | 45901.9500 |
| 17 | 64466.7400 | 42011.3900 | 39825.3100 | 39707.2000 | 40388.7500 | 41366.0400 | 42374.1400 | 43143.5900 | 43954.4800 | 44800.9900 | 45612.0000 | 46373.0100 |
| 18 | 70044.2000 | 44256.3900 | 44753.9900 | 47135.0600 | 50019.9500 | 52916.3900 | 55629.7000 | 58195.7900 | 60364.2900 | 62468.0700 | 64246.0000 | 65688.0000 |
| 19 | 62652.8800 | 49191.7100 | 54087.0800 | 59879.8400 | 64286.5900 | 68089.3400 | 71286.0900 | 73892.8400 | 75899.5900 | 77406.3400 | 78513.0900 | 79220.0000 |
| 20 | 65321.5300 | 48417.3800 | 52379.9500 | 56601.3300 | 59878.9400 | 62066.9500 | 63303.0900 | 63795.8200 | 63431.1700 | | | |
| 21 | 67957.0800 | 50107.7300 | 54968.2700 | 59217.3300 | 62095.8800 | 63694.0600 | 64514.1600 | 64862.8200 | 65006.0200 | 65121.0000 | | |
| 22 | 75954.2200 | 51852.7200 | 57486.0600 | 61719.3000 | 64286.5900 | 65825.5700 | 66339.8100 | 66748.1800 | 67046.8700 | 67314.4700 | | |
| 23 | 69318.9500 | 54172.7800 | 60999.6600 | 65719.7700 | 68675.5400 | 70339.8900 | 71568.9000 | 72562.6800 | 73452.7500 | 74280.1400 | | |
| CFE | 40648.1400 | 54458.1100 | 52039.0500 | 46168.7100 | 40463.6800 | 37672.4100 | 32078.0400 | 29180.8700 | 26857.8000 | | | |
| MAD | | | | | | | | | | | | |
| MSE | 3336240.0000 | 14422080.0000 | 30101620.0000 | 29572320.0000 | 29541300.0000 | 29541300.0000 | 29830320.0000 | 301442160.0000 | 309623200.0000 | 314409600.0000 | 318409600.0000 | 322209600.0000 |
| MAPE | 49.2223 | 48.0708 | 47.3063 | 46.8104 | 46.1056 | 45.4833 | 44.5407 | 43.3561 | 41.8522 | | | |
| Trk.Signal | 2.9713 | 3.5211 | 3.4621 | 3.1367 | 2.8862 | 2.5839 | 2.2978 | 2.0752 | 1.9407 | | | |
| R-square | 0.1848 | 0.2423 | 0.2163 | 0.1845 | 0.1425 | 0.1087 | 0.0837 | 0.0638 | 0.0474 | | | |
| | Alpha=0.1 | Alpha=0.2 | Alpha=0.3 | Alpha=0.4 | Alpha=0.5 | Alpha=0.6 | Alpha=0.7 | Alpha=0.8 | Alpha=0.9 | | | |
| | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 | F(0)-50108.05 |

โดยวิธี Double Exponential Smoothing (DES)

| Month | Actual Data | Forecast by DES |
|-------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1 | 50108.0500 | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 |
| 3 | 65545.4000 | 50120.2600 | 50156.5600 | 50217.2100 | 50302.1000 | 50411.2600 | 50544.6600 | 50702.3300 | 50884.2600 | 51094.4400 | 51340.1700 | 51614.4600 |
| 4 | 25598.4300 | 50294.2500 | 50843.1600 | 51740.2300 | 52970.8900 | 54620.5900 | 56374.7900 | 58218.9200 | 60138.4400 | 62118.7000 | 64264.0000 | 66580.3300 |
| 5 | 15108.5100 | 50108.3000 | 50272.8000 | 50133.7500 | 49552.8600 | 48317.3900 | 46228.2000 | 43281.3800 | 38723.0000 | 32947.5800 | 26754.5800 | 20384.5800 |
| 6 | 39738.1100 | 49752.4800 | 49504.4000 | 46201.5100 | 42823.1300 | 38484.3900 | 33430.4300 | 28030.5400 | 22772.7000 | 18256.1000 | 13574.1000 | 8746.1000 |
| 7 | 53170.9600 | 49299.3200 | 47021.9700 | 43693.0100 | 39807.1100 | 36339.5700 | 33653.5600 | 32411.7700 | 32892.4200 | 35049.6100 | 37506.6100 | 40173.6100 |
| 8 | 59801.2600 | 48978.9700 | 46119.1900 | 42316.8600 | 40979.9400 | 40011.2100 | 40715.5300 | 42978.0900 | 46115.4900 | 49887.8400 | 54301.8400 | 59301.8400 |
| 9 | 62452.6900 | 48723.3200 | 46248.6700 | 44256.1400 | 43237.1100 | 44876.6300 | 47276.3100 | 50221.4100 | 52919.3100 | 56484.4500 | 60826.5500 | 65926.5500 |
| 10 | 31782.3500 | 48750.0100 | 46851.7100 | 46354.8800 | 47724.3200 | 50487.0000 | 53789.5300 | 56861.2400 | 59284.8300 | 61095.1000 | 62406.1000 | 63216.1000 |
| 11 | 13987.8000 | 48561.4600 | 46634.8800 | 46070.6100 | 46689.8800 | 47213.4300 | 46989.8600 | 45170.9800 | 41937.8600 | 37406.3100 | 32406.3100 | 27406.3100 |
| 12 | 51775.5200 | 48958.9800 | 45174.2000 | 43088.2600 | 40524.1000 | 37988.6300 | 35812.3300 | 32643.1000 | 28989.940 | | | |

การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ธ.ค 2555

โดยวิธี Moving Average (MA)

| 08/18/2013 | Actual Data | Forecast by 3-MA | Forecast by 4-MA | Forecast by 5-MA | Forecast by 6-MA | Forecast by 7-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|-------------|-------------|------------------|------------------|------------------|------------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | | | | | |
| 3 | 60545.4000 | | | | | | | | | | | | |
| 4 | 29598.4300 | 55991.4400 | | | | | | | | | | | |
| 5 | 15188.6100 | 47921.0500 | 48393.1900 | | | | | | | | | | |
| 6 | 39738.1100 | 35777.4800 | 39663.2300 | 41752.2700 | | | | | | | | | |
| 7 | 53170.9600 | 26041.7100 | 26762.6400 | 29678.2900 | 41416.5800 | | | | | | | | |
| 8 | 59801.2600 | 36932.5600 | 32424.9300 | 40043.3000 | 41932.0600 | | | | | | | | |
| 9 | 62452.6300 | 49570.1100 | 40974.7300 | 37893.4800 | 42673.7900 | 43093.0000 | 12705.4000 | 12705.4000 | 12705.4000 | 161429300.0000 | 22.7692 | 1.0000 | |
| 10 | 31782.3900 | 57141.6400 | 52790.7900 | 45270.3300 | 41991.6800 | 45499.3500 | 13717.0000 | 17532.0000 | 14988.7000 | 231196200.0000 | 31.8726 | 1.1637 | 0.2009 |
| 11 | 13987.0000 | 50012.1000 | 50801.8100 | 49063.0700 | 43022.3300 | 40523.2000 | 26545.4000 | 9413.2100 | 17977.8700 | 264876200.0000 | 73.4016 | 3.6236 | 0.0231 |
| 12 | 51775.5200 | 35940.9500 | 40906.0200 | 42359.0100 | 42755.5300 | 38812.4000 | 12958.1200 | 3544.0030 | 16973.5200 | 317483600.0000 | 63.7900 | 0.2988 | 0.0194 |
| 13 | 28002.0000 | 32391.0900 | 39899.9900 | 45366.2900 | 44781.2700 | 44844.1000 | 16041.2300 | 12486.4300 | 16818.4700 | 307496500.0000 | 62.7084 | 0.7430 | 0.0317 |
| 14 | 29804.4000 | 31122.0600 | 31287.1300 | 37520.2500 | 40567.0800 | 42367.6300 | 12913.1400 | 25009.5700 | 16203.4200 | 285902500.0000 | 59.7360 | 1.5436 | 0.0635 |
| 15 | 44332.2600 | 36544.2900 | 30805.1700 | 31000.6100 | 36242.6200 | 39036.7100 | 5295.5910 | 19714.0200 | 14829.9400 | 252670100.0000 | 53.7621 | 1.3284 | 0.0472 |
| 16 | 44868.2500 | 34083.2100 | 30491.2000 | 32510.5900 | 32222.9500 | 37388.2000 | 7163.9630 | 12544.0500 | 13987.7200 | 231196500.0000 | 49.5761 | 0.8088 | 0.0411 |
| 17 | 64466.7400 | 39585.0000 | 36689.4600 | 39706.6800 | 35353.5400 | 34843.3600 | 29623.3800 | 17079.3300 | 15551.2900 | 295831300.0000 | 49.2136 | 1.0983 | 0.0930 |
| 18 | 70044.2000 | 51122.4200 | 49809.4300 | 42244.9200 | 43833.3600 | 39512.5600 | 30931.6400 | 47610.9700 | 16913.1400 | 353681300.0000 | 48.7023 | 2.9150 | 0.0909 |
| 19 | 62652.8800 | 45932.0600 | 50952.8600 | 48853.1300 | 46878.1400 | 47577.7600 | 15075.1200 | 62586.0800 | 16799.9200 | 343146100.0000 | 46.8489 | 3.7402 | 1.1363 |
| 20 | 65321.5300 | 65721.2700 | 60433.0200 | 57212.8600 | 52153.1400 | 49131.6700 | 16189.8600 | 78975.9500 | 16716.1200 | 336312700.0000 | 44.9670 | 4.7186 | 1.0154 |
| 21 | 67957.0800 | 66006.2000 | 65621.3400 | 61410.7200 | 58954.3100 | 54462.9100 | 13094.1700 | 91970.3000 | 16457.4000 | 325094500.0000 | 43.1396 | 5.5084 | 0.2315 |
| 22 | 76954.2200 | 65177.1600 | 66393.9200 | 65080.4800 | 62495.1100 | 59849.9900 | 15205.2300 | 10171.5000 | 65373.9300 | 318634000.0000 | 41.8142 | 6.5455 | 0.2927 |
| 23 | 68537.6400 | 63910.9500 | 67646.4200 | 68129.3800 | 67516.1100 | 64237.8400 | 2299.7970 | 105475.1000 | 15494.2300 | 295238200.0000 | 39.2293 | 7.0655 | 0.3538 |
| 24 | 69716.3100 | 60817.6100 | 67424.6700 | 67861.2600 | 67376.3000 | | | | | | | | |
| CFE | | 21362.0400 | 59528.9200 | 111146.0000 | 109475.1000 | | | | | | | | |
| MAD | | 14444.4600 | 14261.7500 | 13843.9500 | 14543.1600 | 15434.2900 | | | | | | | |
| MSE | | 338018900.0000 | 323723700.0000 | 267710800.0000 | 267665900.0000 | 299238200.0000 | | | | | | | |
| MAPE | | 48.9576 | 46.7718 | 37.8621 | 37.8238 | 38.2933 | | | | | | | |
| Trk. Signal | | 1.4975 | 1.1539 | 7.1335 | 7.6395 | 7.0655 | | | | | | | |
| R-square | | 0.5100 | 0.4405 | 0.4936 | 0.4391 | 0.3639 | | | | | | | |

โดยวิธี Single Exponential Smoothing (SES)

| 08/18/2013 | Actual Data | Forecast by SES | Forecast Error |
|-------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 1 | 50108.0500 | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 121.1 |
| 3 | 60545.4000 | 50229.3300 | 50350.6100 | 50471.9000 | 50593.1800 | 50714.4600 | 50835.7400 | 50957.0200 | 51078.3100 | 51199.5900 | 15458.8100 | 1658 |
| 4 | 29598.4300 | 51860.3400 | 53989.5700 | 56293.9300 | 58794.0700 | 60629.3300 | 62621.5400 | 64768.8000 | 67051.9000 | 69412.3900 | -39412.3900 | -2295 |
| 5 | 15188.6100 | 45234.6300 | 47921.0500 | 46385.2900 | 44423.0100 | 42114.0800 | 40463.5700 | 38475.5700 | 36475.5700 | 34570.5600 | -29533.6000 | -14251 |
| 6 | 39738.1100 | 45830.0800 | 41430.8800 | 37026.2900 | 32729.7300 | 28651.3900 | 24898.6300 | 21575.9000 | 18794.7200 | 16623.7200 | -23114.2900 | -1409 |
| 7 | 53170.9600 | 45220.8800 | 41092.2600 | 37839.8400 | 35533.0800 | 34194.7500 | 33802.3200 | 34289.5400 | 35547.4300 | 37426.7700 | -15744.2900 | -165 |
| 8 | 59801.2600 | 46015.8900 | 43509.0000 | 42429.1700 | 42989.2300 | 43682.0600 | 44242.5000 | 44796.5100 | 45346.2500 | 45936.5300 | -4204.7310 | -589 |
| 9 | 62452.6300 | 46294.4300 | 42956.6500 | 42447.8000 | 41783.4500 | 41422.8000 | 41020.1600 | 40619.4000 | 40219.4000 | 40219.4000 | -1682.1170 | -634 |
| 10 | 31782.3900 | 48540.2600 | 42623.8600 | 51249.2700 | 53795.1400 | 56979.3800 | 60151.6800 | 63710.0000 | 67426.2100 | 71745.5000 | -29813.5000 | -1703 |
| 11 | 13987.0000 | 46864.4700 | 45767.5600 | 45409.1900 | 44436.0300 | 43399.8600 | 42322.0000 | 40160.8700 | 37601.1200 | 34776.6500 | -21160.8600 | -3822 |
| 12 | 51775.5200 | 43636.6700 | 39331.8100 | 35862.7700 | 32396.7400 | 28763.6300 | 25801.5100 | 21955.7200 | 18390.4600 | 15706.8800 | -36868.6300 | -215 |
| 13 | 28002.0000 | 44360.6700 | 41829.3900 | 40636.6000 | 40148.2500 | 40263.6800 | 41097.9200 | 42719.7800 | 44908.5100 | 48188.6600 | -20165.7800 | -2238 |
| 14 | 29804.4000 | 42724.8900 | 39056.8800 | 36846.4800 | 35290.1000 | 34136.2700 | 33240.8900 | 32415.2400 | 31422.0000 | 30019.4500 | -164.9500 | -2248 |
| 15 | 44332.2600 | 41437.8500 | 37216.4000 | 34748.8800 | 33115.8600 | 31995.3800 | 31209.0500 | 30622.2000 | 30177.9900 | 29870.9900 | -14461.2000 | -802 |
| 16 | 44868.2500 | 41227.2900 | 38629.5700 | 37622.9200 | 37022.4200 | 36163.8200 | 35802.9800 | 35219.4000 | 34799.4100 | 34286.1300 | -1682.1170 | -634 |
| 17 | 64466.7400 | 42011.3900 | 39825.3100 | 39707.2000 | 40388.7500 | 41366.0400 | 42374.1400 | 43263.5900 | 43954.4900 | 44400.0400 | -20666.7000 | -1372 |
| 18 | 70044.2000 | 44256.3300 | 44753.5900 | 47135.0600 | 50019.9500 | 52916.3900 | 55629.7000 | 58109.7900 | 60364.2900 | 62460.0700 | -7084.1370 | -210 |
| 19 | 62652.8800 | 46295.6500 | 49811.7100 | 54007.8000 | 58029.6500 | 61480.3000 | 64278.4000 | 66462.6800 | 68108.2200 | 69296.7900 | -6632.9100 | -1467 |
| 20 | 65321.5300 | 49417.3800 | 52779.9500 | 56601.3300 | 59878.3400 | 62666.9900 | 65381.0900 | 67795.8200 | 69474.9500 | 70316.1700 | -2006.3900 | -1688 |
| 21 | 67957.0800 | 50107.7900 | 54968.2700 | 59217.3900 | 62955.9800 | 63634.0600 | 64514.1600 | 64863.8200 | 65006.0200 | 65121.0000 | -2436.0820 | -1911 |
| 22 | 76954.2200 | 51892.7200 | 57486.0300 | 61719.3000 | 64256.4200 | 65625.5700 | 66339.9100 | 66749.1000 | 67046.8700 | 67314.4700 | -7740.7500 | -2695 |
| 23 | 68537.6400 | 54123.0700 | 60989.9300 | 65965.1300 | 67760.3800 | 68438.7700 | 68549.9800 | 68345.1600 | 67920.6500 | 67302.0000 | -7742.5000 | -1911 |
| 24 | 55409.4900 | 59996.8900 | 52856.9200 | 44130.8200 | 36661.4300 | 30736.5500 | 26093.0000 | 22265.7600 | 19115.3800 | | | |
| CFE | | 15651.8000 | 15015.0700 | 14394.9700 | 14142.3800 | 13936.8800 | 13806.1700 | 13835.7200 | 13737.0700 | 13561.9400 | | |
| MAD | | 325369000.0000 | 301332100.0000 | 287364000.0000 | 282517000.0000 | 282766700.0000 | 285894400.0000 | 291016800.0000 | 297913900.0000 | 306661200.0000 | | |
| MSE | | 47.8304 | 46.2541 | 45.2119 | 44.8219 | 44.2636 | 43.8382 | 42.9277 | 41.8577 | 40.4787 | | |
| MAPE | | 3.3870 | 3.3957 | 3.6745 | 3.1205 | 2.6305 | 2.2167 | 1.8830 | 1.6209 | 1.4095 | | |
| Trk. Signal | | 0.0954 | 0.1511 | 0.2581 | 0.3648 | 0.4671 | 0.5655 | 0.6619 | 0.7582 | 0.8546 | | |
| R-square | | 0.0524 | 0.1511 | 0.2581 | 0.3648 | 0.4671 | 0.5655 | 0.6619 | 0.7582 | 0.8546 | | |
| Alpha=0.1 | | F(0)-50108.05 | | |
| Alpha=0.2 | | F(0)-50108.05 | | |
| Alpha=0.3 | | F(0)-50108.05 | | |
| Alpha=0.4 | | F(0)-50108.05 | | |
| Alpha=0.5 | | F(0)-50108.05 | | |
| Alpha=0.6 | | F(0)-50108.05 | | |
| Alpha=0.7 | | F(0)-50108.05 | | |
| Alpha=0.8 | | F(0)-50108.05 | | |
| Alpha=0.9 | | F(0)-50108.05 | | |

โดยวิธี Double Exponential Smoothing (DES)

| 08/18/2013 | Actual Data | Forecast by DES | Forecast Error |
|------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 1 | 50108.0500 | | | | | | | | | | | |
| 2 | 51320.8700 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 50108.0500 | 1212.8200 | 121.1 |
| 3 | 60545.4000 | 50120.1800 | 50156.5600 | 50217.2100 | 50302.1000 | 50411.2800 | 50544.6200 | | | | | |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ม.ค 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/01 | BOS507CM | MA =6 | 15678.55 | 295641000 | 57.468 |
| | BOS507CM | SES=0.1 | 15945.13 | 364328000 | 67.249 |
| | BOS507CM | DES=0.2 | 15749.97 | 360742900 | 66.958 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.พ. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/02 | BOS507CM | MA=6 | 15832.89 | 293529500 | 57.808 |
| | BOS507CM | SES=0.1 | 15979.52 | 356265400 | 66.513 |
| | BOS507CM | DES=0.2 | 15812.52 | 353370100 | 66.289 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน มี.ค. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/03 | BOS507CM | MA=5 | 15051.29 | 311228800 | 54.866 |
| | BOS507CM | SES=0.1 | 15740.36 | 341602500 | 64.713 |
| | BOS507CM | DES=0.2 | 15639.23 | 340331200 | 64.683 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน เม.ย. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/04 | BOS507CM | MA=6 | 14403.61 | 248323200 | 50.976 |
| | BOS507CM | SES=0.1 | 14822.79 | 317800700 | 60.557 |
| | BOS507CM | DES=0.2 | 14676.26 | 316354400 | 60.411 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน พ.ค. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/05 | BOS507CM | MA=7 | 13987.72 | 231196500 | 49.576 |
| | BOS507CM | SES=0.1 | 14024 | 297152100 | 56.945 |
| | BOS507CM | SES=0.2 | 13904.55 | 295905000 | 56.847 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน มิ.ย. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/06 | BOS507CM | MA=6 | 15462.85 | 291928400 | 48.128 |
| | BOS507CM | SES=0.1 | 14550.96 | 310095200 | 55.563 |
| | BOS507CM | DES=0.2 | 14493.49 | 311422000 | 55.556 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.ค. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/07 | BOS507CM | MA=6 | 16358.52 | 324851700 | 47.235 |
| | BOS507CM | SES=0.1 | 15211.92 | 330971000 | 54.46 |
| | BOS507CM | DES=0.1 | 14792.96 | 330964300 | 55.27 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ส.ค. 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/08 | BOS507CM | MA=6 | 16313.61 | 319004800 | 45.539 |
| | BOS507CM | SES=0.1 | 15245.55 | 326284900 | 52.837 |
| | BOS507CM | DES=0.1 | 14913.12 | 328549500 | 53.703 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.ย 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/09 | BOS507CM | MA=6 | 16053.24 | 307682200 | 43.671 |
| | BOS507CM | SES=0.9 | 14670.17 | 348460300 | 45.525 |
| | BOS507CM | DES=0.1 | 15146.77 | 330968800 | 52.436 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ต.ค 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|--------|
| | | | MAD | MSE | MAPE |
| 2012/10 | BOS507CM | MA=6 | 15582.54 | 292561400 | 41.647 |
| | BOS507CM | SES=0.9 | 14143.97 | 331334000 | 43.429 |
| | BOS507CM | DES=0.1 | 15448.13 | 336837400 | 51.381 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน พ.ย 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ ที่เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|---------|
| | | | MAD | MSE | MAPE |
| 2012/11 | BOS507CM | MA=5 | 14571.22 | 283310000 | 39.9700 |
| | BOS507CM | SES=0.9 | 13839.35 | 318409500 | 41.852 |
| | BOS507CM | DES=0.9 | 14078.38 | 312270300 | 43.354 |

แสดงค่า Error จากการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ธ.ค 2555

| พยากรณ์ ปี/เดือน | สินค้า | เทคนิคการพยากรณ์ ที่เลือกใช้ | ค่า Error | | |
|---------------------|----------|---------------------------------|-----------|-----------|---------|
| | | | MAD | MSE | MAPE |
| 2012/12 | BOS507CM | MA=6 | 14,549.16 | 267565900 | 37.8230 |
| | BOS507CM | SES=0.9 | 13561.94 | 306661200 | 40.479 |
| | BOS507CM | DES=0.9 | 13757.66 | 300317900 | 41.863 |

แสดงผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ม.ค - ธ.ค 2555

| เดือน ที่ | ประเภทสินค้า | เทคนิคการพยากรณ์ที่ เลือกใช้ ปี 2555 | ค่าการพยากรณ์จากโปรแกรม (กิโลกรัม) 2555 |
|--------------|--------------|---|---|
| 1 | BOS507CM | Moving Average=6 | 44,761.77 |
| 2 | BOS507CM | Moving Average =6 | 40,567.08 |
| 3 | BOS507CM | Moving Average =5 | 31,000.61 |
| 4 | BOS507CM | Moving Average =6 | 33,222.55 |
| 5 | BOS507CM | Moving Average =7 | 34,843.36 |
| 6 | BOS507CM | Moving Average =6 | 43,833.36 |
| 7 | BOS507CM | Moving Average =6 | 46,878.14 |
| 8 | BOS507CM | Moving Average =6 | 52,653.14 |
| 9 | BOS507CM | Moving Average =6 | 58,564.31 |
| 10 | BOS507CM | Moving Average =6 | 62,435.11 |
| 11 | BOS507CM | Moving Average =5 | 68,125.98 |
| 12 | BOS507CM | Moving Average =6 | 67,861.26 |

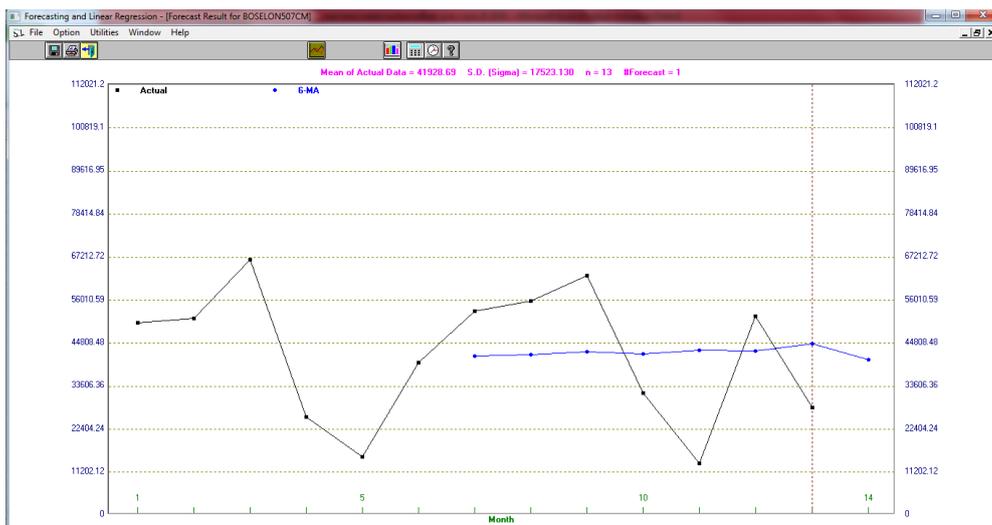
ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ม.ค 2555 (MA=6)

| 08-19-2013 Month | Actual Data | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|----------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.9500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41927.0600 | 13874.2000 | 25628.5800 | 12814.2900 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | | 44761.7700 | | | | | | | |
| CFE | | | | 14783.6200 | | | | | |
| MAD | | | | 15678.5500 | | | | | |
| MSE | | | | 295641000.0000 | | | | | |
| MAPE | | | | 57.4682 | | | | | |
| Trk. Signal | | | | 0.9429 | | | | | |
| R-square | | | | 0.0226 | | | | | |
| | | | | m=6 | | | | | |



ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.พ 2555 (MA=6)

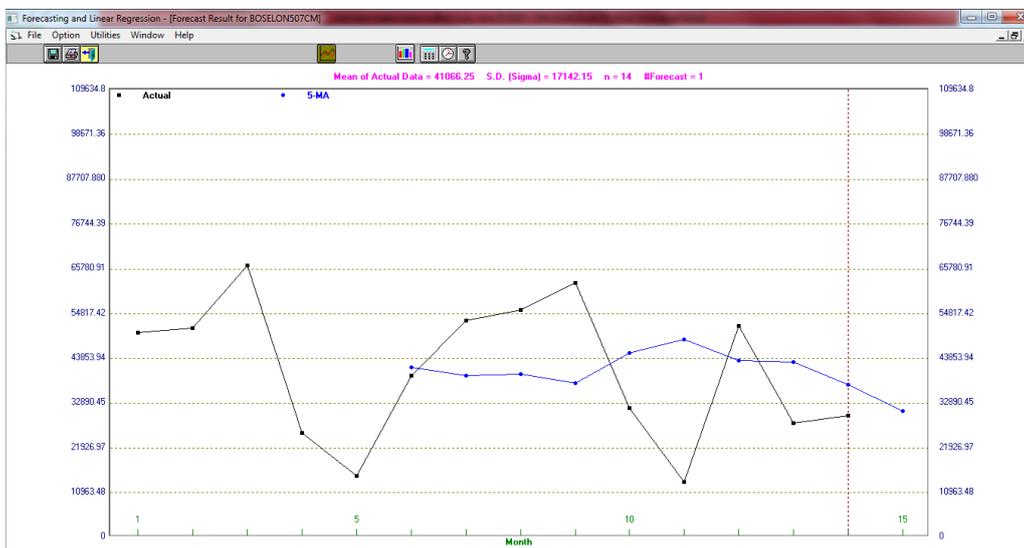
| 08-19-2013 Month | Actual Data | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|----------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.9500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41927.0600 | 13874.2000 | 25628.5800 | 12814.2900 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8080 | -0.1248 | 0.0039 |
| 14 | | 40567.0800 | | | | | | | |
| CFE | | | | -1975.2790 | | | | | |
| MAD | | | | 15832.8900 | | | | | |
| MSE | | | | 293529500.0000 | | | | | |
| MAPE | | | | 57.8080 | | | | | |
| Trk. Signal | | | | -0.1248 | | | | | |
| R-square | | | | 0.0039 | | | | | |
| | | | | m=6 | | | | | |



ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน มี.ค 2555 (MA=5)

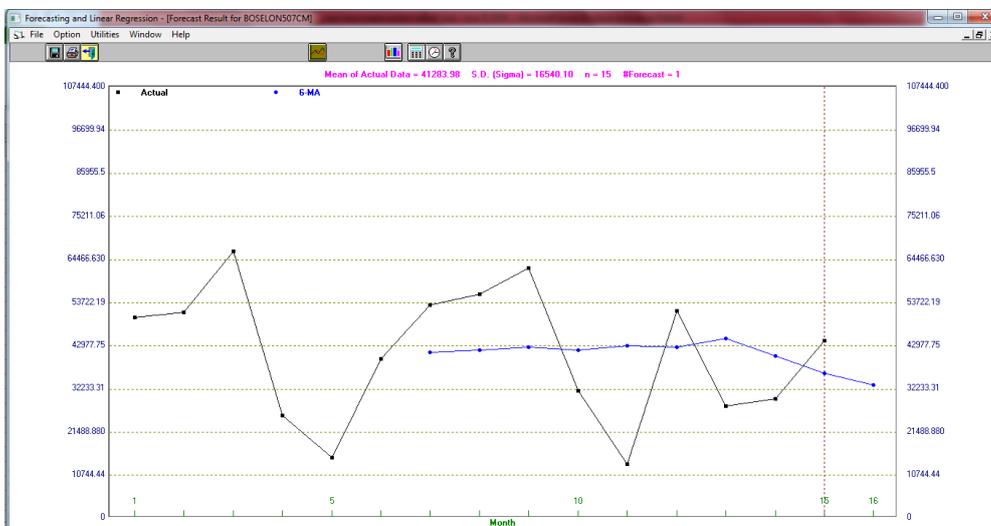
Forecasting and Linear Regression - [Forecast Result for BOSELON507CM]

| 08-19-2013 Month | Actual Data | Forecast by 5-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|------------------|-------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | 41752.2700 | -2014.1640 | -2014.1640 | 2014.1640 | 4056857.0000 | 5.0686 | -1.0000 | |
| 7 | 53170.9600 | 39678.2900 | 13492.6800 | 11478.5100 | 7753.4200 | 93054580.0000 | 15.2223 | 1.4804 | 0.7540 |
| 8 | 55801.2600 | 40048.3000 | 15752.9600 | 27231.4700 | 10419.9300 | 144754900.0000 | 19.5584 | 2.6134 | |
| 9 | 62452.6900 | 37899.4800 | 24553.2100 | 51784.6800 | 13953.2500 | 259281300.0000 | 24.4975 | 3.7113 | |
| 10 | 31782.3500 | 45270.3300 | -13487.9800 | 38296.7000 | 13860.2000 | 243810100.0000 | 28.0857 | 2.7631 | 0.5182 |
| 11 | 13587.8000 | 48589.0700 | -35001.2700 | 3295.4300 | 17383.7100 | 407356600.0000 | 66.3370 | 0.1896 | 0.0496 |
| 12 | 51775.5200 | 43293.0100 | 8416.5080 | 11711.9400 | 16102.0800 | 359302500.0000 | 59.1825 | 0.7273 | 0.0586 |
| 13 | 28002.8700 | 43079.9300 | -15077.0600 | -3365.1190 | 15974.4800 | 342786900.0000 | 58.5149 | -0.2107 | 0.0427 |
| 14 | 29854.4900 | 37520.2500 | -7665.7660 | -11030.8800 | 15051.2900 | 311228800.0000 | 54.8662 | -0.7329 | 0.0563 |
| 15 | 31000.6100 | | | | | | | | |
| CFE | | | -11030.8800 | | | | | | |
| MAD | | | 15051.2900 | | | | | | |
| MSE | | | 311228800.0000 | | | | | | |
| MAPE | | | 54.8662 | | | | | | |
| Tr. Signal | | | -0.7329 | | | | | | |
| R-square | | | 0.0563 | | | | | | |
| | | | m=5 | | | | | | |



ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน เม.ย. 2555 (MA=6)

| 08-19-2013 Month | Actual Data | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41927.0600 | 13874.2000 | 25628.5800 | 12814.2900 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6308 | 2.5315 | 0.5880 |
| 11 | 13987.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42795.5300 | 9019.9900 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.3429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1575.2700 | 15832.8900 | 23525500.0000 | 57.8880 | -0.1240 | 0.0039 |
| 14 | 29854.4900 | 40567.0800 | -10712.5900 | -12687.8700 | 15192.8500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0150 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | 4598.2310 | 14403.6100 | 248323200.0000 | 50.9763 | -0.3192 | 0.0225 |
| 16 | | 33222.5500 | | | | | | | |
| CFE | | | -4598.2310 | | | | | | |
| MAD | | | 14403.6100 | | | | | | |
| MSE | | | 248323200.0000 | | | | | | |
| MAPE | | | 50.9763 | | | | | | |
| Trk Signal | | | -0.3192 | | | | | | |
| R-square | | | 0.0225 | | | | | | |
| | | | m=6 | | | | | | |



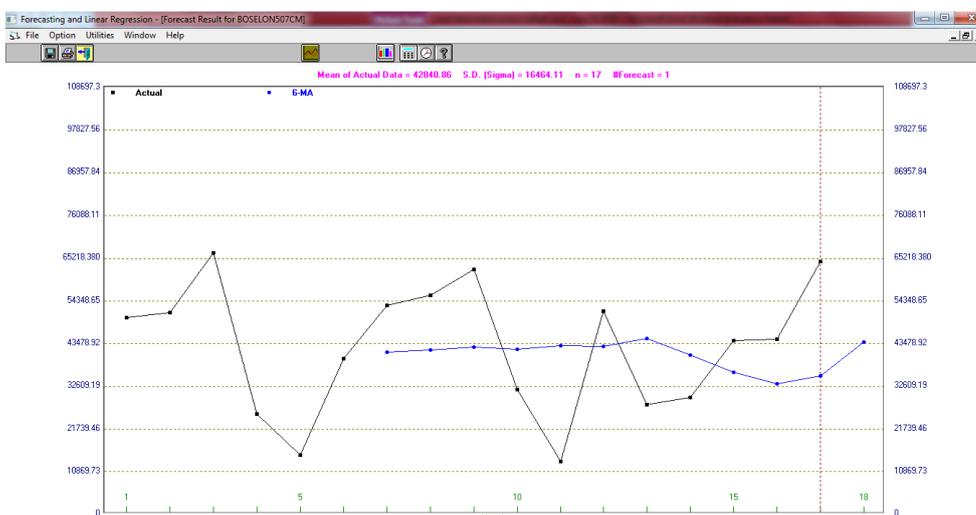
ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน พ.ค. 2555 (MA=7)

| 08-19-2013 Month | Actual Data | Forecast by 7-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | | | | | | | | |
| 8 | 55801.2600 | 43095.7800 | 12705.4800 | 12705.4800 | 12705.4800 | 161429300.0000 | 22.7692 | 1.0000 | |
| 9 | 62452.6900 | 43989.0900 | 18543.6000 | 31249.0800 | 15624.5400 | 252647200.0000 | 26.2307 | 2.0000 | |
| 10 | 31782.3500 | 45493.3500 | -13717.0000 | 17532.0800 | 14989.7000 | 231150200.0000 | 31.8795 | 1.1697 | 0.2025 |
| 11 | 13987.8000 | 40533.2000 | -26545.4000 | 9413.3100 | 17977.8700 | 354076300.0000 | 73.4816 | -0.5236 | 0.0231 |
| 12 | 51775.5200 | 39817.4000 | 12958.1200 | 3544.8130 | 16373.3000 | 317483600.0000 | 63.7988 | 0.2988 | 0.0194 |
| 13 | 28002.8700 | 44044.1000 | -16041.2300 | -12496.4300 | 16818.4700 | 307456500.0000 | 62.7064 | -0.7430 | 0.0317 |
| 14 | 29854.4900 | 42367.6300 | -12513.1400 | -25009.5700 | 16203.4200 | 285902500.0000 | 59.7360 | -1.5435 | 0.0635 |
| 15 | 44332.2600 | 39036.7100 | 5295.5510 | 19714.0200 | 14839.9400 | 253670100.0000 | 53.7621 | -1.3284 | 0.0472 |
| 16 | 44568.2500 | 37298.2000 | 7169.9630 | -12544.9500 | 13967.7200 | 231196500.0000 | 49.5761 | -0.8960 | 0.0411 |
| 17 | | 34843.3600 | | | | | | | |
| CFE | | | -12544.9500 | | | | | | |
| MAD | | | 13967.7200 | | | | | | |
| MSE | | | 231196500.0000 | | | | | | |
| MAPE | | | 49.5761 | | | | | | |
| Trk Signal | | | -0.8960 | | | | | | |
| R-square | | | 0.0411 | | | | | | |
| | | | m=7 | | | | | | |



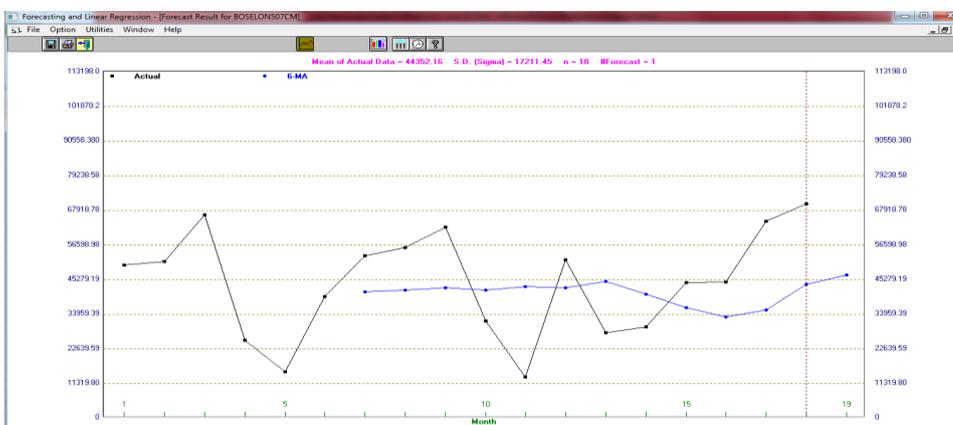
ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน มิ.ย. 2555 (MA=6)

| Month | Actual Data | Forecast by E-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|-------------|-------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41927.0600 | 13874.2000 | 25628.5800 | 12814.2900 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6300 | 42673.7900 | 19778.8000 | 45407.4800 | 15135.8300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41591.5800 | -10209.2300 | 35198.1500 | 13904.2000 | 205525600.0000 | 27.6300 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8080 | -0.1248 | 0.0039 |
| 14 | 29854.4900 | 40567.0800 | -10712.5900 | -12687.8700 | 15192.8500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0150 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | -4598.2310 | 14463.6100 | 246323200.0000 | 58.9763 | -0.3192 | 0.0225 |
| 16 | 44568.2500 | 33222.5500 | 11345.7000 | 6747.4650 | 14097.8200 | 236363300.0000 | 48.4244 | 0.4786 | 0.0543 |
| 17 | 64466.7400 | 35353.5400 | 29113.2000 | 35860.6700 | 15462.8500 | 291928400.0000 | 48.1276 | 2.3192 | 0.0986 |
| 18 | | 43833.3600 | | | | | | | |
| CFE | | 35860.6700 | | | | | | | |
| MAD | | 15462.8500 | | | | | | | |
| MSE | | 291928400.0000 | | | | | | | |
| MAPE | | 48.1276 | | | | | | | |
| Trk. Signal | | 2.3192 | | | | | | | |
| R-square | | 0.0986 | | | | | | | |
| | | m=6 | | | | | | | |



ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.ค 2555 (MA=6)

| 09-19-2013 Month | Actual Data | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|-------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 65545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41327.0600 | 13874.2000 | 25629.5800 | 12814.2900 | 185329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240821200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8880 | -0.1248 | 0.0039 |
| 14 | 29654.4900 | 40567.0800 | -10712.5900 | -12687.8700 | 15192.9500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0150 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | -4598.2310 | 14403.6100 | 248323200.0000 | 50.9763 | -0.3192 | 0.0225 |
| 16 | 44568.2500 | 33222.5500 | 11345.7000 | 6747.4690 | 14097.8200 | 236363300.0000 | 48.4244 | 0.4786 | 0.0543 |
| 17 | 64466.7400 | 35353.5400 | 29113.2000 | 35860.6700 | 15462.8500 | 291928400.0000 | 48.1276 | 2.3192 | 0.0986 |
| 18 | 70844.2000 | 43833.3600 | 26210.8400 | 62071.5200 | 16358.5200 | 324851700.0000 | 47.2353 | 3.7944 | 0.1460 |
| 19 | | 46878.1400 | | | | | | | |
| CFE | | 62071.5200 | | | | | | | |
| MAD | | 16358.5200 | | | | | | | |
| MSE | | 324851700.0000 | | | | | | | |
| MAPE | | 47.2353 | | | | | | | |
| Trk.Signal | | 3.7944 | | | | | | | |
| R-square | | 0.1460 | | | | | | | |
| | | m=6 | | | | | | | |



| 09-19-2013 Month | Actual Data | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|-------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 65545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41327.0600 | 13874.2000 | 25629.5800 | 12814.2900 | 185329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240821200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8880 | -0.1248 | 0.0039 |
| 14 | 29654.4900 | 40567.0800 | -10712.5900 | -12687.8700 | 15192.9500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0150 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | -4598.2310 | 14403.6100 | 248323200.0000 | 50.9763 | -0.3192 | 0.0225 |
| 16 | 44568.2500 | 33222.5500 | 11345.7000 | 6747.4690 | 14097.8200 | 236363300.0000 | 48.4244 | 0.4786 | 0.0543 |
| 17 | 64466.7400 | 35353.5400 | 29113.2000 | 35860.6700 | 15462.8500 | 291928400.0000 | 48.1276 | 2.3192 | 0.0986 |
| 18 | 70844.2000 | 43833.3600 | 26210.8400 | 62071.5200 | 16358.5200 | 324851700.0000 | 47.2353 | 3.7944 | 0.1460 |
| 19 | | 46878.1400 | | | | | | | |
| 20 | | 52653.1400 | | | | | | | |
| CFE | | 77846.2500 | | | | | | | |
| MAD | | 16313.6100 | | | | | | | |
| MSE | | 319004800.0000 | | | | | | | |
| MAPE | | 45.5386 | | | | | | | |
| Trk.Signal | | 4.7719 | | | | | | | |
| R-square | | 0.1871 | | | | | | | |
| | | m=6 | | | | | | | |

ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ส.ค 2555 (MA=6)



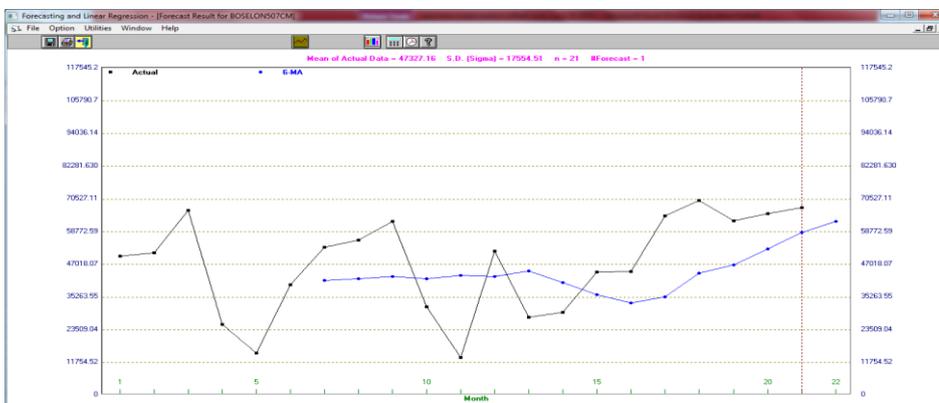
ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ก.ย 2555 (MA=6)

| 08-19-2013 Month | Actual Data | Forecast by 6-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 56801.2600 | 41927.0600 | 14874.2000 | 29629.5800 | 12814.2900 | 165229500.0000 | 23.4852 | 2.0600 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240621200.0000 | 26.3135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1600 | 13904.2000 | 206523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 13587.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.9700 | 44761.7700 | -16758.8000 | -1975.2790 | 15832.0900 | 295929500.0000 | 57.9800 | -0.1248 | 0.0029 |
| 14 | 29854.4500 | 40567.0800 | -10712.5900 | -12687.8700 | 15192.8500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0150 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | -4598.2310 | 14403.6100 | 248323200.0000 | 50.9763 | -0.3192 | 0.0225 |
| 16 | 44568.2500 | 33222.9500 | 11345.7000 | 6747.4630 | 14097.8200 | 236363300.0000 | 48.4244 | 0.4786 | 0.0543 |
| 17 | 64462.7400 | 35353.5400 | 29113.2000 | 58988.6700 | 15462.0500 | 291920400.0000 | 48.1276 | 2.3152 | 0.0986 |
| 18 | 70044.2000 | 43833.3600 | 26210.8400 | 62071.5200 | 16358.5200 | 324851700.0000 | 47.2353 | 3.7944 | 0.1460 |
| 19 | 62652.8800 | 46878.1400 | 15774.7400 | 77846.2500 | 16313.6100 | 319004800.0000 | 45.5386 | 4.7719 | 0.1871 |
| 20 | 65321.5300 | 52653.1400 | 12668.3900 | 90514.6400 | 16053.2400 | 307682200.0000 | 43.6711 | 5.6384 | 0.2359 |
| 21 | | 58584.3100 | | | | | | | |
| CFE | | 90514.6400 | | | | | | | |
| MAD | | 16053.2400 | | | | | | | |
| MSE | | 307682200.0000 | | | | | | | |
| MAPE | | 43.6711 | | | | | | | |
| Trk. Signal | | 5.6384 | | | | | | | |
| R-square | | 0.2359 | | | | | | | |
| | | m=6 | | | | | | | |



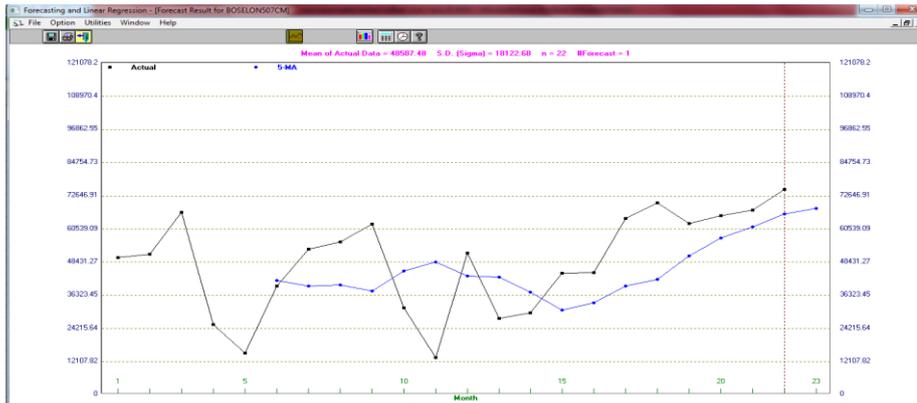
ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ต.ค 2555 (MA=6)

| 08-19-2013 Month | Actual Data | Forecast by E-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | | | | | | | | |
| 7 | 53170.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 55801.2600 | 41927.0600 | 13874.2000 | 25628.5800 | 12814.2900 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.6300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6800 | -10209.3300 | 35198.1500 | 13904.2000 | 208523500.0000 | 27.6908 | 2.5315 | 0.5880 |
| 11 | 12987.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 320497200.0000 | 65.4776 | 0.3380 | 0.0051 |
| 12 | 51775.5200 | 42755.5300 | 9019.9920 | 14783.6200 | 15678.5500 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8880 | -0.1240 | 0.0039 |
| 14 | 29854.4900 | 40967.0800 | -10712.5900 | -12687.8700 | 15192.8500 | 271183300.0000 | 55.0674 | -0.8351 | 0.0190 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | 4598.2310 | 14403.6100 | 248323200.0000 | 58.9763 | -0.3182 | 0.0226 |
| 16 | 44568.2500 | 33222.5500 | 11345.7000 | 6747.4830 | 14097.8200 | 236363300.0000 | 48.4244 | 0.4786 | 0.0543 |
| 17 | 64466.7400 | 35353.5400 | 29113.2000 | 39860.6700 | 15462.8500 | 291928400.0000 | 48.1276 | 2.3192 | 0.0986 |
| 18 | 70044.2000 | 43833.3600 | 26210.8400 | 62071.5200 | 16358.5200 | 324851700.0000 | 47.2353 | 3.7944 | 0.1460 |
| 19 | 62852.8800 | 46878.1400 | 15774.7400 | 77846.2500 | 16313.6100 | 319004800.0000 | 45.5386 | 4.7719 | 0.1871 |
| 20 | 65321.5300 | 52852.1400 | 12668.3900 | 90514.6400 | 16853.2400 | 307682200.0000 | 43.6711 | 5.6384 | 0.2359 |
| 21 | 67557.8800 | 58954.3100 | 8992.7660 | 99507.4100 | 15582.5400 | 292561400.0000 | 41.6472 | 6.3858 | 0.2970 |
| 22 | 62435.1100 | | | | | | | | |
| CFE | | 99507.4100 | | | | | | | |
| MAD | | 15582.5400 | | | | | | | |
| MSE | | 292561400.0000 | | | | | | | |
| MAPE | | 41.6472 | | | | | | | |
| Trk. Signal | | 6.3858 | | | | | | | |
| R-square | | 0.2970 | | | | | | | |
| | | m=6 | | | | | | | |



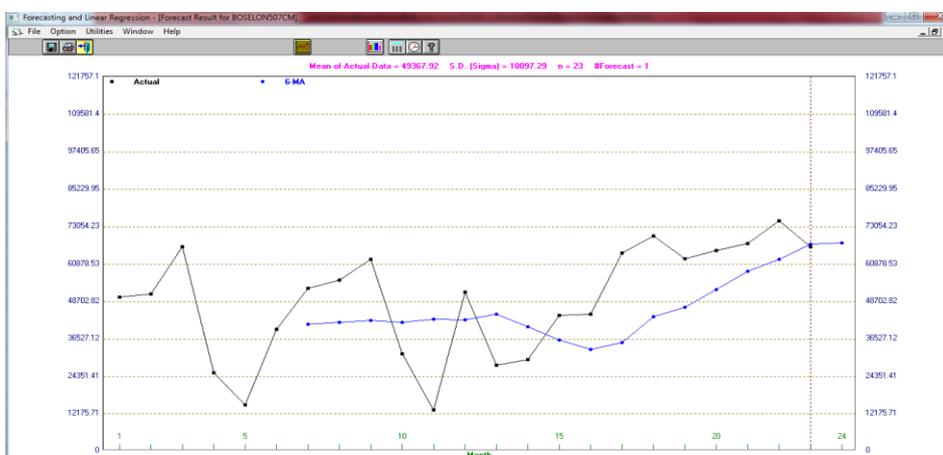
ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน พ.ย 2555 (MA=5)

| 08-19-2013 Month | Actual Data | Forecast by 5-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 66545.4000 | | | | | | | | |
| 4 | 25598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39738.1100 | 41752.2700 | -2014.1640 | -2014.1640 | 2014.1640 | 4056897.0000 | 5.0686 | -1.0000 | |
| 7 | 53170.9600 | 39678.2900 | 13492.6800 | 11478.5100 | 7753.4200 | 93954580.0000 | 15.2223 | 1.4804 | 0.7540 |
| 8 | 55801.2600 | 40848.3000 | 15752.9600 | 27231.4700 | 10419.9300 | 144754900.0000 | 19.5584 | 2.6134 | |
| 9 | 62452.6900 | 37899.4800 | 24553.2100 | 51784.6800 | 13953.2500 | 258281300.0000 | 24.4975 | 3.7113 | |
| 10 | 31782.3500 | 45270.3300 | -13487.9800 | 38296.7000 | 13860.2000 | 243810100.0000 | 28.0857 | 2.7631 | 0.5182 |
| 11 | 12987.8000 | 48989.0700 | -36001.2700 | 3295.4300 | 17383.7100 | 407396600.0000 | 66.3370 | 0.1896 | 0.0496 |
| 12 | 51775.5200 | 43393.0100 | 8416.5800 | 11711.3400 | 16102.6800 | 39582500.0000 | 59.1825 | -0.7273 | 0.0586 |
| 13 | 28002.8700 | 43079.9300 | -15077.0600 | -3365.1190 | 15974.4800 | 342786900.0000 | 58.5149 | -0.2107 | 0.0427 |
| 14 | 29854.4900 | 37520.2500 | 7665.7660 | -11030.8800 | 15051.2900 | 311228800.0000 | 54.8662 | -0.7329 | 0.0563 |
| 15 | 44332.2600 | 31080.6100 | 13231.6500 | 2280.7810 | 14079.3200 | 297879200.0000 | 52.3868 | -0.1546 | 0.1011 |
| 16 | 44568.2500 | 33510.5900 | 11057.6600 | 13358.4500 | 14651.3000 | 281914900.0000 | 49.8793 | 0.5192 | 0.1312 |
| 17 | 64466.7400 | 39706.6800 | 24760.0600 | 38118.5000 | 15384.2500 | 309510400.0000 | 48.9238 | 2.4778 | 0.1470 |
| 18 | 70044.2000 | 42244.9200 | 27799.2800 | 65917.7800 | 16339.2500 | 345148800.0000 | 48.2134 | 4.0343 | 0.1840 |
| 19 | 62852.8800 | 50853.1800 | 11999.6900 | 77817.4700 | 16029.2800 | 336778800.0000 | 46.1376 | 4.8609 | 0.2261 |
| 20 | 65321.5300 | 52712.8600 | 8108.6680 | 86026.1400 | 15501.2400 | 313111200.0000 | 43.8894 | 5.5496 | 0.2859 |
| 21 | 67557.8800 | 61410.7200 | 6146.3590 | 92172.5000 | 14916.5600 | 295902800.0000 | 41.7149 | 6.1792 | 0.3530 |
| 22 | 70954.2200 | 66898.4800 | 9045.7340 | 101218.2000 | 14571.2200 | 283310000.0000 | 39.9700 | 6.9464 | 0.4215 |
| 23 | | 58125.8800 | | | | | | | |
| CFE | | 101218.2000 | | | | | | | |
| MAD | | 14571.2200 | | | | | | | |
| MSE | | 283310000.0000 | | | | | | | |
| MAPE | | 39.9700 | | | | | | | |
| Trk. Signal | | 6.9464 | | | | | | | |
| R-square | | 0.4215 | | | | | | | |
| | | m=5 | | | | | | | |



ผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ธ.ค 2555 (MA=6)

| Month | Actual Data | Forecast by 5-MA | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|-------------|-------------|------------------|----------------|-------------|------------|----------------|----------|-----------------|----------|
| 1 | 50108.0500 | | | | | | | | |
| 2 | 51320.8700 | | | | | | | | |
| 3 | 65545.4000 | | | | | | | | |
| 4 | 29598.4300 | | | | | | | | |
| 5 | 15188.6100 | | | | | | | | |
| 6 | 39726.1100 | | | | | | | | |
| 7 | 53179.9600 | 41416.5800 | 11754.3800 | 11754.3800 | 11754.3800 | 138165500.0000 | 22.1068 | 1.0000 | |
| 8 | 59801.2600 | 41927.0600 | 13874.2000 | 25628.5800 | 12814.2000 | 165329500.0000 | 23.4852 | 2.0000 | |
| 9 | 62452.6900 | 42673.7900 | 19778.9000 | 45407.4800 | 15135.8300 | 240621200.0000 | 26.2135 | 3.0000 | |
| 10 | 31782.3500 | 41991.6000 | -10209.2500 | 35198.1600 | 13984.2000 | 208523500.0000 | 27.6980 | 2.5315 | 0.5880 |
| 11 | 13987.8000 | 43022.3300 | -29434.5300 | 5763.6250 | 17010.2700 | 338497200.0000 | 65.4776 | 0.3388 | 0.0051 |
| 12 | 51775.5200 | 42795.5300 | 9019.9920 | 14783.6200 | 15678.5600 | 295641000.0000 | 57.4682 | 0.9429 | 0.0226 |
| 13 | 28002.8700 | 44761.7700 | -16758.9000 | -1975.2790 | 15832.8900 | 293529500.0000 | 57.8080 | -0.1248 | 0.0039 |
| 14 | 29954.4900 | 49567.0800 | -19712.5900 | -12887.8700 | 15102.8900 | 271183300.0000 | 55.0674 | -0.8551 | 0.0160 |
| 15 | 44332.2600 | 36242.6200 | 8089.6410 | -4598.2310 | 14403.6100 | 248323200.0000 | 50.9763 | -0.3192 | 0.0225 |
| 16 | 44568.2500 | 33222.5000 | 11345.7500 | 6747.4690 | 14097.8200 | 236363300.0000 | 48.4244 | 0.4786 | 0.0543 |
| 17 | 64468.7400 | 35353.5400 | 29115.2000 | 39860.6700 | 15462.8600 | 291928400.0000 | 48.1276 | 2.3192 | 0.0986 |
| 18 | 70044.2000 | 43833.3600 | 26210.8400 | 62071.5200 | 16398.5200 | 324851700.0000 | 47.2353 | 3.7944 | 0.1460 |
| 19 | 62652.8800 | 46878.1400 | 15774.7400 | 77846.2500 | 16313.6100 | 319048800.0000 | 45.5386 | 4.7719 | 0.1871 |
| 20 | 85321.5300 | 52653.1400 | 12668.3900 | 90514.6400 | 16883.2400 | 307682200.0000 | 43.6711 | 5.6384 | 0.2359 |
| 21 | 67957.0800 | 58564.3100 | 8392.7660 | 99507.4100 | 15562.6400 | 292661400.0000 | 41.6472 | 6.3858 | 0.2910 |
| 22 | 75954.2200 | 62435.1100 | 12619.1100 | 112126.5000 | 15397.3300 | 284228900.0000 | 40.0950 | 7.2822 | 0.3602 |
| 23 | 66537.6400 | 67516.1100 | -978.4688 | 111148.0000 | 14549.1600 | 267565900.0000 | 37.8230 | 7.6395 | 0.4351 |
| 24 | 67861.2600 | | | | | | | | |
| CFE | | 111148.0000 | | | | | | | |
| MAD | | 14549.1600 | | | | | | | |
| MSE | | 267565900.0000 | | | | | | | |
| MAPE | | 37.8230 | | | | | | | |
| Trk. Signal | | 7.6395 | | | | | | | |
| R-square | | 0.4351 | | | | | | | |
| | | m=6 | | | | | | | |



การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน พ.ค 2556 (LR)

| 11-17-2013 Month | Actual Data | Forecast by SEST | Forecast by DEST | Forecast by LR | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|---------------------|----------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 44568.2500 | | | 56433.6600 | -11865.4100 | -11865.4100 | 11865.4100 | 140787900.0000 | 26.6230 | -1.0000 | 0.1067 |
| 2 | 64466.7400 | 44568.2500 | 44568.2500 | 58695.2500 | 5771.4880 | 6093.9180 | 8818.4470 | 87048970.0000 | 17.7878 | -0.6310 | 0.0368 |
| 3 | 70044.2000 | 53725.5400 | 54517.4900 | 60996.8400 | 9087.3630 | 2993.4450 | 8908.0860 | 89559370.0000 | 16.1831 | 0.3360 | 0.0740 |
| 4 | 62652.8800 | 62632.2600 | 63524.5000 | 63218.3000 | -565.3500 | 2427.8950 | 6822.4520 | 64249490.0000 | 12.3630 | 0.3559 | 0.0740 |
| 5 | 85321.5300 | 65184.1900 | 65302.7600 | 65480.0200 | -158.4883 | 2269.4060 | 5489.6590 | 51404620.0000 | 9.9389 | 0.4134 | 0.1357 |
| 6 | 67557.0800 | 67791.2900 | 67471.7400 | 67741.6100 | -184.5313 | 2084.8750 | 4605.4710 | 42842860.0000 | 8.3280 | 0.4527 | 0.2170 |
| 7 | 75054.2200 | 70237.0400 | 69675.1800 | 70003.2000 | 5051.0160 | 7135.8910 | 4669.1210 | 40367130.0000 | 8.0997 | 1.5283 | 0.2724 |
| 8 | 66537.6400 | 74990.9900 | 74530.8000 | 72264.8000 | -5727.1560 | 1408.7340 | 4801.3750 | 39421280.0000 | 8.1631 | 0.2934 | 0.3861 |
| 9 | 70593.8900 | 73976.0200 | 73036.5200 | 74526.3800 | -3932.4920 | -2523.7580 | 4704.8330 | 36759410.0000 | 7.8751 | -0.5364 | 0.5216 |
| 10 | 76638.2900 | 74701.4800 | 73817.9200 | 76787.9800 | -149.8875 | -2673.4450 | 4249.3180 | 33085710.0000 | 7.1071 | -0.6291 | 0.5975 |
| 11 | 79655.7700 | 77637.1600 | 77078.1600 | 79049.5600 | 606.2109 | -2067.2340 | 3918.1270 | 30111330.0000 | 6.5302 | -0.5276 | 0.6482 |
| 12 | 90282.2900 | 80746.5100 | 80393.3000 | 81311.1600 | 8971.1330 | 6903.8980 | 4339.2100 | 34308820.0000 | 6.8141 | 1.5910 | 0.5479 |
| 13 | 76668.8900 | 87456.9500 | 87525.2300 | 83572.7500 | -6903.8950 | 0.0391 | 4536.4910 | 35336080.0000 | 6.9826 | 0.0000 | 0.6696 |
| 14 | | 85483.7800 | 84902.5500 | 85834.3400 | | | | | | | |
| 15 | | 87717.9500 | 87029.5200 | 88095.9300 | | | | | | | |
| 16 | | 89952.1300 | 89196.4800 | 90357.5200 | | | | | | | |
| CFE | | 31825.8200 | 34031.5600 | | | | | | | | |
| MAD | | 6461.7780 | 6529.9210 | | | | | | | | |
| MSE | | 81963820.0000 | 80569810.0000 | 35336080.0000 | | | | | | | |
| MAPE | | 9.0302 | 9.1041 | | | | | | | | |
| Trk. Signal | | 4.9252 | 5.2116 | | | | | | | | |
| R-square | | | | | | | | | | | 0.6696 |
| | | Alpha=0.39 | Alpha=0.25 | Y-intercept=54172.07 | | | | | | | |
| | | Beta=0.18 | F(0)=44568.25 | Slope=2261.931 | | | | | | | |
| | | F(0)=44568.25 | F(0)=44568.25 | | | | | | | | |
| | | T(0)=0 | | | | | | | | | |

การพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน มิ.ย 2556 (LR)

| 11-17-2013 Month | Actual Data | Forecast by SEST | Forecast by DEST | Forecast by LR | Forecast Error | CFE | MAD | MSE | MAPE (%) | Tracking Signal | R-square |
|---------------------|----------------|---------------------|---------------------|----------------------|-------------------|-------------|------------|----------------|----------|--------------------|----------|
| 1 | 44568.2500 | | | 56507.8200 | -11939.5700 | -11939.5700 | 11939.5700 | 142553300.0000 | 26.7894 | -1.0000 | 0.1105 |
| 2 | 64466.7400 | 44568.2500 | 44568.2500 | 58750.8700 | 5715.8670 | 6223.7030 | 8827.7190 | 87612240.0000 | 17.8279 | -0.7050 | 0.0355 |
| 3 | 70044.2000 | 54031.9700 | 54517.4900 | 60993.9200 | 9050.2810 | 2826.5780 | 8901.9060 | 85710630.0000 | 16.1922 | 0.3175 | 0.0723 |
| 4 | 62652.8800 | 62952.7300 | 63524.5000 | 63236.9700 | -584.0898 | 2242.4880 | 6822.4520 | 64368310.0000 | 12.3772 | 0.3287 | 0.1332 |
| 5 | 85321.5300 | 65165.8600 | 65302.7600 | 65480.0200 | -158.4883 | 2084.0000 | 5489.6590 | 51499670.0000 | 9.9503 | 0.3796 | 0.2132 |
| 6 | 67557.0800 | 67575.9700 | 67471.7400 | 67723.0700 | -165.9922 | 1918.0080 | 4602.3810 | 42920980.0000 | 8.3329 | 0.4167 | 0.2677 |
| 7 | 75054.2200 | 69913.2700 | 69675.1800 | 69966.1300 | 5088.0940 | 7006.1020 | 4671.7690 | 40487800.0000 | 8.1109 | 1.4997 | 0.3798 |
| 8 | 66537.6400 | 74703.3500 | 74530.8000 | 72209.1700 | -5671.5310 | 1334.5700 | 4796.7390 | 39447610.0000 | 8.1625 | 0.2782 | 0.5131 |
| 9 | 70593.8900 | 73902.0400 | 73036.5200 | 74452.2200 | -3858.3280 | -2523.7580 | 4532.4710 | 35710620.0000 | 7.8629 | -0.5378 | 0.5131 |
| 10 | 76638.2900 | 74265.5400 | 73817.9200 | 76695.2700 | -56.9844 | -2580.7420 | 4228.9230 | 33047080.0000 | 7.0840 | -0.6103 | 0.5875 |
| 11 | 79655.7700 | 77349.8700 | 77078.1600 | 78938.3200 | 717.4531 | -1863.2890 | 3909.6980 | 30089600.0000 | 6.5219 | -0.4766 | 0.6375 |
| 12 | 90282.2900 | 80558.0500 | 80393.3000 | 81181.3800 | 9100.9140 | 7237.6250 | 4342.2990 | 34484350.0000 | 6.8184 | 1.6668 | 0.5393 |
| 13 | 76668.8900 | 87445.6700 | 87525.2300 | 83424.4200 | -6755.5310 | 482.0938 | 4527.9330 | 35342260.0000 | 6.9717 | 0.1065 | 0.6587 |
| 14 | 85185.4300 | 85220.9100 | 84902.5500 | 85667.4800 | -482.0469 | 0.0469 | 4238.9410 | 32834410.0000 | 6.5142 | 0.0000 | 0.7135 |
| 15 | | 87397.7500 | 87170.9600 | 87910.5200 | | | | | | | |
| 16 | | 89989.1400 | 89315.6100 | 90153.9800 | | | | | | | |
| 17 | | 91780.5300 | 91460.2600 | 92396.6300 | | | | | | | |
| CFE | | 33405.3700 | 34314.4400 | | | | | | | | |
| MAD | | 5985.7760 | 6049.3800 | | | | | | | | |
| MSE | | 75051510.0000 | 74378290.0000 | 32834410.0000 | | | | | | | |
| MAPE | | 8.3517 | 8.4293 | | | | | | | | |
| Trk. Signal | | 5.5808 | 5.6724 | | | | | | | | |
| R-square | | | | | | | | | | | 0.7135 |
| | | Alpha=0.41 | Alpha=0.25 | Y-intercept=54264.77 | | | | | | | |
| | | Beta=0.16 | F(0)=44568.25 | Slope=2243.050 | | | | | | | |
| | | F(0)=44568.25 | F(0)=44568.25 | | | | | | | | |
| | | T(0)=0 | | | | | | | | | |

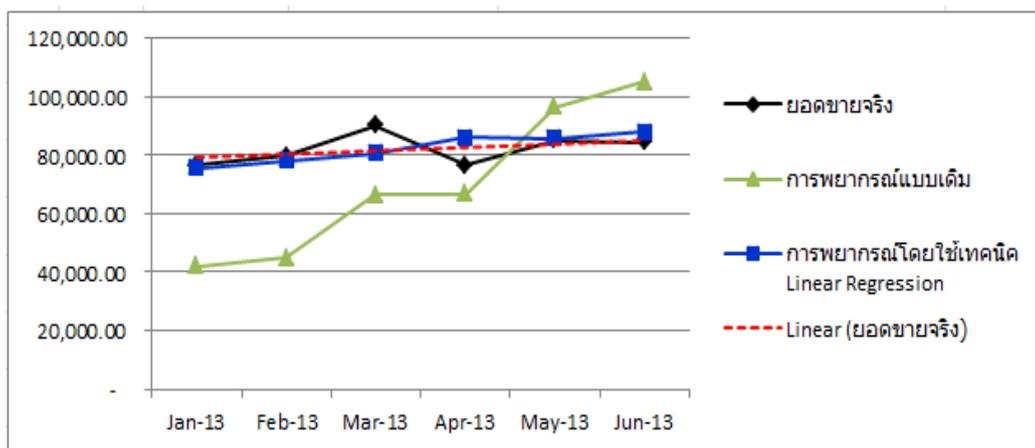
แสดงผลการพยากรณ์แต่ละวิธี

| สินค้าประเภท BOS507CM | | | | |
|-----------------------|------------------|--------|---------------|------------------------------|
| พยากรณ์ | ค่า error (MAPE) | | | เทคนิคการพยากรณ์ที่เลือก |
| ปี/เดือน | (SEST) | (DEST) | (LR) | |
| Jan-13 | 9.5668 | 9.6524 | 7.7205 | Linear Regression with Trend |
| Feb-13 | 8.9788 | 8.9888 | 7.0462 | Linear Regression with Trend |
| Mar-13 | 8.3689 | 8.4136 | 6.4962 | Linear Regression with Trend |
| Apr-13 | 8.5719 | 8.6445 | 7.0673 | Linear Regression with Trend |
| May-13 | 9.0302 | 9.1041 | 6.9826 | Linear Regression with Trend |
| Jun-13 | 8.3517 | 8.4293 | 6.5142 | Linear Regression with Trend |

แสดงผลการพยากรณ์ความต้องการสินค้าประเภท BOS507CM เดือน ม.ค – มิ.ย ปี 2556

| ปี 2556 | การพยากรณ์โดยใช้เทคนิค Linear Regression | ค่า Error |
|------------|--|--------------|
| Jan-13 | 75,636.21 | MAPE=7.7205 |
| Feb-13 | 78,124.36 | MAPE=7.0462 |
| Mar-13 | 80,823.23 | MAPE=6.4962 |
| Apr-13 | 86,187.84 | MAPE= 7.0673 |
| May-13 | 85,834.34 | MAPE= 6.9826 |
| Jun-13 | 87,910.52 | MAPE=6.5142 |
| รวม | 494,516.50 | |

แสดงการเปรียบเทียบการพยากรณ์ความต้องการสินค้าจริง สินค้าประเภท BOS507CM ตั้งแต่ เดือน ม.ค ถึง มิ.ย.2556



ผลเปรียบเทียบการพยากรณ์ความต้องการสินค้าจริง สินค้าประเภท BOS507CM ตั้งแต่ เดือน ม.ค 2555 ถึง มิ.ย.2556

