# Arima for Price of Nasdaq 2000 – 2015

Series: adjusted

ARIMA(0,2,1)(0,0,1)[12]

Coefficients:

ma1 sma1

-0.9506 -0.2570

s.e. 0.0259 0.0964

sigma^2 estimated as 31829: log likelihood=-1170.46

AIC=2346.92 AICc=2347.06 BIC=2356.45

# Predicted Prices

Point Forecast Lo 80 Hi 80 Lo 95 Hi 95

Dec 2014 4834.557 4605.920 5063.193 4484.887 5184.226

Jan 2015 4904.706 4573.279 5236.133 4397.832 5411.580

Feb 2015 4926.718 4510.830 5342.607 4290.672 5562.765

Mar 2015 5022.571 4530.750 5514.391 4270.396 5774.745

Apr 2015 5111.786 4548.872 5674.700 4250.883 5972.689

May 2015 5141.965 4510.955 5772.975 4176.919 6107.012

Jun 2015 5182.744 4485.574 5879.914 4116.515 6248.973

Jul 2015 5249.569 4487.503 6011.635 4084.089 6415.049

Aug 2015 5277.199 4451.047 6103.350 4013.709 6540.688

Sep 2015 5342.481 4452.737 6232.225 3981.735 6703.227

Oct 2015 5383.521 4430.444 6336.598 3925.915 6841.126

Nov 2015 5401.821 4385.496 6418.145 3847.487 6956.155

# Actual Prices

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Jun 1, 2015 | 5,094.94 | 5,114.60 | 4,974.62 | 5,076.69 | 2,024,238,700 | 5,076.69 |
| May 1, 2015 | 4,966.32 | 5,111.54 | 4,888.17 | 5,070.03 | 1,815,642,000 | 5,070.03 |
| Apr 1, 2015 | 4,894.36 | 5,119.83 | 4,844.39 | 4,941.42 | 1,829,949,000 | 4,941.42 |
| Mar 2, 2015 | 4,973.43 | 5,042.14 | 4,825.93 | 4,900.88 | 1,956,450,000 | 4,900.88 |
| Feb 2, 2015 | 4,650.60 | 4,989.25 | 4,580.46 | 4,963.53 | 1,985,720,000 | 4,963.53 |
| Jan 2, 2015 | 4,760.24 | 4,777.01 | 4,563.11 | 4,635.24 | 2,049,163,000 | 4,635.24 |
| Dec 1, 2014 | 4,777.73 | 4,814.95 | 4,547.31 | 4,736.05 | 1,868,304,000 | 4,736.05 |

# Model for Returns

ARIMA(3,1,1)(1,0,0)[12] with drift

Coefficients:

ar1 ar2 ar3 ma1 sar1 drift

-0.0525 -0.1475 -0.1566 -0.9357 -0.2164 0.9492

s.e. 0.0896 0.0860 0.0871 0.0462 0.1022 0.5894

sigma^2 estimated as 30730: log likelihood=-1160.28

AIC=2334.55 AICc=2335.21 BIC=2356.78

# Predicted Returns

Point Forecast Lo 80 Hi 80 Lo 95 Hi 95

Dec 2014 69.18856 -155.46538 293.8425 -274.3900 412.7671

Jan 2015 81.25068 -143.41879 305.9202 -262.3516 424.8530

Feb 2015 38.02557 -187.43304 263.4842 -306.7836 382.8348

Mar 2015 126.74527 -99.61135 353.1019 -219.4373 472.9278

Apr 2015 120.49943 -106.56087 347.5597 -226.7593 467.7582

May 2015 69.15035 -158.73920 297.0399 -279.3766 417.6773

Jun 2015 67.58768 -160.72763 295.9030 -281.5905 416.7658

Jul 2015 107.55477 -120.90216 336.0117 -241.8400 456.9495

Aug 2015 61.34500 -167.28591 289.9759 -288.3158 411.0058

Sep 2015 111.47975 -117.39678 340.3563 -238.5567 461.5162

Oct 2015 82.41360 -146.74200 311.5692 -268.0496 432.8768

Nov 2015 68.33286 -161.08106 297.7468 -282.5254 419.1912

# Actual Returns

-100.80957 328.28955 -62.64990 40.54004 128.60986