# Option Valuation

The value of a call option can be found as follows:

$$V_c = P_0 \, N_{d_1} - \frac{X}{e^{k_{RF} t}} \, N_{d_2}$$

$$d_1 = \frac{\left[ \ln\left(\frac{P_0}{X}\right) + (k_{RF} + .5\sigma^2)t \right]}{\sigma\sqrt{t}}$$

$$d_2 = d_1 - \sigma\sqrt{t}$$

The value for a put option, can then be found from the following put-call parity relationship.

$$V_p = V_c + \frac{X}{e^{k_{RF} T}} - P_0$$