

Value Line® Stock Index

Originally the futures were based on the geometrically-averaged Value Line Composite Index or “cash” as commonly referred to by traders.

On March 9, 1988, this calculation was changed for the Value Line contract to an arithmetic formula. Primarily, this change occurred because of the mathematical nature of a geometric average to always underperform an arithmetic average. Arithmetic rather than geometric averaging means the Value Line will rise more in an up market and fall less in a down market.

The mathematical formula for the arithmetic index is:

$$I_c = I_p \times \left(\frac{\frac{P_1}{C_1} + \frac{P_2}{C_2} + \dots + \frac{P_n}{C_n}}{N} \right)$$

The formula for the geometric index is:

$$I_c = I_p \times \left(\frac{P_1}{C_1} \times \frac{P_2}{C_2} \times \dots \times \frac{P_n}{C_n} \right)^{1/N}$$

I_c = Current value of the index

I_p = Closing value of the index on the previous day

P_1 = Current price of stock 1

C_1 = Closing price of stock 1 on the previous day

N = Number of stocks in the index