

Stock Market & Derivatives & The Golden Mean Parabola

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Submitted: 2024, Aug 30; Accepted: 2024, Oct 18; Published: 2024, Nov 02

Citation: Cusack. P. T. E. (2024). Stock Market & Derivatives & The Golden Mean Parabola. *J Eco Res & Rev*, 4(3), 01-03.

There isn't a single equation that governs the entire stock market due to its complexity and the multitude of factors influencing it. However, there are several important mathematical models and formulas used to understand and predict market behavior. One of the most notable is the Black-Scholes equation, which is a partial differential equation used to price options and other derivatives¹². This model helps in determining the fair price of options by considering factors like the underlying asset's price, volatility, time to expiration, and the risk-free interest rate. Source: Copilot

The stock market is made up of trigonometric functions added together in one market. It is a random walk. We know chaotic systems lead to order from a previous paper by this author.

So Fourier Analysis applies.

$$\mathcal{L}^{-1}[-\infty \rightarrow \infty f)(t) \cdot e^{i2\pi ft}$$

$$t^2 = \int (t^2 - t - 1) \cdot e^{it}$$

$$t^2 = \{(4t^3 - 3t^2 - 6t)/6\} \cdot e^{-it}$$

Let $t=1.618$

$$t^2 = (-1) e^1$$

$$t^2 = E \cdot E$$

$$E = t$$

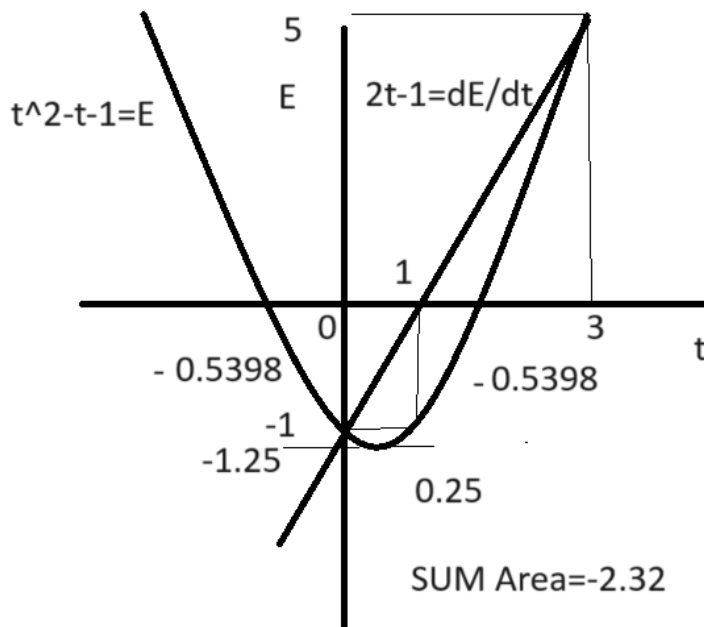


Figure 1: GMP with Fair Coin Equation and its derivative

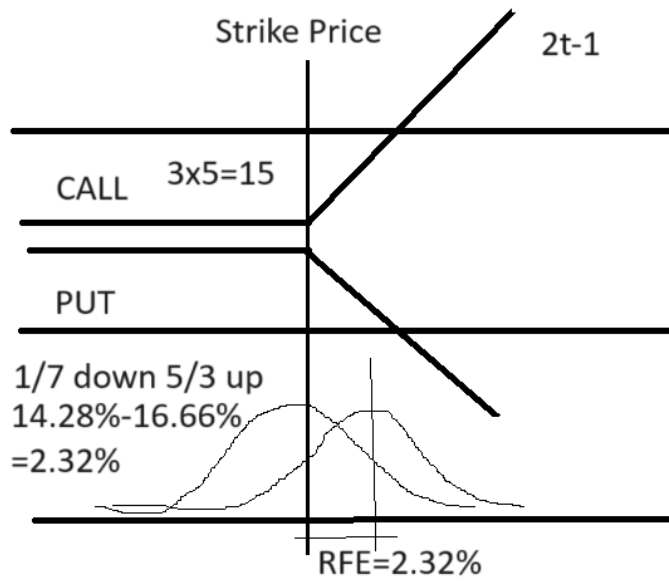


Figure 2: Derivatives

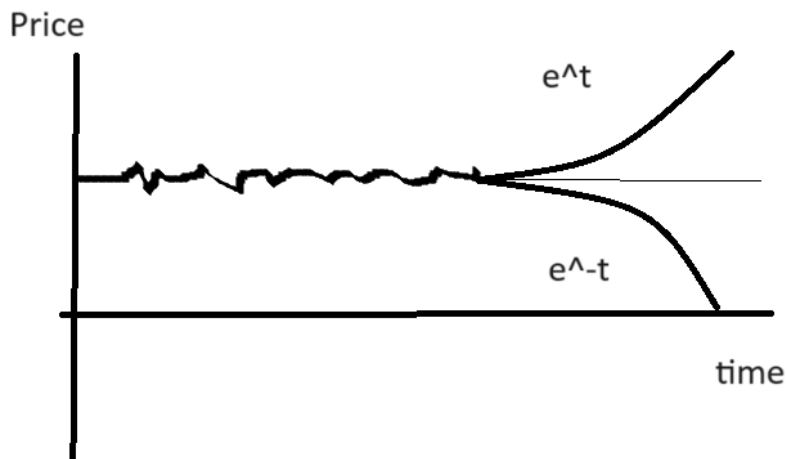


Figure 3: Market projection

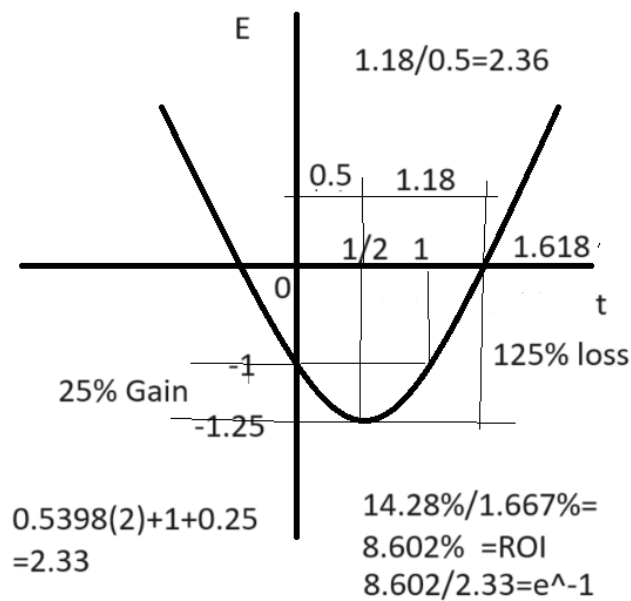


Figure 4

$$1.25/[1/8\%]=13.5$$

$$t=e^M=e^{13.5}=0.729=\alpha \text{ fine structure constant}$$

$$\text{GMP: } E=1.1973$$

$$19.73\% \approx 20.08=e^3=E$$

$$5.11^2-5.11-1=20.08$$

$$Me=5.1097 \approx 5.11$$

European Call options have generally three terms:

$$t=1 \text{ month}=30 \text{ days} / 1.618=18.54$$

$$t=3 \text{ months}=90 \text{ days} / 1.618=55.6$$

$$t=6 \text{ months}=1/2 \text{ year} \times 1.618=0.809$$

$$E=e^t=e^1=2.718 \quad 2t-1=2(2.718)-1=44.4$$

$$E=e^{0.556}=1 \text{ rad}=e^{it} \quad t=1 \quad 2t-1=2(1)-1=1$$

$$E=e^{0.809}=2.246 \quad 2t-1=2(1.618)-1=2.236$$

$$t=e^{-1}$$

$$t^2-t-1=E$$

$$(e^1)^2-e^1-1=20.08=e^3=E$$

Chaos to order

$$\sin 45^\circ + \cos 45^\circ = \sqrt{2}=E$$

$$e^{it} = \cos t + i \sin t$$

$$e^{0.618t} = \cos t + 0.618 \sin t$$

$$0.618t \ln e = \cos t + 0.618 \sin t$$

Divide by (-.618)

$$-t = -0.618 \cos t - \sin t$$

$$-t = -0.618 (\cos t) - \sin t$$

$$t=i=0.618$$

$$-0.618 = -0.618 \cos 0.618 - \sin 0.618$$

$$-t = \cos 0.618 - 1.618 \sin 0.618$$

$$\text{Let } \cos \theta = \sin \theta$$

$$-t \sin \theta + 1.618 \sin \theta$$

$$t \sin \theta - \sin \theta - t = 0$$

$$t = \sin \theta$$

$$t^2 - t - \sin \theta = 0$$

$$\sin \theta = 1$$

$$\theta = \pi/2 = t$$

$$t^2 - t - 1 = 0 \text{ GMP}$$

$$e^{it} = \cos t + i \sin t$$

$$e^{(0.618)(\pi/2)} = 0 + 0.618 \times 1$$

$$0.264 = 0.618 = i$$

$$\mathcal{L} = \int_{0 \rightarrow \infty} t^2 - t - 1 \bullet e^{it}$$

$$264 = -5/6$$

$$3.1679 = \pi + 0.023622 = \pi + e^{it} = \Sigma \pi / 10 \text{ NN} \pi$$

$$\mathcal{L} = N\pi - \pi - e^{it} = 0$$

$$\pi^2 - \pi - 1 = 0$$

$$it = 0$$

$$t = 0, \pi$$

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