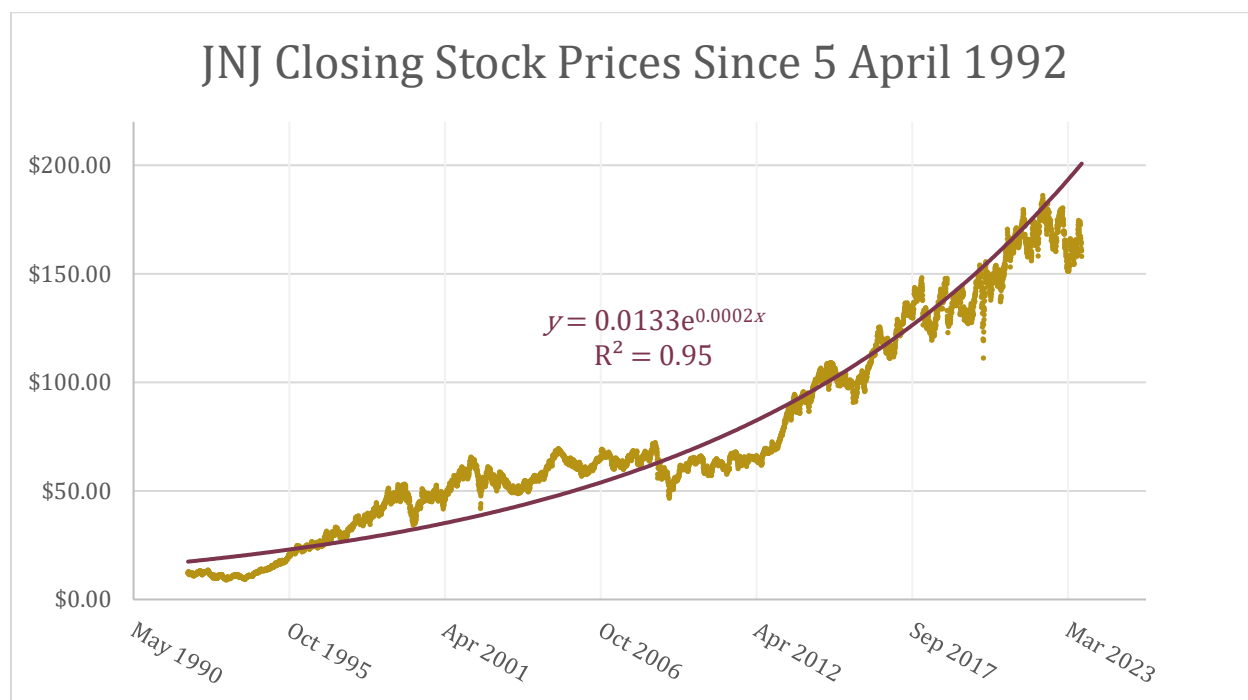


Regression Assignment Sequel

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Plotted here are the closing stock prices of Johnson & Johnson, JNJ, on the New York Stock Exchange since 5 April 1992 through April 2024, fetched using Microsoft Excel's built-in STOCKHISTORY function (*Microsoft*).



Plotted along with the stock prices is the exponential regression curve $y = 0.0133e^{0.0002x}$ which, knowing that values of financial assets tend to grow proportional to their current value over time, will serve as an appropriate model for stock price. The closeness of the R^2 value to one attests to the accuracy of this model.

Since the units of our independent variable is *days*, the coefficient in the exponent, 0.0002, could be interpreted as the price of JNJ stock growing continually at a daily rate of 0.2%. To express this value at a more reasonable scale and non-continually, letting x days equal t years,

$$y = 0.0133e^{0.0002x} = 0.0133e^{0.0730t} = 0.0133(1.0757)^t.$$

This is to say that the value of JNJ is increasing at an average rate of about 7.57% per year.

References

Microsoft. STOCKHISTORY function. *Microsoft Support*. [Online] [Cited: April 26, 2024.]
<https://support.microsoft.com/en-us/office/stockhistory-function-1ac8b5b3-5f62-4d94-8ab8-7504ec7239a8>