

*** Incorrect Performance Calculations ***

In the Back Test Report, I believe the "Monthly Returns & Drawdowns (%)" and the "Annual Returns & Drawdowns (%)" are being incorrectly calculated.

In short, the denominator used in the performance calculation is being 'capitalised' at the end of each year BUT the tick-size is NOT being increased accordingly.

This means that the performance attribution for a profitable strategy will decrease exponentially over time to eventually become meaningless.

By way of example consider the following:

ESignal default settings:

Initial Capital = \$100,000

Number of Contracts = 100 (so I am effectively trading the strategy at \$100 per tick of P&L)

Strategy Performance:

Year	P&L (Ticks)
2009	1,593.90
2010	1,277.12
2011	2,864.26
2012	1,005.59

ESignal Performance Calculations:

Year	Tick Size (\$)	Start (\$)	P&L (Ticks)	P&L (\$)	End (\$)	ROI %
2009	100.00	100,000	1,593.90	159,390	259,390	159.39
2010	100.00	259,390	1,277.12	127,712	387,102	49.24
2011	100.00	387,102	2,864.26	286,426	673,528	73.99
2012	100.00	673,528	1,005.59	100,559	774,087	14.93

You can see that whilst ESignal capitalises the denominator each year (i.e. we Start(\$)) each year with the previous year's End(\$)) amount) the tick size remains the same at \$100 per tick.

I don't know if this is intentional or not but it is certainly not what happens in real life?

For example, if I am trading a fund which 'doubles' in the first year, then I will start trading 'double' the risk?

Accordingly, the performance profile using an adjusted tick size (adjustment = Tick Size * previous year's ROI) would thus look like this:

Year	Tick Size (\$)	Start (\$)	P&L (Ticks)	P&L (\$)	End (\$)	ROI %
2009	100.00	100,000	1,593.90	159,390	259,390	159.39
2010	259.39	259,390	1,277.12	331,272	590,662	127.71
2011	590.66	590,662	2,864.26	1,691,810	2,282,472	286.43
2012	2,282.47	2,282,472	1,005.59	2,295,231	4,577,703	100.56

In reality, the denominator is likely capitalised daily to accommodate subscriptions, redemptions, charges, fees and so on but this is obviously not necessary for the ESignal Back Test Report.

My suggestion would be to simply NOT capitalise the denominator at all, which will bring the monthly and annual performance figures back into line with what they should be.

In this respect, the performance profile using a constant tick size (\$100.00) and a constant denominator (\$100,000) -- the simplest solution by far for the Back Test Report -- would thus look like this:

Year	Tick Size (\$)	Start (\$)	P&L (Ticks)	P&L (\$)	End (\$)	ROI %
2009	100.00	100,000	1,593.90	159,390	259,390	159.39
2010	100.00	100,000	1,277.12	127,712	227,712	127.71
2011	100.00	100,000	2,864.26	286,426	386,426	286.43
2012	100.00	100,000	1,005.59	100,559	200,559	100.56

I hope this helps!

John