

Chapter 10

Protocol Validation

We must now ask whether the basic protocol—essentially the Slow Stochastic 17,9,3 on the Dax index sampled at 15 min—does work, that is, whether it is able to provide stable profits.

There is nothing better else we can do other than analyze a series of profit & losses (P&L) actually made with real money on real operations carried out in the market, and this is what we are going to do.

It should be warned that the following tests have always used 1 (or at most 2) CFD contracts—with Dax as the underlying asset—at a time.

It should also be warned that to evaluate the stability of the series of P&L, we use a statistical tool that is widely known in elementary statistics and that can be found easily on the Internet: the confidence intervals.

What we seek is not so much an average value of the P&L, but rather a range of values within which the average value in the future will be likely to be found with a high probability, say 95%. This is because we are not interested so much in the past, but rather—as far as possible—to infer the future.

It is necessary to start with a measure of the variability of the results, in our case the series of the P&L.

A commonly accepted measure to capture this feature is the standard deviation, which is a formula available in Excel:

$$= \text{ST.DEV}().$$

The first thing to do, then, is precisely to calculate this value. After doing this, we will be in a position to calculate the interval—between a minimum value (Min P&L) and a maximum one (Max P&L)—within which, with 95% probability, the average P&L will fall in the future.

Here are the formulas:

$$\begin{aligned}\text{Max} &= \text{Average} + t_{0.975}\text{St.Dev} \times \sqrt{(N-1)0.5}, \\ \text{Max} &= \text{Average} - t_{0.975}\text{St.Dev} \times \sqrt{(N-1)0.5}.\end{aligned}$$

Table 10.1 Trades record. Source: Saxo Bank (real money)

Date	No. of contracts	Opening price	Closing price	P&L
05 ott 2009	1	5,470.61	5,466.71	−3.90
05 ott 2009	1	5,478.30	5,466.71	−11.59
05 ott 2009	2	5,476.73	5,466.75	−19.96
05 ott 2009	2	5,488.26	5,522.42	68.32
06 ott 2009	2	5,542.43	5,549.85	14.84
08 ott 2009	1	5,676.40	5,712.45	36.05
08 ott 2009	1	5,681.53	5,712.45	30.92
08 ott 2009	1	5,719.04	5,712.96	−6.08
12 ott 2009	1	5,760.13	5,796.07	35.94
12 ott 2009	1	5,763.65	5,796.07	32.42
14 ott 2009	2	5,775.92	5,794.03	36.22
16 ott 2009	1	5,851.84	5,858.31	6.47
16 ott 2009	1	5,837.82	5,858.31	20.49
19 ott 2009	1	5,817.36	5,835.21	17.85
19 ott 2009	1	5,806.99	5,835.21	28.22
20 ott 2009	1	5,855.53	5,867.71	12.18
20 ott 2009	1	5,867.71	5,873.22	−5.51
20 ott 2009	1	5,869.22	5,870.10	0.88
21 ott 2009	1	5,767.10	5,780.50	13.40
22 ott 2009	1	5,733.22	5,723.22	10.00
22 ott 2009	1	5,773.60	5,773.50	−0.10
23 ott 2009	1	5,822.18	5,812.84	9.34
23 ott 2009	1	5,836.12	5,829.66	−6.46
26 ott 2009	1	5,789.68	5,764.64	−25.04
26 ott 2009	2	5,774.89	5,790.25	30.72
27 ott 2009	1	5,654.20	5,634.00	20.20
28 ott 2009	1	5,562.96	5,520.58	−42.38
29 ott 2009	1	5,491.09	5,474.09	−17.00
30 ott 2009	1	5,564.34	5,594.08	−29.74
30 ott 2009	2	5,563.81	5,533.00	61.62

Besides N , which is nothing else than the number of P&Ls that we are examining, we do not know what is the parameter $t_{0.975}$. Without going into detailed explanations, we say that it is calculated by the Excel formula:

$$= \text{INV.T}(0.05, N - 1).$$

The whys and wherefores, as said, can be found in any elementary textbook in statistics and also on the Internet.

The data are shown in Table 10.1, and the results of the statics¹ are shown in Table 10.2.

¹ Spreadsheets *P&L 01* and *P&L 02*.

Table 10.2 Statistics

Average	St.Dev	<i>N</i>	<i>t</i>	Min	Max
10.61	25.54	30.00	2.05	0.91	20.31
P&L	Equity	Win/loss	Profit prob. (63%)		
−3.9	−3.9	0			
−11.59	−15.49	0			
−19.96	−35.45	0			
68.32	32.87	1			
14.84	47.71	1			
36.05	83.76	1			
30.93	114.69	1			
−6.08	108.61	0			
35.94	144.55	1			
32.42	176.97	1			
36.22	213.19	1			
6.47	219.66	1			
20.49	240.15	1			
17.85	258	1			
28.22	286.22	1			
12.18	298.4	1			
−5.51	292.89	0			
0.88	293.77	1			
13.4	307.17	1			
10	317.17	1			
−0.1	317.07	0			
9.34	326.41	1			
−6.46	319.95	0			
−25.04	294.91	0			
30.72	325.63	1			
20.2	345.83	1			
−42.38	303.45	0			
−17	286.45	0			
−29.74	256.71	0			
61.62	318.33	1			

As you can see, the average profits and losses per trade will most likely fluctuate in the future from a minimum of 0.91€ to a maximum of 20.31€ when trading one Dax contract at a time with the proposed protocol.

The probability of concluding a trade at a profit is equal to the number of times we made a profit divided by the total number of trades, and it is not very high: only 63%, confirming the fact that making a good profit does not imply the fact of being always right. The series of test trades ended with a 318.33€ profit, but having on average invested very little: the 2.5% margin on a CFD, i.e., about 140€ to control a value of nearly 5,500€—this made the monthly return to amount to 220–230%.

The equity line is shown in Fig. 10.1.

Other similar cases have of course been taken into consideration, and the counts have been always comforting as those reported here.

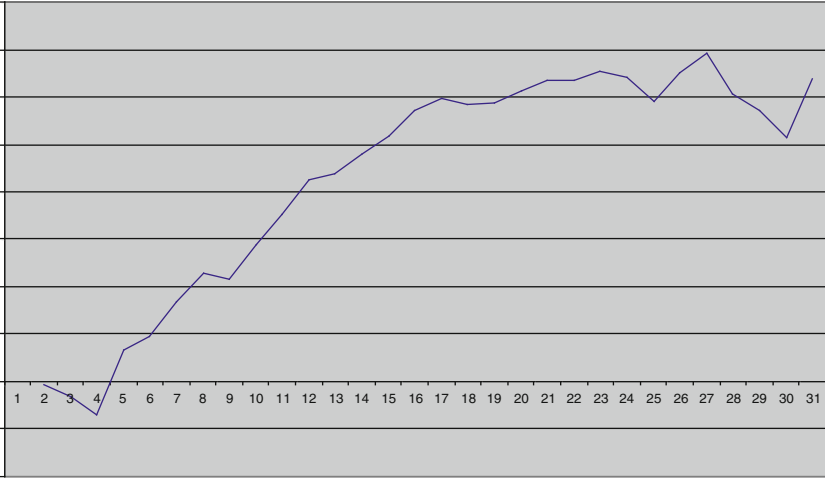


Fig. 10.1 Equity line

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