FX-forecaster

Dual Moving Averages … the Market's Favorite…

Why moving averages are my least favored trading tool

"What moving averages do you use?"

Isn't that a common question? Is there and answer? Of course, many traders use moving averages. Which are the best periods to use then?

My answer: "Depends on how much money you want to lose."

I am fascinated by the market's fascination with moving averages. Why? Am I missing something? I have seen all sorts of strategies using moving averages but have never seen a strategy that is stable and makes steady profit with a low drawdown.

Let's take a look at a simple dual moving average strategy that simply buys when they cross higher and sells when they cross lower. I used this on a chart of the Euro against the Dollar and to begin with I have limited this to a period of five years from the introduction of the Euro in January 1999.

Just to speed up the process I optimized the two periods which ended up as 9 periods for the short moving average and 35 for the long moving average.

Capital	$20,000	Leverage 5x	EUR 80,000
Total Net Profit	0.4918	Gross Profit	0.8088
		Gross Loss	(0.3170)
Total # of trades	38	Percent profitable	55.26%
Number winning trades	21	Number losing trades	17
Max intraday drawdown	(0.0908)	As a % of capital	(36.32%)
Largest winning trade	0.1046	Largest losing trade	(0.0442)
Average winning trade	0.0385	Average losing trade	(0.0186)
Ratio avg win/avg loss	2.0654		

1999	0.0983	39.32%
2000	0.1355	54.20%
2001	0.0396	15.84%
2002	0.0759	30.36%
2003	0.1425	57.00%
TOTAL	0.4918	196.72%

Let's look at these numbers.

First of all I took an average rate of 1.25 for the EURUSD rate and came to a position size on a 5x leverage of EUR 80,000. This is probably a bit high, but for the sake of examining just how good a strategy is it will suffice.

Well, we have see 55.26% of the trades make profit and the ratio of profit to loss is over 2:1. That is quite good. The total net profit over the 5 years is 0.4918 – so very nearly 0.1000 per annum. Looking at the results for each year we see the lowest return was 15.84% (2001) and the highest was 57.00% (2003). I'd be happy with that. We've almost trebled our capital in that time although we would have had to have gone through something like a 36.32% drawdown in capital at some point.

These numbers are good!

So on the 1st January 2004 we can start trading… and these would have been the results since then:

Capital	$20,000	Leverage 5x EUR	80,000
Total Net Profit	(0.0922)	Gross Profit	0.2704
		Gross Loss	(0.3626)
Total # of trades	27	Percent profitable	22.22%
Number winning trades	6	Number losing trades	21
Largest winning trade	0.0889	Largest losing trade	(0.0379)
Average winning trade	0.0451	Average losing trade	(0.0173)
Ratio avg win/avg loss	2.6100		
Max intraday drawdown	(0.1480)	As a % of capital	(59.20%)

2004	(0.0073)	(2.92%)
2005	(0.0416)	(16.64%)
2006	(0.0128)	(5.12%)
2007	(0.0130)	(5.20%)
TOTAL	(0.0747)	(29.88%)

Suddenly the numbers don’t look quite so good… Every year has recorded a loss and the maximum drawdown was almost 60% of capital. Only 6 out of the 27 trades made profit over the 3.25 years.

Was there something wrong with the optimization? How could the same moving average periods lose so much money?

I have news… this is very, very common.

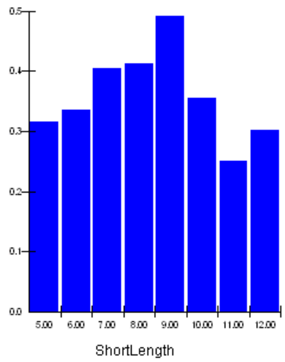
The next question is normally “Can I add a money management stop, trailing stop or take profit.”

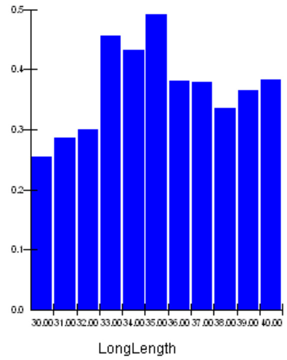
Of course you can but do remember there are two risks involved. To be honest a money management stop should always be employed. However, there can be a downside in that when set to a level with which you feel comfortable it can actually increase the drawdown. What can happen especially with simple moving average systems is that since they provide a lagging entry signal, the subsequent pullback is so deep it will catch the money management stop. This often takes a loss on a position you may have profited from without the stop and if there are too many of these it can actually cause the drawdown much higher.

Trailing Stops and Take Profit Stops are also valid methods to take more control over positions. Here however you will need to avoid optimizing them. If anything they should be set to a non-fixed amounts but reflect market volatility through using volatility. Optimizing these is not recommended. The more variables you put into your system the more unstable it becomes.

The final question is then usually asked. “Is there any way to more thoroughly check whether the optimization has provided a stable result?”

The answer is most definitely yes. Look at the profit results of all the optimized periods. For example, let’s look at the strategy above. After optimization the moving average periods used were 9 and 35. Each of these should be examined to observe how stable the results are around the optimum period. Look at the following graphs of results:





On the left are the results of all lengths in the short moving average period from 5 to 12 while on the right are the results of all lengths in the long moving average period from 30 to 40.
Note on the left that around the optimum 9 period average the next best results are around 1,000 points lower and going out to the extremes these move down to 2,000 points lower. Equally, on the right we see a similar result.

It must be understood that when optimizing the chances of seeing profits as high as suggested by the optimum periods are very, very low and thus do not even begin to think that your trading results will be any where close. The best type of result you should be looking for in a type of flat bell curve which sees limited reductions in profit either side of the optimum. Even then, the more variable parameters you utilize the more chance there is of these causing an exponential reduction in profitability in your strategy.

What I have pointed out here with two moving averages is common of a poor strategy but very common using moving averages. They are really not good trading tools.

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