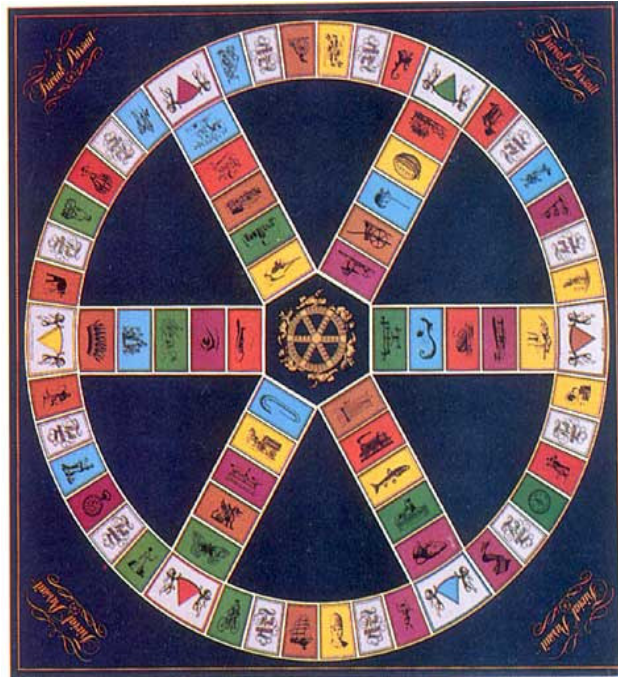


INVESTMENT TRIVIA



Regular investing: Does it matter when my debit order is processed?

**Trading strategies based on moving average trend lines:
Does it add any economic value?**

By Daniel R Wessels

June 2010

DRW INVESTMENT RESEARCH

Part 1: Regular Investing and Debit Order Timing

Does it matter whether my debit order is processed at the beginning, middle or end of the month?

Hypothesis:

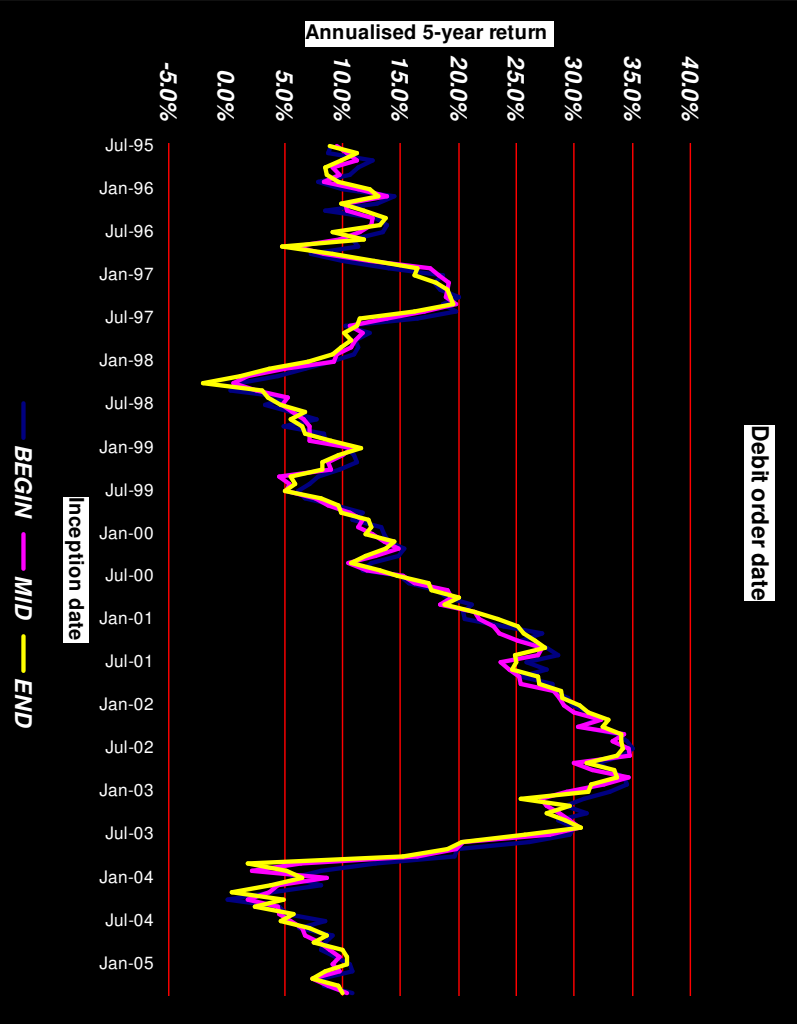
While investment returns will vary across different holding periods and periods in time, it should not make much of a difference whether my particular contributions are processed at the beginning, middle or end of each month.

Testing the hypothesis:

Beginning of the month: 1st or next business day
Middle of the month: 15th or next business day
End of the month: 25th or next business day
Review period: July 1995 to April 2010
Investment basis: FTSE JSE All Share price index
Evaluation basis: Annualised five-year returns
Number of periods: 119 (5-year periods)

Results:

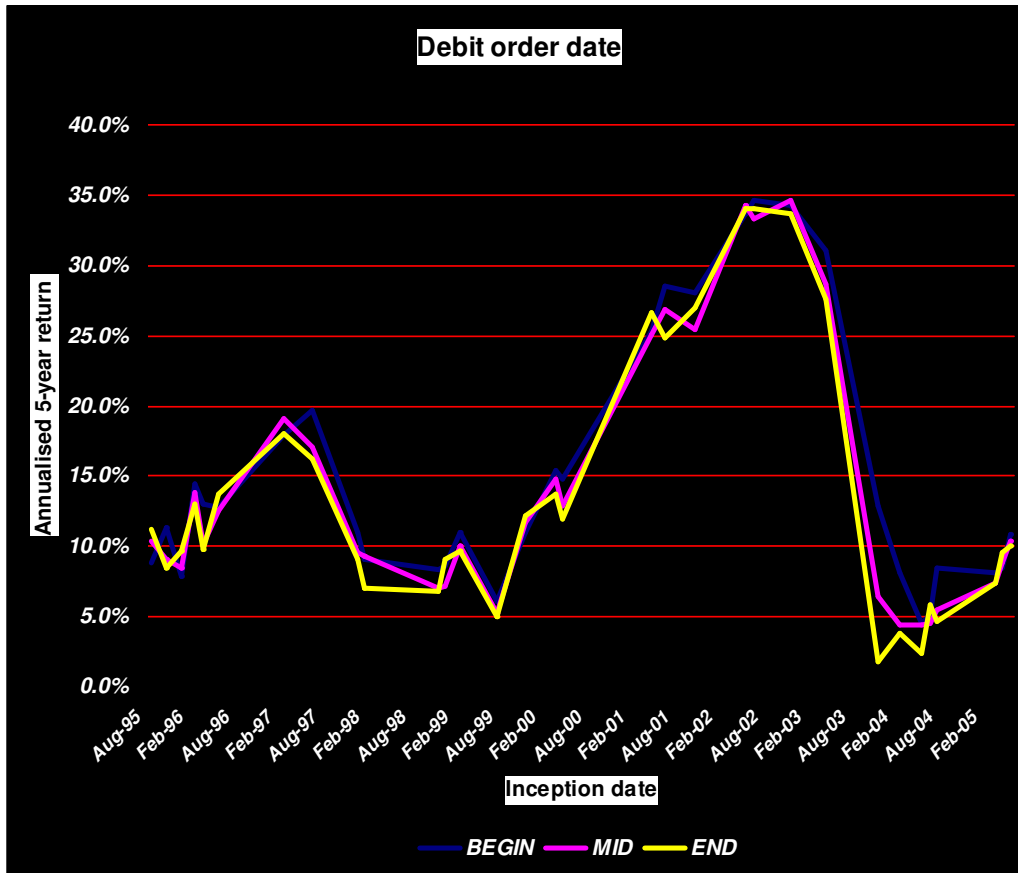
Debit order processed	BEGIN	MID	END
Average annualised return	15.9%	15.1%	15.1%
Median annualised return	12.6%	11.4%	11.9%
Minimum annualised return	0.1%	0.6%	-2.0%
Maximum annualised return	35.0%	34.8%	34.1%
Percentage best option	55%	13%	32%
Percentage worst option	29%	29%	43%
Volatility of returns	9.5%	9.3%	9.6%



Sampling:

Randomly selected 36 different inception dates

INCEPTION DATE	BEGIN	MID	END
Sep-95	12.6%	11.2%	9.9%
Apr-96	8.6%	10.3%	11.9%
Jun-96	13.8%	12.5%	13.2%
Jul-96	13.4%	11.4%	9.1%
Sep-96	11.4%	5.9%	4.8%
Feb-97	18.0%	19.1%	18.0%
Apr-97	20.0%	18.9%	19.3%
Jul-97	16.4%	13.9%	11.5%
Mar-98	4.4%	1.8%	1.2%
Apr-98	1.0%	0.6%	-2.0%
May-98	0.3%	2.6%	3.1%
Jun-98	5.3%	5.3%	3.5%
Aug-98	5.6%	5.7%	6.8%
Sep-98	7.8%	6.7%	5.6%
Oct-98	4.9%	7.1%	6.6%
Dec-98	8.6%	7.2%	9.1%
Oct-99	11.7%	10.6%	9.9%
Nov-99	10.9%	11.7%	12.2%
Apr-00	14.8%	12.9%	11.9%
Aug-00	15.8%	16.2%	17.4%
Oct-00	19.0%	19.4%	20.0%
Dec-00	20.5%	21.4%	21.4%
Feb-01	23.9%	23.0%	25.1%
Jul-01	25.9%	23.6%	24.9%
Sep-01	25.4%	25.2%	26.8%
Jan-02	29.8%	29.1%	30.5%
May-02	33.6%	34.3%	34.1%
Jun-02	34.6%	33.3%	34.1%
Sep-02	32.1%	29.9%	31.1%
Dec-02	34.5%	32.5%	31.5%
Feb-03	30.8%	27.1%	25.3%
Oct-03	19.7%	16.4%	15.2%
Nov-03	12.9%	6.5%	1.8%
Jan-04	5.7%	8.7%	6.5%
May-04	4.6%	4.4%	2.4%
Jan-05	10.6%	9.2%	10.4%
Average annualised return	15.8%	14.9%	14.6%
Median annualised return	13.6%	12.1%	11.9%
Minimum annualised return	0.3%	0.6%	-2.0%
Maximum annualised return	34.6%	34.3%	34.1%



Result:

Randomly sampled test results confirmed that debit orders processed at beginning of each month led in most instances to superior performances.

Investment returns following from debit orders processed at the beginning of each month outperformed most of the time other processing periods such as middle of the month and month-end.

Part 2: Moving Averages and Crossover of Trend Lines

Purpose:

Consider the informational value of using the crossovers of short-term moving average trend lines and long-term moving average trend lines to direct tactical asset allocation decision-making, i.e. when to buy or sell equity holdings.

Strategy:

When the short-term MA trend line is crossing and moving above the long-term MA trend line a bull market is established and an investor should be fully invested in the market. However, when the short-term MA is crossing and moving below the long-term MA trend line, a bear market is prevailing and an investor should sell equity holdings and invest the proceeds in cash.

Evaluating:

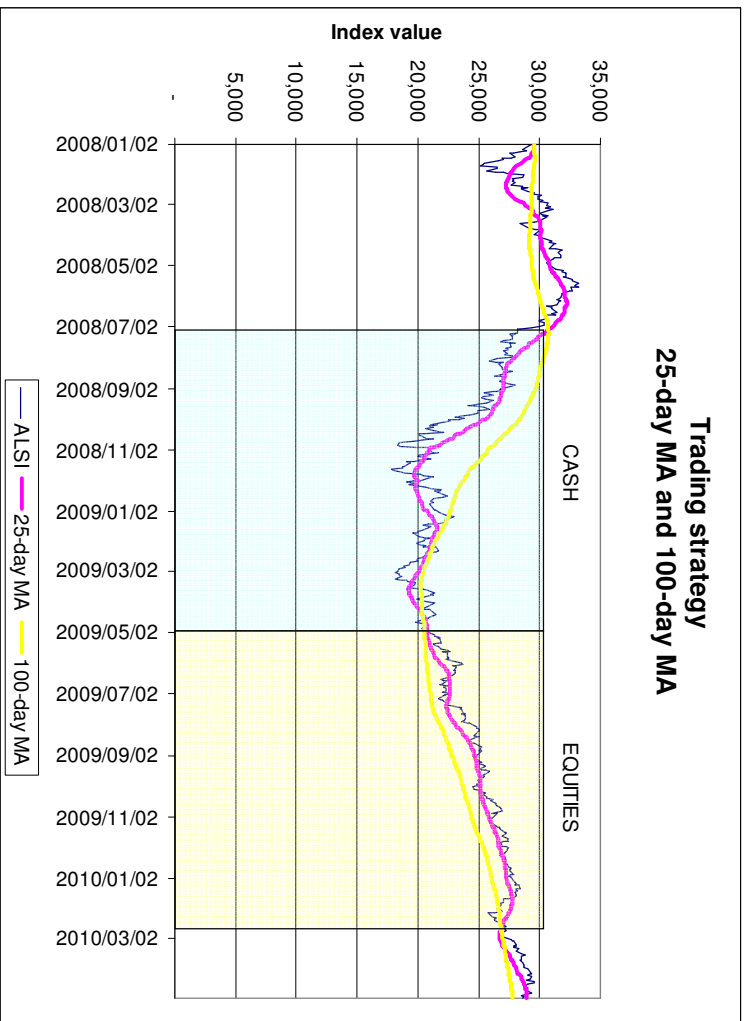
Period: 1 May 1996 – 30 April 2010

Equity return: Daily price of FTSE JSE All Share Index (dividends excl)

Cash yield: Money market yields

Trend lines: 25-day moving average and 100-day moving average
50-day moving average and 200-day moving average

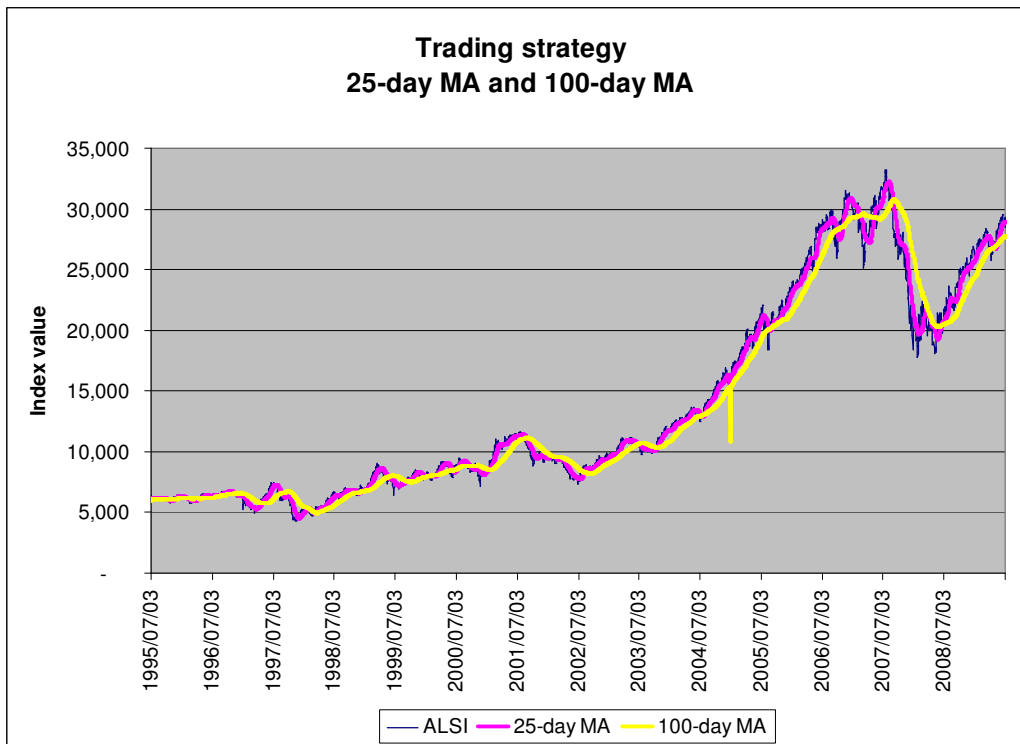
Example:

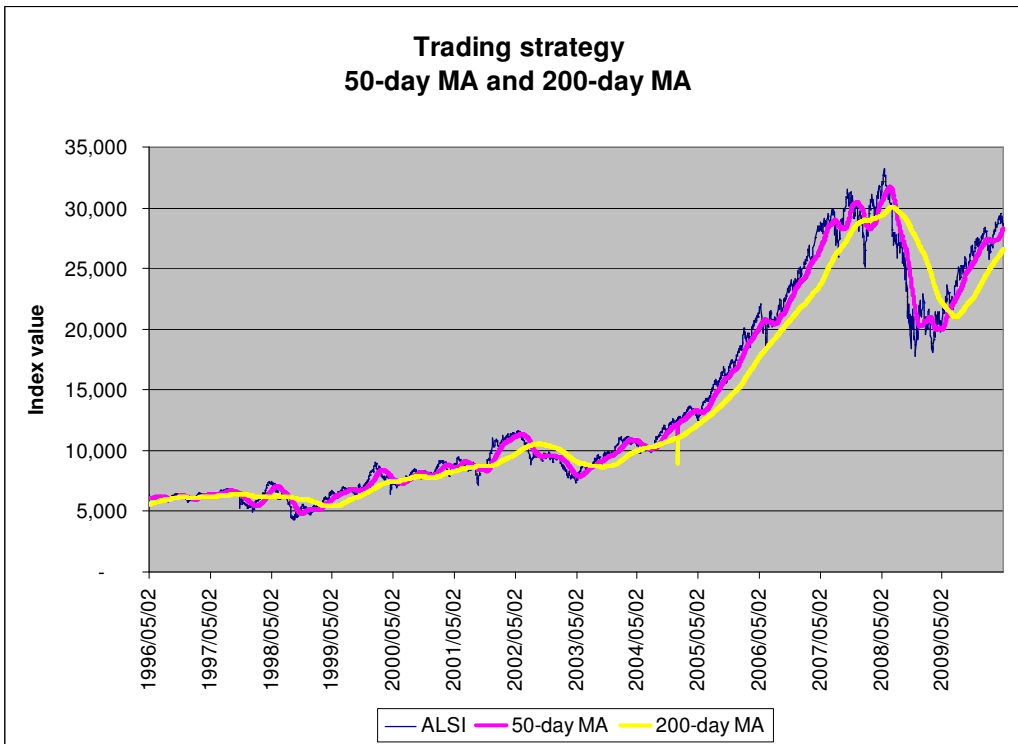
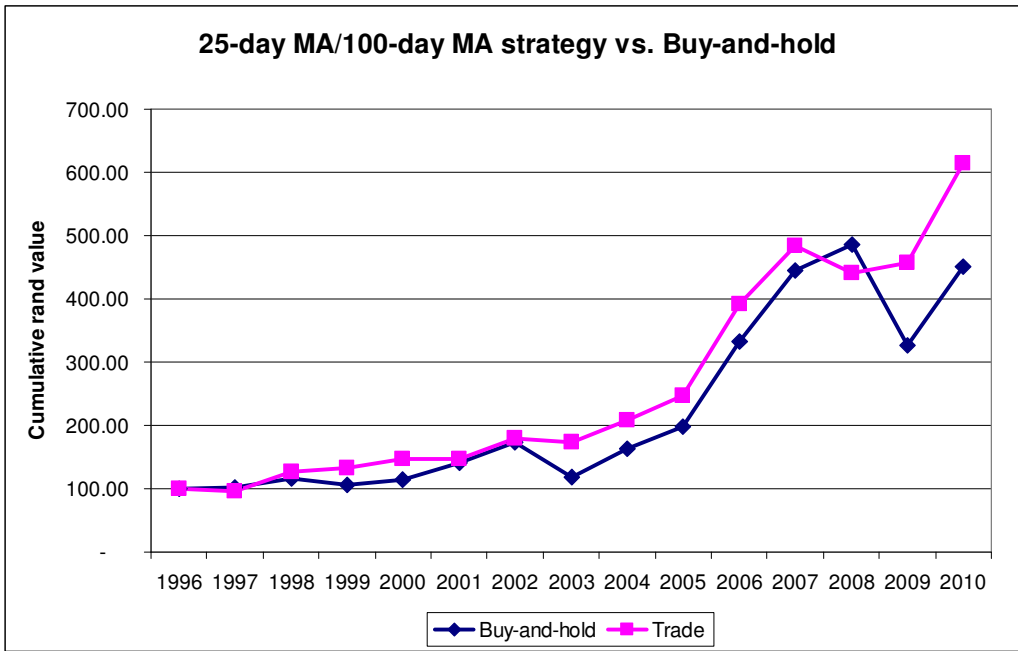


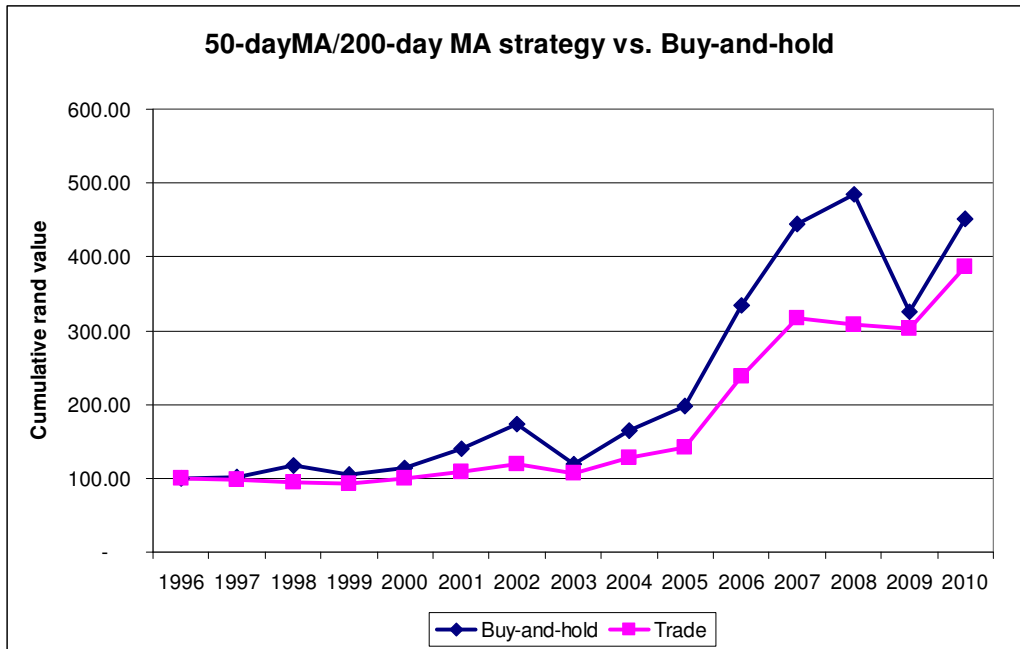
Test:

Strategy	25-day MA/ 100-day MA	50-day MA/ 200-day MA	Buy-and-hold
Opening value	R100	R100	R100
Final value	R615	R386	R452
Total return	515%	286%	352%
Number of trades	40	18	0

1. Dividends excluded
2. Assumes no transaction cost per trade







Thus:

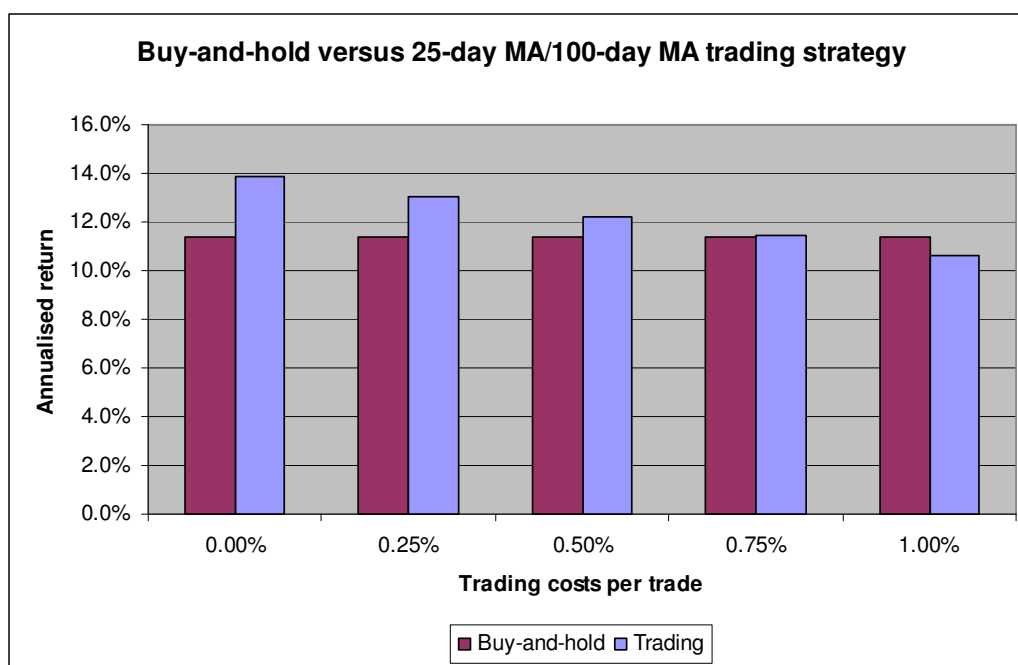
One strategy (25-day MA/100-day MA) did significantly better than an ordinary buy-and-hold strategy.

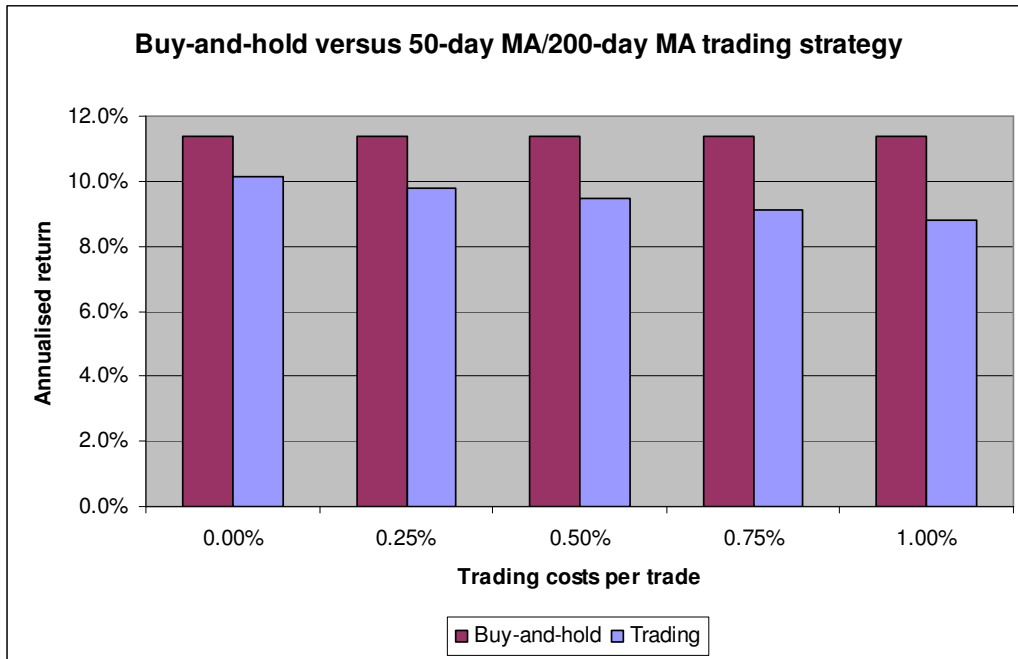
Both trading strategies led to less volatility in returns (lower peaks and troughs) than the buy-and-hold strategy.

But trading strategies require regular activity, i.e. trading with cost implications...

Strategy	25-day MA / 100-day MA	50-day MA / 200-day MA
Number of trades required over the evaluation period	40	18
Reduction in yield per 25bps transaction costs	0.8%	0.3%

Transaction costs per trade	Annualised return 25-day MA/ 50-day MA	Annualised return 50-day MA/ 200-day MA	Annualised return Buy-and-hold
0%	13.8%	10.1%	11.4%
0.25%	13.0%	9.8%	11.4%
0.50%	12.2%	9.5%	11.4%
0.75%	11.4%	9.1%	11.4%
1.0%	10.6%	8.8%	11.4%





Beware:

The potential benefits of a trading strategy may be completely eroded by the transaction costs and making it suboptimal compared with an ordinary buy-and-hold strategy!



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