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TREND FOLLOWING WITH A TWIST

**A simple, trend following, portfolio
strategy for stocks that incorporates
PE ratios.**

WHITE PAPER

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TREND FOLLOWING WITH A TWIST

This paper discusses a trend following trading system for stocks. It's a simple system based on the classic trend following principle that says you should "let winning trades run and cut losing trades quickly".

The 'twist' in this system is provided by the introduction of fundamentals. The aim is to find trending stocks that are also cheap according to their financial ratios.

Background

Trend following is widely regarded as an effective method for trading commodities and the strategy is employed by some of the largest CTAs in the industry.

Simple trend following strategies are also shown to work well in stocks¹ and the basic premise of buying a stock high and selling it higher is one that has worked wonders over recent bull market periods.

However, if there is a problem with trend following, it's that the strategy has a relatively poor win:loss ratio.

Typically, traders can expect to win around 40% of trades and this metric can slip to 30% or even 20% during poor market conditions. Trend followers often experience whipsaws and relatively large drawdowns as a result.

Ignoring the fundamentals

Trend followers are often told to 'ignore the fundamentals'.

When a stock makes a new high, they should buy and when it turns lower they should sell. These are the only signals trend traders need to follow according to trend following theory. The price is the most important factor in making any trading decision and the fundamentals are irrelevant.

¹ Hurst, Brian; Ooi, Yao Hua; Heje Pedersen, Lasse. AQR Capital Management, LLC, A Century of Evidence on Trend-Following Investing : 2012.

In truth, those who subscribe to this rule (myself included) have been on the end of too many losing trades to really follow this advice to the letter.

All too often, trend followers find themselves buying expensive, poorly managed stocks just because they've hit a new high price. They then have to sit back and watch the stock price deteriorate as the fundamentals align and the stock is knocked back nearer to its real value.

Sure, occasionally you pick a winner and it goes on to make a 100%, 200%, even 1000% return, but those stocks are few and far between.

Take a look at the next chart for an example:



Key Energy Services Inc. \$KEG is a service provider to the oil industry which I bought in April 2014 when the stock hit a new 52-week high (in line with the popular trend following breakout system).

As you can see, almost as soon as the stock hit a 52-week high and was purchased, it started to fall. The stock went on to drop over 60% over the next few months.

Fortunately, trend following systems are also quick to cut losses. So the system rules exited the stock way before it dropped anywhere near that much. But the question is, did I really have any right to buy the stock in the first place?

It was in a highly risky sector and just a quick glance at the fundamentals of the company should have been enough to alert me to steer clear. That is, if you take any notice of classic valuation metrics like PE ratios.

It's because of this type of experience that I no longer follow blind into what the trading system tells me. Instead, when I get a signal, I make sure to check the stock first and analyse it further to see if there is any value or catalyst that could continue to take it higher.

Ignoring the fundamentals is not a smart move so I do my research and I cherry

pick from the trending signals that are given to me. And if I don't like a stock, based on my fundamental analysis, I don't buy it.

Simple trend following trading system results

In order to show this in action, I decided to load up the simulator at Portfolio123 and test two very simple trend following, portfolio systems on the US stock market between the 1st January 2000 and 1st November 2014. I then incorporated some fundamental criteria to see how the systems compare.

TEST 1

The following trading system has very simple rules:

- Buys on the next open after a stock makes a 52-week higher close.
- Sells when the stock falls 25% or more from its 52 week high.
- Positions have an equal 5% weighting meaning a maximum portfolio size of 20 positions.
- Position size must be less than 5% of daily volume for liquidity reasons.
- Industry weight is capped at 30%.
- Commissions are set at \$1 per trade and slippage is set at 0.25%.
- Starting capital set at \$100,000.

Ranking

Trend followers often say that stronger stocks are preferable to weaker ones. So in this first test, stocks are ranked based on their 52 week % performance. Therefore, if more than one stock has hit a 52-week high on the rebalance data, the stock with the highest 52-week performance will be preferred.

In simple terms

In simple terms, the system begins on the 1st January 2000.

If a stock hits a 52-week high, the stock is bought on the next open and added to the portfolio. The portfolio can hold a maximum of 20 positions. This process is continued and the stock universe is checked every two weeks (the rebalance period) for new signals. If an existing position meets the sell rules on the rebalance date, the stock is sold and drops off the portfolio.

If there is more than one stock meeting the buy criteria, the ranking mechanism kicks in so that the portfolio chooses the stock with the strongest 52-week performance.

In order to ensure adequate liquidity for entry and exit trades, position size must be less than 5% of the daily volume. And in order to ensure some level of diversification, the total industry weight of the portfolio is capped at 30%. So no one sector can take up more than 30% of the portfolio distribution.

To run the test, the stock universe used is the Portfolio123 All Fundamentals

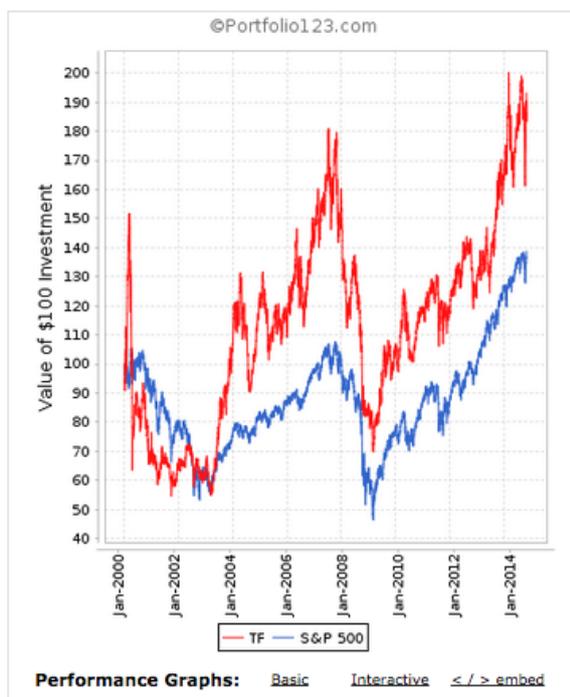
universe. This is Portfolio123's own survivorship-free universe which encompasses all US stocks where fundamental data is available and reported to the SEC.

Commissions are set at \$1 per trade, in line with the Interactive Brokers fee structure.

Slippage is set at 0.25% which takes care of the fact that in real life the strategy will not always achieve the best price as recorded by the system.

Results

As you can see from the next chart, this simple trend following system had an annualised return of 4.60% and only just beat investing in the benchmark (S&P 500 buy and hold). Maximum drawdown was -63.95% and the Sharpe Ratio was 0.03. I imagine that it would be very difficult for any trader to follow this system.



General Info

Inception Date	01/01/00
Last Rebalance Date	10/18/14
Days Since Last Rebalance	31
Rebalance Frequency	4 Weeks
Benchmark	S&P 500
Universe	All Fundamentals - USA
Ranking System	Strength

Quick Stats as of 10/31/2014

Total Market Value (inc. Cash)	\$ 194,744.78
Cash	\$ 338.62
Number of Positions	19
Total Return	94.75%
Benchmark Return	37.35%
Active Return	57.39%
Annualized Return	4.60%
Annual Turnover	150.92%
Max Drawdown	-63.95%
Benchmark Max Drawdown	-56.78%
Overall Winners	(218/566) 38.52%
Sharpe Ratio	0.03
Correlation with S&P 500	0.58

Top Holdings

No	Ticker	Weight	Return	Shares	Value
1	VIPS [5D] [1Y]	20.40%	604.06%	173.0	\$39,667.17
2	SOPW [5D] [1Y]	7.39%	78.64%	5,985.0	\$14,364.00
3	RCPT [5D] [1Y]	6.72%	62.75%	126.0	\$13,059.90
4	BFCF [5D] [1Y]	6.69%	80.48%	3,422.0	\$13,003.60
5	VGR [5D] [1Y]	5.07%	62.77%	441.6	\$9,865.20

Last 10 Trades

Date	Type	Ticker	Shares	Price
10/31/14	DIV	TCP [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	KMP [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	WGL [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	SNX [5D] [1Y]	0.0	\$0.00
10/20/14	BUY	HDSN [5D] [1Y]	1,907.0	\$4.00

TEST 2

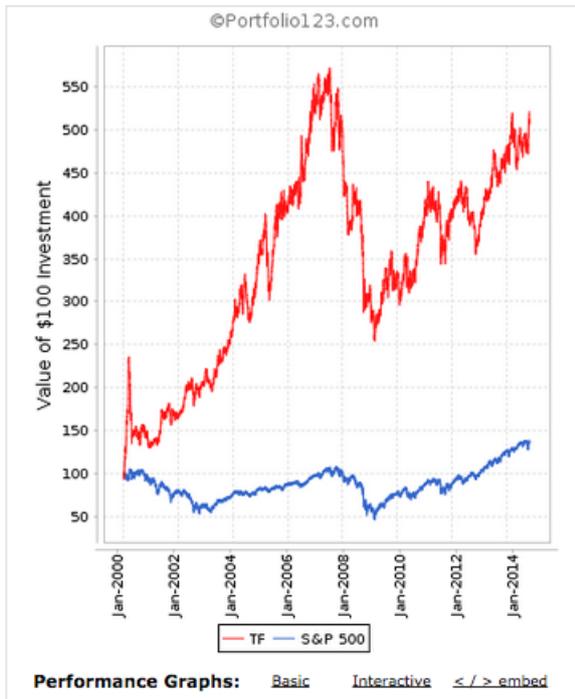
Changing the ranking

From this we can see that buying the strongest stocks does not work all that well, which is contrary to the typical advice received from trend followers.

Now, let's change the ranking and see what happens if we prefer stocks according to their market capitalisation, or size.

Numerous studies suggest that small cap stocks outperform larger cap stocks. So in this next test, we keep all rules the same except in this instance, stocks are ranked based on market cap so that smaller cap shares are preferred.

As you can see from the next chart, by simply changing the ranking, the simple trend following system did much better, with an annualised return of 12.04%. Maximum drawdown was -55.4% and Sharpe ratio was 0.40.



General Info	
Inception Date	01/01/00
Last Rebalance Date	10/18/14
Days Since Last Rebalance	31
Rebalance Frequency	4 Weeks
Benchmark	S&P 500
Universe	All Fundamentals - USA
Ranking System	Market Cap

Quick Stats as of 10/31/2014	
Total Market Value (inc. Cash)	\$ 539,858.00
Cash	\$ 1,507.84
Number of Positions	20
Total Return	439.85%
Benchmark Return	37.35%
Active Return	402.50%
Annualized Return	12.04%
Annual Turnover	105.67%
Max Drawdown	-55.44%
Benchmark Max Drawdown	-56.78%
Overall Winners	(174/406) 42.86%
Sharpe Ratio	0.40
Correlation with S&P 500	0.57

Top Holdings

No	Ticker	Weight	Return	Shares	Value
1	STRP [5D] [1Y]	11.90%	97.48%	2,966.0	\$64,065.60
2	KMP [5D] [1Y]	6.60%	70.14%	379.0	\$35,550.20
3	MGEE [5D] [1Y]	6.22%	88.22%	753.0	\$33,485.91
4	VGR [5D] [1Y]	5.78%	62.79%	1,392.4	\$31,106.73
5	UTMD [5D] [1Y]	5.58%	61.87%	529.0	\$30,047.20

Last 10 Trades

Date	Type	Ticker	Shares	Price
10/31/14	DIV	TCP [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	WPT [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	IRT [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	KMP [5D] [1Y]	0.0	\$0.00
10/31/14	DIV	WGL [5D] [1Y]	0.0	\$0.00

So we can see that this simple trend following strategy has some merit. The question now is: can we improve the system by incorporating fundamentals?

TEST 3

Incorporating fundamentals

In previous academic studies, the PE ratio has been shown to be a relatively accurate predictor of investment returns². Put very crudely, stocks with lower PE ratios tend to outperform those with higher PE ratios.

Considering this, and the fact that PE ratios are fairly easy to calculate, the incorporation of PE ratios might be a good way of using fundamental data to improve a trend following system.

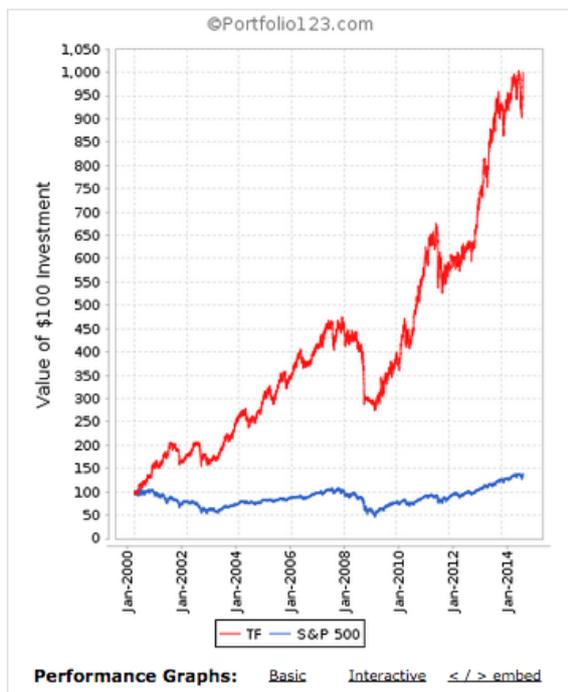
2 Damodaran, Aswath, Value Investing: Investing for Grown Ups? (April 14, 2012).

Therefore, for the next system, the rules are kept exactly the same as the previous tests but for two important considerations:

- The system only buys if the PE ratio is less than 15.
- Stocks are ranked by PE so stocks with lower PE ratios are preferred.

So this system buys stocks at 52-week highs but that stock must also have a PE less than 15. And when there is more than one signal, stocks with lower PEs are preferred to those with higher PE's. The previous ranking methods of strength and market cap are discarded.

The next chart shows the results:



General Info	
Inception Date	01/01/00
Last Rebalance Date	10/18/14
Days Since Last Rebalance	24
Rebalance Frequency	2 Weeks
Benchmark	S&P 500
Universe	All Fundamentals - USA
Ranking System	PE

Quick Stats as of 10/31/2014	
Total Market Value (inc. Cash)	\$ 977,376.00
Cash	\$ 3,521.37
Number of Positions	21
Total Return	877.38%
Benchmark Return	37.35%
Active Return	840.03%
Annualized Return	16.62%
Annual Turnover	62.81%
Max Drawdown	-41.97%
Benchmark Max Drawdown	-56.78%
Overall Winners	(124/253) 49.01%
Sharpe Ratio	0.72
Correlation with S&P 500	0.70

Top Holdings

No	Ticker	Weight	Return	Shares	Value
1	ALK [5d] [1y]	10.33%	178.90%	1,896.0	\$100,924.08
2	LEA [5d] [1y]	7.57%	37.61%	800.0	\$74,000.00
3	ORLY [5d] [1y]	7.45%	436.48%	414.0	\$72,814.32
4	UCBI [5d] [1y]	6.10%	-1.99%	3,306.0	\$59,607.18
5	VR [5d] [1y]	6.05%	-0.82%	1,487.0	\$59,152.86
6	SNV [5d] [1y]	6.05%	0.38%	2,330.1	\$59,092.42

Last 10 Trades

Date	Type	Ticker	Shares	Price
10/31/14	DIV	AI [5d] [1y]	0.0	\$0.00
10/31/14	DIV	NCT [5d] [1y]	0.0	\$0.00
10/23/14	SPLIT	NCT [5d] [1y]	-903.7	\$0.00
10/21/14	DIV	ACE [5d] [1y]	0.0	\$0.00
10/10/14	DIV	TOT [5d] [1y]	0.0	\$0.00
10/10/14	DIV	MO [5d] [1y]	0.0	\$0.00

As you can see, by incorporating these simple fundamental considerations, returns can be improved nicely. The annualised return improved to 16.62%, the maximum drawdown dropped to -42% and the Sharpe Ratio increased to 0.72. And all we did was buy stocks at 52-week highs and prefer those with lower PE's.

Bottom line?

To conclude, building profitable trend following trading systems is not always as easy as some trend followers like to make out. The results indicate that it is not always a good idea to blindly follow a system without looking at the fundamentals

of the company. Incorporating some fundamentals, in the form of PE ratios, into the investing process is shown here to be a good way to help improve trend following returns.

Credits:

Charts/Analysis: Finviz.com, Portfolio123.com.

Damodaran, Aswath, Value Investing: Investing for Grown Ups? (April 14, 2012).

Hurst, Brian; Ooi, Yao Hua; Heje Pedersen, Lasse. AQR Capital Management, LLC, A Century of Evidence on Trend-Following Investing : 2012.