

NOVEMBER 2014



# TEMPLETON-MODIFIED INVESTING SYSTEM

A systematic portfolio strategy based  
on the work of John Templeton.

WHITE PAPER

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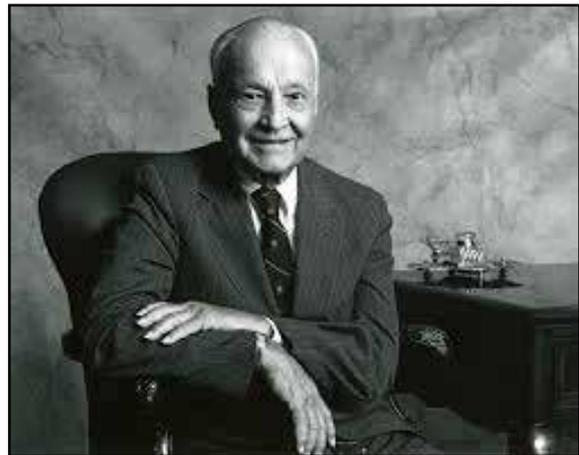
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## TEMPLETON-MODIFIED INVESTING SYSTEM

When discussing the greatest investors of our time we often talk about Warren Buffett, Peter Lynch or George Soros.

Another name that comes up is that of John Templeton, a British, but American-born investor and philanthropist who passed away in 2008, at the age of 95.

John Templeton was a stock picker and mutual fund pioneer who Money magazine called “arguably the greatest global stock picker of the century”.



Templeton eschewed technical analysis in favour of looking at company valuations and his flagship fund, Templeton Growth, posted a market-beating 13.8% return over 50 years. He also proved that great value could be found in emerging markets.

And in 1939, when the Second World War was decimating stock markets, he famously bought \$100 of every stock trading below \$1 on the New York Stock Exchange, selling them four years later at quadruple the price paid.

### Templeton Strategy

In terms of his strategy, Templeton is usually described as a contrarian value investor who seeks stocks trading at low multiples when compared with book value, cash, earnings, dividends and sales; in a similar vein to another successful British investor, Phillip Fisher.

The website Meet Invest classifies Templeton's strategy for stocks as composing of the following rules:

- MktCapM is  $\geq$  US\$ 300 million (basis year 2000) adjusted yearly**
- Current P/E is  $<$  average P/E for last 5y**
- Average P/E for each of the last 5 FY is  $<$  than 75**
- EPS growth % for last 12 months is  $>$  0**
- EPS growth % for last 5y is  $>$  0**
- Est. EPS growth % is  $>$  0**
- Est. EPS growth % is  $>$  industry's median**
- EPS for last 12 months is  $\geq$  to EPS for last FY**
- EPS increased over each of the last 5 FY**
- Op Mgn % for last 12 months is  $>$  0**
- Op Mgn % for latest FY is  $>$  0**
- Op Mgn % for last 12 months is  $\geq$  industry's median**
- Op Mgn % for latest FY is  $\geq$  industry's median**
- Debt to assets ratio for latest FQ is  $<$  industry's median**

This set of rules can be used to approximate the kind of stocks that Templeton liked to buy. This is useful so that we can quantify how the strategy has done over time.

In the rest of this paper I will now take these rules and back-test them over recent stock data to see how they perform in today's markets. I will modify the rules slightly in order to more accurately define the buy and sell rules and to make them fit within the confines of the Portfolio123 simulator, which can be found at Portfolio123.com.

### **Templeton-Modified System Rules**

After firing up the Portfolio123 simulator I set about creating the rules for the strategy as above with a few, slight modifications.

#### **Exact Buy Rules:**

- Operating Margin (latest year)  $>$  0**
- Operating Margin (trailing 12-month)  $>$  0**
- Operating Margin (trailing 12-month)  $\geq$  Industry Operating Margin (ttm)**
- Operating Margin (latest year)  $\geq$  Industry Operating Margin (latest year)**
- Total Debt to Total Equity (latest quarter)  $<$  Industry Total Debt to Total Equity (latest quarter)**
- More than 5 years of consecutive EPS growth**
- EPS (trailing 12-month)  $>$  EPS (latest year)**
- Next Fiscal Year EPS Estimate  $>$  0**
- 5 year EPS growth rate  $>$  0**
- EPS growth percent change (ttm)  $>$  0**
- Average PE over last 5 years  $<$  75**
- PE (ttm)  $<$  Average PE over last 5 years**
- Market Capitalisation  $\geq$  \$300 million**
- Highest PE value over last 5 years  $<$  75**
- Next Fiscal Year EPS Estimate  $>$  Industry EPS growth percent change (ttm)**

On Portfolio123, the exact rules look like this:

General		Buy Rules ( Implicit AND ) [copy to screen]	
Name	Templeton Modified Simulation	Buy0	OpMgn%A > 0
Starting Capital	\$100,000.00	Buy1	OpMgn%TTM > 0
Benchmark	S&P 500	Buy2	OpMgn%TTM >= OpMgn%TTMInd
Commission	1.0 (Flat Fee)	Buy3	OpMgn%A >= OpMgn%TTMInd
Slippage	0.25% of Total Amt (Fixed)	Buy4	DbtTot2EqQ < DbtTot2EqQInd
Transaction Type	Long	Buy5	EPS#Positive > 5
Use Margin	No	Buy6	EPSInclXorTTM > EPSInclXorA
Management Fee	0.0%	Buy7	NextFYEPSMean > 0
Rebalance Frequency	3 Months	Buy8	EPS5YCGr% > 0
Price for Transactions	Next Open	Buy9	EPS%ChgTTM > 0
Allow sold holdings to be re-bought at current rebalance	No	Buy10	PERelative < 75
Transaction Save	Temp	Buy11	PEExclXorTTM < PERelative
Visibility	Private	Buy12	MktCap >= 300
Category	Unclassified	Buy13	PEHigh <75
		Buy14	NextFYEPSMean > EPS%ChgTTMInd
		X Buy16	PEExclXorTTM > 5
Position Sizing		Sell Rules ( Implicit OR ) [copy to screen]	
Type	'% of Market Value'	Rank	PEG > 4
Ideal Weight New Pos	9	Sell2	PEExclXorTTM > 75
Aprox. Number of Positions	11.1	Sell3	Close(0) = Lowest( #close,90,0)
Max Weight Deviation	30		
Universe & Ranking		Stop Loss	
Universe	S&P 1500 Index	Strategy	None
Ranking System	PE		
Ranking Method	Percentile NAs Negative	Hedge / Market Timing <b>DISABLED</b>	
Force Weekly Ranks	Yes	Period & Restrictions	
		Start Date	11/03/2000
		End Date	11/03/2014
		Exposure List	None
		Restrict Buy List	
		Restrict Sell List	
		Load Global Restrictions	Yes

As you can see from the criteria, Templeton liked stocks with consistent positive earnings per share. And this is in line with most value investors, who nearly always prefer companies that have long and consistent histories of good earnings.

He also liked to look at operating margin, defined as the operating income of the business divided by net sales.

In this instance, operating margin is used to measure a company's pricing strategy and the efficiency of the business. And a healthy operating margin is needed if a company is able to pay for its fixed costs or debt.

Templeton liked companies whose operating margin was positive over the last twelve months and over the last full year. As well, he preferred companies whose operating margin was better than the average operating margin of the industry.

### Ranking, Sell Criteria and Settings

Of course, having a set of buy rules is not enough to test an investment strategy. We must also specify the rules to sell. And we should have a ranking process in place for when the system encounters several different signals.

## Ranking

For this test I used a very simple PE-based ranking method. Simply, when the buy criteria is met, the system prefers the stocks with the lowest PE's (trailing 12 month).

## Sell Rules

The sell rules were also simple as follows:

**PEG > 4**

**PE > 75**

**Close = lowest close in 90 days.**

And the system was set to rebalance every three months.

## Strategy in simple terms

In simple terms, the system begins on the 3rd November 2000. If a stock meets the buy rules, the stock is bought and added to the portfolio. This process is continued every three months (the rebalance period) and if an existing position meets the sell rules, 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 lowest PE ratio.

And in this instance the stock universe used is the Portfolio123 All Fundamentals universe. This is Portfolio123's own universe which encompasses all US stocks where fundamental data is available and reported to the SEC.

So on the date of re-balance, if the stock is at its lowest in 90 days, if the PE is over 75, **OR** if the PEG is over 4, the stock is sold.

Any stocks that fit the buy criteria on the date of re-balance will be automatically added to the portfolio (if there is room).

The sell criteria is designed to find stocks that have experienced extreme upward price moves or stocks that may have stopped going upwards.

By selling a stock at it's lowest close in 90 days, we get rid of underperforming stocks that may have changed in trend. This allows us to cut losses short and let winning trades run.

## Clarification

### Why use PEG > 4?

Stocks with PEG's over 4 can be reasonably deemed as overpriced. These high valuation numbers very rarely occur and when they do the stock is usually in an extreme overbought condition.

### Why use PE > 75?

For the same reason as above, stock with PE's over 75 are usually very overpriced. PE's rarely reach these high levels.

### Why use the lowest close in 90 days?

No reason really. Only that 90 days is the same as the rebalancing period and this seems to do well. It also equates to one financial quarter. Exiting a stock when it has dropped helps cut losses short while winning stocks are left to run on.

## System Settings

We should now set an appropriate risk level, and include commission costs and slippage before we run the simulation on the data. (The data is survivorship free and from FactSet).

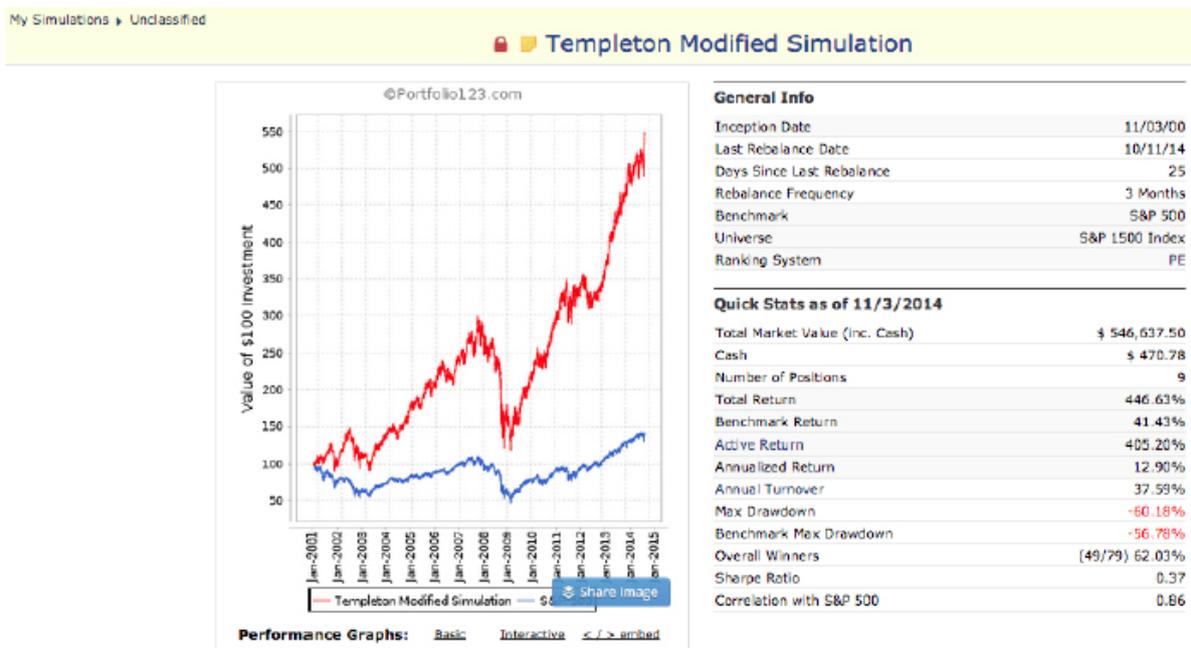
In this instance, commissions were set at \$1 per trade, in line with Interactive Brokers.

Starting capital was set at \$100,000 and the portfolio was weighted equally into 11 positions, a market value of 9% per stock.

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

Running this system on the S&P 1500 universe of stocks between 11/3/2000 and 11/3/2014 produced an annualised return of 12.90% which resulted in a total capital of \$546,637.50. The maximum drawdown was 60% and the Sharpe ratio 0.37.



These returns were substantially higher than buy-and-hold returns from the S&P 500 as shown in blue on the chart.

Now the results have been seen, here are the system's biggest holdings and recent trades. (As of 6 November 2014). The biggest holding in the portfolio was ORLY.

Top Holdings						Last 10 Trades					
No	Ticker		Weight	Return	Shares	Value	Date	Type	Ticker	Shares	Price
1	ORLY	[5d] [1y]	24.46%	615.09%	760.0	\$133,653.59	11/03/14	DIV	DFS	0.0	\$0.00
2	LTM	[5d] [1y]	12.55%	14.30%	1,223.0	\$68,598.07	10/31/14	DIV	AET	0.0	\$0.00
3	CI	[5d] [1y]	10.89%	117.11%	597.0	\$59,538.81	10/31/14	DIV	TMK	0.0	\$0.00
4	WRLD	[5d] [1y]	10.25%	219.14%	785.0	\$56,009.75	10/13/14	BUY	UNF	387.0	\$95.79
5	WLP	[5d] [1y]	9.50%	42.62%	411.0	\$51,913.41	10/13/14	BUY	DFS	589.0	\$62.96
6	AET	[5d] [1y]	9.30%	85.45%	618.0	\$50,830.50	10/13/14	SELL	TMK	-804.0	\$51.46
7	CF	[5d] [1y]	8.29%	24.80%	177.0	\$45,329.70	10/13/14	SELL	MCRI	-1,012.0	\$11.38
8	UNF	[5d] [1y]	7.82%	15.01%	387.0	\$42,744.15	10/13/14	SELL	SON	-538.0	\$38.19
9	DFS	[5d] [1y]	6.87%	1.00%	589.0	\$37,548.75	09/25/14	DIV	WLP	0.0	\$0.00
							09/10/14	DIV	SON	0.0	\$0.00

[view all](#)

## IMPROVEMENTS

The returns shown from the Templeton-Modified investing strategy are strong and significantly higher than buy-and-hold with the benchmark.

Can we improve on these returns? Maybe, but maybe not.

### Market Timing

The drawdown on the system is high, so introducing a market timing or hedging element could work wonders. Moving into cash when certain market conditions prevail could help shelter the long-only characteristic of the system.

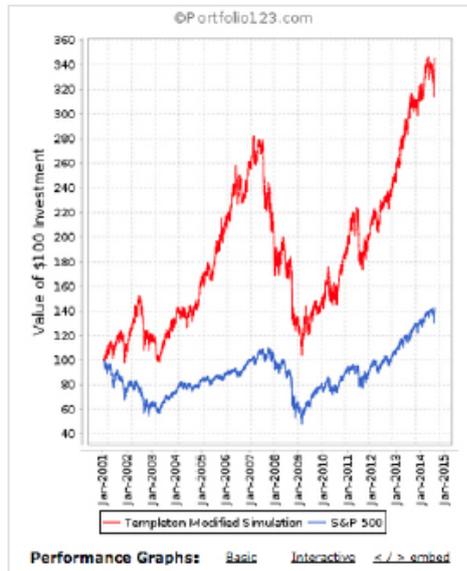
However, introducing market timing strategies is also a complex process that would need to be investigated properly.

### Trade Frequency

What about changing the rebalancing period so we are more active in the market and trade more frequently?

Well, I tried reducing both the rebalancing period and the amount of time spent in a losing trade and both had a negative effect on performance. As you can see from the next chart, when rebalancing the system daily, returns dropped to 9.25%:

## Templeton Modified Simulation



### General Info

Inception Date	11/03/00
Last Rebalance Date	11/01/14
Days Since Last Rebalance	4
Rebalance Frequency	Daily
Benchmark	S&P 500
Universe	S&P 1500 Index
Ranking System	PE

### Quick Stats as of 11/3/2014

Total Market Value (Inc. Cash)	\$ 344,947.06
Cash	\$ 157.76
Number of Positions	11
Total Return	244.95%
Benchmark Return	41.43%
Active Return	203.51%
Annualized Return	9.25%
Annual Turnover	509.43%
Max Drawdown	-63.26%
Benchmark Max Drawdown	-56.78%
Overall Winners	(294/887) 33.15%
Sharpe Ratio	0.27
Correlation with S&P 500	0.79

Longer rebalancing periods also performed poorly and 90 days seems to be the sweet spot.

We could also introduce stricter risk management in the form of stop losses. However, this is even more challenging and again, my tests have shown that most stop losses do not help returns.

## Diversification

Finally, Templeton was known to be a fan of emerging markets so we could incorporate a wider universe of stocks and introduce diversification.

So long as our fund is not sufficiently large, and as long as we don't go overboard, we should be able to find better returns by expanding our universe to incorporate smaller cap stocks and exotic stocks.

Making sure to pick stocks in different industries is another thing we could do to diversify the strategy and enhance profits and this is definitely something to look into next.

## Implementation

The easiest way to implement this strategy would be to use the stock screener at Portfolio123.com which contains all the financial metrics needed to run the Templeton-Modified strategy. The Portfolio123 screener would automatically identify the stocks to buy and sell at the right times but this service does come at a cost.

A free alternative would be to use a stock screener like Finviz or the Google stock screener. You can then dive into the company financials and set up a spreadsheet to calculate the more intricate operating margin and EPS calculations. Fortunately,

this only has to be done every three months.

Credits

Templeton.org, Portfolio123.com, Meet Invest.