12 MONTHS MOMENTUM MODEL

11 APRIL 2014

The simple 12 months momentum model is a great reminder to stick to simplicity. This is about as simple as you can make a trend following model. If the model you're developing cannot perform better than this model, you need to question why you're adding complexity. Any additional complexity must pay off or be removed. This model therefore is a great benchmark.

This model, in all its details, is included as a bonus mailing for subscribers to the Clenow Futures Intelligence Report. My aim is to keep you informed and educated on systematic trading and I plan to include these occasional bonus mailings with trading code, models and tools. As always, please contact me with any questions.

Andreas

12 Months Momentum Model

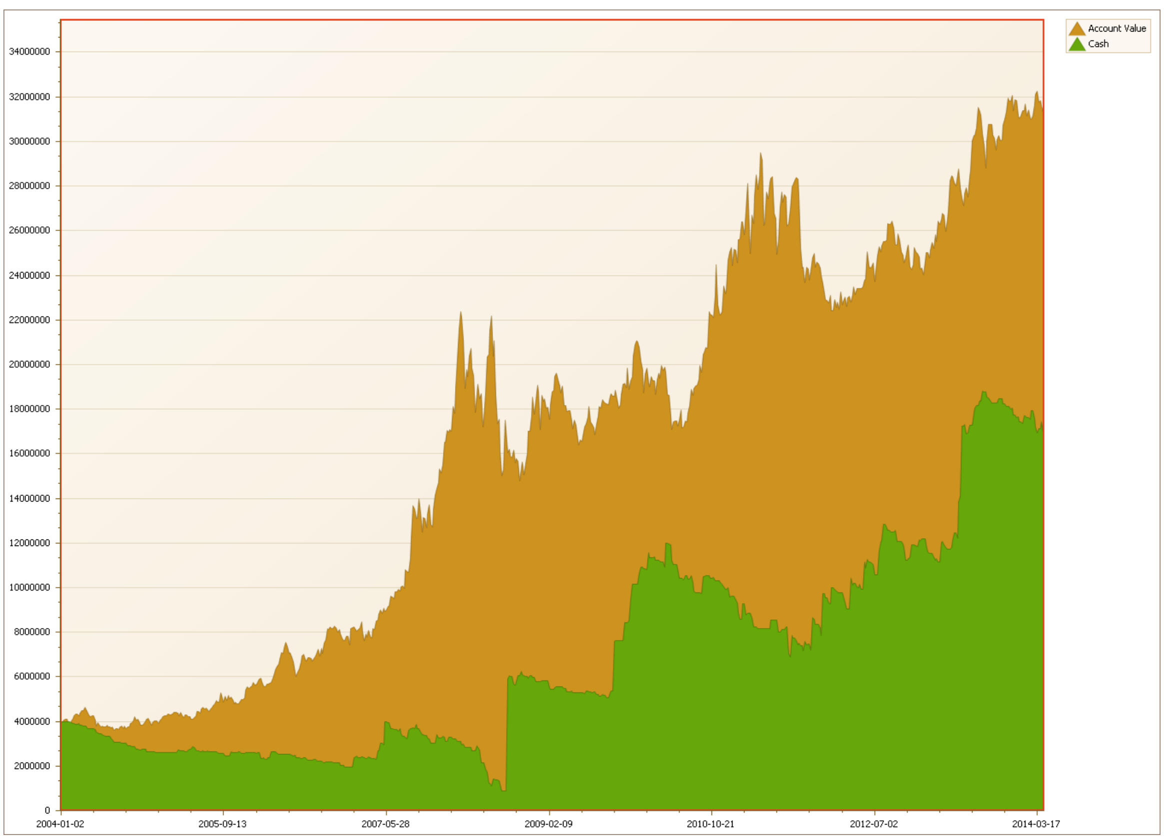
Concept

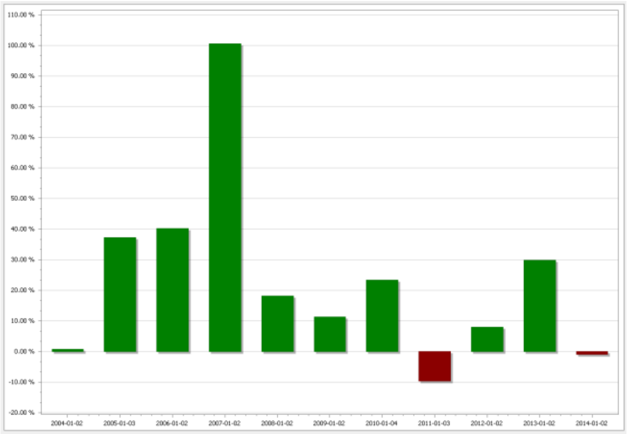
The model only considers two data points. Yesterday, and 250 trading days earlier. If yesterday's price is higher than a year ago, go long. If lower, go short.

To reduce whipsaws, we only check for this year high/low once a week. As the model has very long holding periods, a simple risk rebalancer is also included, which by default resets position sizes once a month.

This model may sound too dumb to actually work, but before you dismiss it, model it and see for yourself. My C# code for RightEdge is included later in this document.

First a few screenshots of a simulation report:





	All	Long	Short	Buy & Hold
Capital Summary				
Starting Capital	$4,000,000.00	$4,000,000.00	$4,000,000.00	$4,000,000.00
Ending Capital	$31,604,036.16	$33,387,554.85	$2,216,481.31	$6,763,047,566,0...
Net Profit ($)	$27,604,036.16	$29,387,554.85	($1,783,518.69)	$6,763,043,566,0...
Net Profit (%)	690.10 %	734.69 %	-44.59 %	169,076,089.15 %
APR	22.27 %	22.92 %	-5.58 %	303.38 %
Exposure	0.00 %	0.00 %	0.00 %	99.96 %
System Totals				
Number of Trades	959	486	473	32
Maximum Profit	$5,113,305.10	$5,113,305.10	$931,320.00	$1,231,650,000,0...
Maximum Loss	($503,893.94)	($503,893.94)	($459,740.00)	($3,025,375,000,...
Average Profit ($)	$28,784.19	$60,468.22	($3,770.65)	$211,345,111,437...
Average Profit (%)	9,077,534.31 %	14,035,143.65 %	3,983,669.33 %	169,076,089.15 %
Average Bars Held	89.44	103.35	75.16	2,658.97
Maximum Exposure	$39.44	$33.11	$22.22	$4,000,000.00
Max Exposure (%)	0.00 %	0.00 %	0.09 %	100.00 %
Max Exposure Date	2014-03-14 00:00	2014-03-28 00:00	2013-12-13 00:00	2004-01-02 00:00
Max Exposure (%) Date	2008-08-08 00:00	2008-06-27 00:00	2013-08-23 00:00	2004-01-02 00:00
Max Drawdown ($)	$8,386,683.49	$11,794,176.52	$9,673,275.43	$11,732,982,387,...
Max Drawdown (%)	36.62 %	52.11 %	91.81 %	140.16 %
Max Drawdown Date	2008-10-20 00:00	2008-10-16 00:00	2012-09-14 00:00	2009-03-02 00:00
Max Drawdown (%) Date	2008-10-20 00:00	2008-10-16 00:00	2012-09-14 00:00	2009-03-02 00:00
Winning Totals				
Winning Trades	**355**	**190**	**165**	**23**
Winning %	37.02 %	39.09 %	34.88 %	71.88 %
Gross Profit	$69,191,704.93	$50,042,307.72	$19,149,397.21	$11,392,596,691,...
Average Profit ($)	$194,906.21	$263,380.57	$116,056.95	$495,330,290,913...
Average Profit (%)	65,702,092.32 %	75,041,720.98 %	54,947,368.40 %	396,264,232.73 %
Average Bars Held	172.71	192.11	150.38	2,658.96
Consecutive Winners	19	17	14	8
Losing Totals				
Losing Trades	**603**	**295**	**308**	**9**
Losing %	62.88 %	60.70 %	65.12 %	28.13 %
Gross Loss	($41,587,668.77)	($20,654,752.88)	($20,932,915.90)	($4,629,553,125,...
Average Loss ($)	($68,967.94)	($70,016.11)	($67,964.01)	($514,394,791,66...
Average Loss (%)	-24,243,594.30 %	-25,209,651.43 %	-23,318,312.31 %	-411,515,833.33 %
Average Bars Held	40.57	46.53	34.86	2,659.00
Consecutive Losers	14	12	15	3
Portfolio Risk				
Payoff Ratio	2.826	3.762	1.708	0.963
Profit Factor	1.664	2.423	0.915	2.461
Recovery Factor	3.291	2.492	-0.184	0.576
Risk Adjusted Return	73,636.396	169,849.428	-8,406.340	3.035
Sharpe Ratio	0.769	0.764	0.128	0.312

Symbol	Profit	Profit Per Bar	Trades	Winners	Losers	Winning %	Avg Bars Held
BL2 022014	5,927,892.25	2,262.55	26	12	14	46.15 %	100.77
TY 022014	2,237,125.00	867.10	26	11	15	42.31 %	99.23
NK 022014	1,985,975.00	768.57	37	19	18	51.35 %	69.84
HG2 022014	1,920,587.50	744.99	24	13	11	54.17 %	107.42
ES 022014	1,853,104.50	717.15	9	5	4	55.56 %	287.11
NQ 022014	1,836,667.40	710.78	23	9	14	39.13 %	112.35
ED 022014	1,815,587.50	703.72	13	4	9	30.77 %	198.46
FLG 022014	1,786,219.39	688.60	21	7	14	33.33 %	123.52
US 022014	1,783,593.75	691.32	24	9	15	37.50 %	107.50
SI2 022014	1,658,330.00	643.26	24	13	11	54.17 %	107.42
GC2 022014	1,513,470.00	587.07	30	13	17	43.33 %	85.93
LB 022014	1,236,488.00	478.89	22	13	9	59.09 %	117.36
S2 022014	904,375.00	350.26	31	12	19	38.71 %	83.29
C2 022014	760,637.50	294.59	18	9	9	50.00 %	143.44
LH2 022014	747,300.00	289.43	46	12	34	26.09 %	56.13
SXE 022014	744,673.24	284.77	13	4	9	30.77 %	201.15
LGO 022014	639,875.00	242.65	47	23	24	48.94 %	56.11
CT2 022014	628,240.00	243.79	37	9	28	24.32 %	69.65
LSU 022014	550,315.00	212.31	33	15	18	45.45 %	78.55
HO2 022014	491,022.00	190.47	41	16	25	39.02 %	62.88
RB2 022014	456,036.00	176.90	41	18	23	43.90 %	62.88
FEI 022014	417,793.72	158.56	22	7	14	31.82 %	119.77
SM2 022014	377,020.00	146.30	33	16	17	48.48 %	78.09
KC2 022014	316,200.00	122.75	34	9	25	26.47 %	75.76
LCC 022014	152,608.66	58.85	38	11	27	28.95 %	68.24
HSI 022014	99,671.94	39.35	15	4	11	26.67 %	168.87
NG2 022014	55,330.00	21.45	23	7	16	30.43 %	112.13
RR2 022014	-362,350.00	-140.34	47	14	33	29.79 %	54.94
LC 022014	-809,290.00	-313.44	47	10	37	21.28 %	54.94
W2 022014	-878,775.00	-340.35	36	10	26	27.78 %	71.72
CL2 022014	-1,565,540.00	-607.27	43	14	29	32.56 %	59.95
SB2 022014	-1,676,147.20	-650.68	35	7	28	20.00 %	73.60

Conclusion of simulation

This might not be the very best trend model ever seen, but it's certainly very far from being the worst. Whenever you get too stuck on indicator parameters and settings, my advice is this: Start over. Study this simple model and learn from it. Indicators are overrated. Keep things as simple as possible. If you add indicators or other features, make sure every single addition adds value. If it doesn't, take it out.

Model Code – C# written for RightEdge

```
public class MySymbolScript : MySymbolScriptBase
{
	public override void Startup()
	{
		_atr = new AverageTrueRange(50);
		_atr.ChartSettings.ShowInChart = false;

		// Fetch system parameters
		SystemParameters prmtr = SystemData.SystemParameters;
		_riskFactor = prmtr["riskFactor"];
		_lookBack = (int) prmtr["lookBack"];
		_allowShorts = prmtr["allowShorts"];
		_rebalanceFrequency = (int)prmtr["rebalanceFreq"];
		_rebalance = (int)prmtr["rebalance"];

		// For keeping track of the price a year ago
		_yearAgo = new UserSeries();
		_yearAgo.ChartSettings.ShowInChart = true;
		_yearAgo.ChartSettings.ChartPaneName = "YearAgoPane";
	}
	AverageTrueRange _atr;
	double _riskFactor;
	int _lookBack;
	double _allowShorts;
	double _point_value;

	int currentBar = 0;
	int _rebalanceFrequency;
	int _rebalance;

	UserSeries _yearAgo;

	public override void NewBar()
	{
		if (SystemData.InLeadBars) return; // Don't run any logic until we have enough history.
		currentBar++; // Keep a running count of bars.

		long targetContracts;

#region Rebalance
		// If position size rebalance is enabled, adjust position sizes every X days.
		bool rebalanceToday = false;
		if ( (currentBar % _rebalanceFrequency == 0) && (_rebalance != 0) ) rebalanceToday = true;

		if ( rebalanceToday )
			{
				foreach(Position posx in OpenPositions)
					{
						targetContracts = positionSize(); // Recalculate position
size and adjust as needed.
						if ((targetContracts - posx.CurrentSize) > 0)

	SystemData.PositionManager.AddToPosition(posx.ID,(targetContracts -
posx.CurrentSize),OrderType.MarketOnOpen,0,"Rebalance");
						else

	SystemData.PositionManager.RemoveFromPosition(posx.ID, Math.Abs(targetContracts -
posx.CurrentSize),OrderType.MarketOnOpen,0,"Rebalance");
					}
			}
#endregion

		if(this.SystemData.CurrentDate.DayOfWeek != DayOfWeek.Friday) return; // Only check for trade
signals once a week.

		double yearAgo = Close.LookBack(_lookBack); // _lookBack defaults to 250.
		_yearAgo.Current = yearAgo;

		_point_value = Symbol.SymbolInformation.ContractSize;
		if (_point_value==0.0) _point_value = 1; // Else model won't work for other instruments than
futures.
		IList<Position> pos = SystemData.PositionManager.GetOpenPositions(Symbol);
			if(pos.Count==0) // No position open yet.
			{
				if (Close.Current > yearAgo) // go long
				{
```

```
                                        long numberOfContracts = (long) (
(Math.Max(1,SystemData.AccountValue * _riskFactor /
                                                                (_atr.Current * _point_value *
SystemData.AccountInfo.GetConversionRate(Symbol.CurrencyType,SystemData.AccountCurrency, QuoteType.Last) ))));

        TradingSystem.OpenPosition(Symbol,PositionType.Long,OrderType.MarketOnOpen,0,numberOfContracts);

                                }
                                else
                                {
                                        if (_allowShorts == 1) // go short, if allowed
                                        {
                                                long numberOfContracts = (long) (
(Math.Max(1,SystemData.AccountValue * _riskFactor /
                                                                (_atr.Current * _point_value *
SystemData.AccountInfo.GetConversionRate(Symbol.CurrencyType,SystemData.AccountCurrency, QuoteType.Last) ))));
// <<== fx logic needed

        TradingSystem.OpenPosition(Symbol,PositionType.Short,OrderType.MarketOnOpen,0,numberOfContracts);
                                        }
                                }

                        }
                        else
                        {
                                if ((Close.Current > yearAgo) && pos[0].Type == PositionType.Short) // Flip
short to long
                                {
                                        pos[0].CloseAtMarket("Market turned");
                                        long numberOfContracts = (long) (
(Math.Max(1,SystemData.AccountValue * _riskFactor /
                                                                (_atr.Current * _point_value *
SystemData.AccountInfo.GetConversionRate(Symbol.CurrencyType,SystemData.AccountCurrency, QuoteType.Last) ))));
// <<== fx logic needed

        TradingSystem.OpenPosition(Symbol,PositionType.Long,OrderType.MarketOnOpen,0,numberOfContracts);
                                }
                                else if((Close.Current < yearAgo) && pos[0].Type == PositionType.Long) //
Flip long to short
                                {
                                        pos[0].CloseAtMarket("Market turned");
                                        if (_allowShorts == 1)
                                        {
                                                long numberOfContracts = (long)
((Math.Max(1,SystemData.AccountValue * _riskFactor /
                                                                (_atr.Current * _point_value *
SystemData.AccountInfo.GetConversionRate(Symbol.CurrencyType,SystemData.AccountCurrency, QuoteType.Last) ))));
// <<== fx logic needed

        TradingSystem.OpenPosition(Symbol,PositionType.Short,OrderType.MarketOnOpen,0,numberOfContracts);
                                        }
                                }
                        }
        }
        private long positionSize() // Simple position size calculation
        {
                long contracts =
                (long)(Math.Max(1,SystemData.AccountValue * _riskFactor / (_atr.Current * _point_value *
SystemData.AccountInfo.GetConversionRate(Symbol.CurrencyType,SystemData.AccountCurrency, QuoteType.Last) )));
                return contracts;
        }
}
```