Alvarez Quant Trading

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August 11, 2014   in **Research** by Cesar Alvarez | 87 co

Simple Ideas for a Mean Reversion Strategy with Good Results

A reader sent me some trading rules he got from a newsletter from Nick Radge. He wanted to I
if these rules really did as well as published in the newsletter. They seemed too simple to prod
such good results. The strategy as presented was long and short and went on margin but he wa
to know how it did the long only since he did not short. After contacting Nick Radge at The
Chartist, I confirmed with him it was OK to publish these rules.

The Original Rules

Tested from 1/1/1995 to 5/31/2014. Maximum 20 positions at 10% of equity each. This means
strategy can be 200% invested. Rarely did one get 200% invested according to Nick Radge.

Setup

- Close greater than 100-day moving average
- Close less than the 5-day moving average
- 3 lower lows. (Not lower closes, I made this mistake the first time I wrote the code)
- Member of the Russell 1000

Buy

- Set a limit buy order for the next day if price falls another .5 times 10-day average true ra

Sell

- Close is greater than the previous day's close
- Sell on the next open

Comments on the Rules

No fancy rules are here. It is standard mean reversion strategy. At times the strategy will prod
more signals than there are open slots for. To trade this, one must be watching the markets du
the day and take the signals as they happen. This is not realistic for most people since they ar
full time traders sitting in front of their computers. One could automate this, but that is not a
simple task.

You may have taken pause at the very simple exit rule of 'an up close.' That rules brings back
memories while I was working for Connors Research. The first time I heard about this rule and
tested. I thought there is no way this rule could work. I figured it would destroy a perfectly go
strategy. I was flabbergasted that it worked and produced good results. This is why I say that o
should test ideas before throwing them out. You never know what will work.

The Tested Rules

I made the following changes to original rules.

- Tested from 1/1/2004 to 6/30/2014
- Allow max of 10 positions at 10% each. No margin.
- Added a liquidity rules of:
  - 21-day moving average of dollar-volume greater than $10 million
  - Price as trade greater than 1

When there are more signals than open positions, the code would randomly choose which sto
enter. I then ran 500 runs for each test.

Russell 1000 Results

No.	Exposure %	CAR	RAR	Max. Sys % Drawdown	# Trades	Avg % Profit/Loss	Avg Bars Held	% of Winners	2004 Ret %	2005 Ret %	2006 Ret %	2007 Ret %	2008 Ret %	2009 Ret %	2010 Ret %	2011 Ret %	2012 Ret %	2013 Ret %
Average	69.67	22.35	32.09	(21.02)	7183	0.31	3.58	63.37	20.20	15.73	25.43	17.33	13.39	48.32	40.46	1.10	23.07	29.20
Median	69.66	22.32	32.02	(20.90)	7183	0.31	3.58	63.37	20.18	15.56	25.26	17.25	13.32	48.10	40.43	1.31	22.91	29.04
Min	69.42	17.74	25.44	(26.35)	7118	0.26	3.54	62.26	3.82	2.50	7.93	2.84	(1.05)	27.98	22.44	(11.37)	7.45	16.67
Max	69.93	27.65	39.73	(17.03)	7249	0.37	3.60	64.55	35.32	31.74	41.28	35.45	32.38	74.69	57.64	10.59	41.81	42.48
StdDev	0.09	1.62	2.33	1.52	22.82	0.02	0.01	0.32	4.92	4.61	5.47	4.75	5.51	7.85	5.51	3.92	5.18	5.01

The average CAR of the 500 Monte Carlo runs is 22.35% with a Max DD of 21.02%. Surprisingl
good results from such simple rules. The standard deviation for CAR and MDD are much smal
than expected.

S&P 500 Results

No.	Exposure %	CAR	RAR	Max. Sys % Drawdown	# Trades	Avg % Profit/Loss	Avg Bars Held	% of Winners	2004 Ret %	2005 Ret %	2006 Ret %	2007 Ret %	2008 Ret %	2009 Ret %	2010 Ret %	2011 Ret %	2012 Ret %	2013 Ret %
Average	58.02	18.95	32.66	(18.20)	6011	0.32	3.56	63.87	10.78	11.73	17.61	18.39	15.96	44.13	39.06	(0.53)	15.93	22.3(
Median	58.02	18.95	32.66	(18.30)	6011	0.32	3.56	63.86	10.89	11.84	17.51	18.29	15.78	43.92	39.04	(0.43)	15.88	22.2
Min	57.69	16.05	27.68	(20.90)	5960	0.27	3.54	63.07	(2.60)	2.31	7.02	9.45	2.48	27.16	27.03	(9.33)	7.51	13.0
Max	58.34	21.66	37.31	(15.85)	6063	0.35	3.58	64.74	22.33	21.83	30.11	29.01	28.02	66.09	49.61	9.10	24.93	31.8
StdDev	0.09	1.11	1.91	0.96	15.90	0.02	0.01	0.29	3.83	3.15	3.89	3.17	3.91	5.71	3.73	2.69	3.28	2.9

The results are not as good as using the Russell 1000 but still good. Probably because of the sr
universe which leads to lower exposure.

Russell 3000 Results

No.	Exposure %	CAR	RAR	Max. Sys % Drawdown	# Trades	Avg % Profit/Loss	Avg Bars Held	% of Winners	2004 Ret %	2005 Ret %	2006 Ret %	2007 Ret %	2008 Ret %	2009 Ret %	2010 Ret %	2011 Ret %	2012 Ret %	2013 Ret %
Average	76.70	26.26	34.24	(23.45)	7851	0.33	3.60	62.94	32.03	22.89	32.12	22.93	20.46	52.77	25.44	4.36	9.36	51.
Median	76.70	26.33	34.30	(23.15)	7849	0.33	3.60	62.92	31.72	23.22	31.94	23.06	20.09	52.39	25.21	4.47	9.26	50.
Min	76.44	19.25	25.10	(31.70)	7763	0.26	3.57	61.76	12.61	5.84	2.95	(0.33)	(2.74)	31.75	9.90	(7.62)	(6.57)	22.
Max	77.01	33.36	43.49	(17.98)	7931	0.41	3.63	63.87	53.16	45.27	58.80	48.57	54.51	74.37	52.88	27.38	30.29	83.
StdDev	0.10	2.20	2.87	2.21	25.75	0.02	0.01	0.31	7.09	6.46	8.75	7.62	8.61	8.37	6.60	4.90	5.84	9.

Having a larger universe, gives us more exposure which gives higher CAR.

Spreadsheet

If you're interested in a spreadsheet of the data used to generate these tables, enter your information below, and I will send you a link to the spreadsheet. The spreadsheet includes the Monte Carlo run data. In the spreadsheet are details on how to obtain the AmiBroker code tha used for this post.

Final Thoughts

What I like about this strategy is how simple it is, yet produces good results. Only 3 set up rul One really simple exit rule that one would think would not work. The biggest issue with the st is that most people cannot trade it because it requires being in front of the market all day long future post, we will look into changes the rules to make it more tradable for the average perso

Added on 8/5/2015: Want to see how a maximum loss stop changes the results, read
Maximum Loss Stops: Do you really need them?

Added on 8/15/2014: In the comment thread below, a couple of people questioned the results. a researcher friend of mine code up the rules as stated on this post. His results matched mine exactly. This gives me complete confidence that the results are correct.

Good Quant Trading,

Fill in for free spreadsheet:

First Name

Last Name

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Henjo Jie - *August 11, 2014*

↩ Repl

Hi Cesar,

I loved your work in TradingMarkets. It is because of you guys that I hav
started looking into mean reversion strategies for stocks.

With the issue of many signals and watching the screen, Interactive
Brokers has Basket Trader facility that allows a trader to enter many
market-if-touched orders. Thus, he/she would not need to sit in front of
the screen all day as IB will automatically submit the order when the pri
condition is met. The maximum position that can be opened during the
will then depend on the funding permission the trader has.

A quick question if you don't mind. I am using Amibroker as well to run
monte carlo simulation. However, I cannot produce the YEARLY statisti
of returns (average, min, max, median) from Amibroker. Is that a custom
backtester? Or do you run it manually for each year?

Thank you for your answer.
Henjo

Cesar Alvarez - *August 11, 2014*

↩ Repl

I am very familiar with basket orders. The question is if one has a
margin account but does not want to on margin, how does one do th

I used the CBT to output the yearly return for each run. Then I took
the runs pasted them into Excel. From there I generated the statistic

Cesar

Chris *- August 11, 2014*   ↱ Repl

I'm surprised this strategy has positive return even in 2008.

Cesar Alvarez *- August 12, 2014*   ↱ Repl

2008 tends to be a good year for mean reversion strategies.

Jane Fox *- August 18, 2014*   ↱ Repl

I agree Cesar, 2008 was an awesome year for mean reversion.

Ola Hansson *- August 11, 2014*   ↱ Repl

Hi Cesar,

Thanks for the great work!

I'm currently following another of Nick Radge's strategies from his book
Unholy Grails. This is a breakout /trendfollowing strategy. I think that
complementing this with a mean reversion strategy would be a good idea
What you are describing here looks temptingly good. I presume you are i
including commission/slippage in the tests? If you are trading in Austral
this is an issue unfortunately.

If I understand it correctly you would enter your orders EOD, so there is

really no reason to monitor the market during the day, or am I missing something?

Keep up the good work!

Cheers,
Ola

Cesar Alvarez *- August 12, 2014*   ↱ Repl

Yes, I do include $.01/share for commission/slippage. See my FAQ, http://alvarezquanttrading.com/faq/, for more details on how I do m tests. The issue is that you may have 40 stocks that set up the night before and you do not know which will trigger. In 30 of those trigger, you only want to get into the first 10 that do.

Pete *- August 12, 2014*   ↱ Repl

Some simple questions:

1) What about turnover of the strategy? Do you use any cost and slippag
2) Survivorship bias can have a very big impact on performance, probabl more then we can imagine. Do you consider it?
3) Which software do you use for backtest?
4) don you know a solution (software + data provider) that made simple backtesting with delisted stocks (eliminate survivorship bias)?

Cesar Alvarez *- August 12, 2014*　　　　　　　　　　　↰ Repl

See my FAQ, http://alvarezquanttrading.com/faq/, for more details o
how I do my tests. This answers all your questions and then some.
1 – The turnover is high because of the quick exit. I use $.01/share fo
commission/slippage.
2 – No survivorship bias since my data has delisted stocks.
3 – I use AmiBroker
4 – I use AmiBroker and Premimum Data for my testing.

Serg *- August 12, 2014*　　　　　　　　　　　↱ Repl

Pls show data for NASDAQ-100 and S&P 100. I get the impression your
study involves selection bias, i.e. you only show the good results. I may l
wrong but this is what my analysis says.

Also please include data from 05/31/2014 to present where the Russel 2C
has suffered a lot.

More importantly, this is a simple system but has 6 parameters so from t
PoV of curve-fitting this is not very simple.

Cesar Alvarez *- August 12, 2014*　　　　　　　　　　　↱ Repl

Maybe in a follow up post I will include SP100 & Dasdaq-100. My gu
they will not do as well because of lack of exposure. Running a Monte
Carlo run takes time. If I do a follow up, I will also include R2000.

Two of the rules are liquidity rules which the original rule did not ha
It is not realistic to test these lower volume stocks. My guess is if I
removed these rules results would improve because that has been my

experience.

I disagree that these rules constitute curve fitting. They only a few
rules, simple parameters, and each rule makes sense. The issue with
when a strategy has crossed from being non-curve-fitted to curve-fit
is that there is a large grey area in between which people have
disagreements on when curve-fitting has happened. The good part is
that if one thinks curve-fitting has happened, one can ignore the
research and not trade.

Serg *- August 12, 2014*   ↪ Repl

In the period tested there are about 2,375 bars bit you have 7,18
trades for the Russell 1000. Divide that by 10 and multiply by th
average holding period and you get 2,571 bars. This means that
many positions overlap and although you open 10 positions at
time max you hold many more open. This is why your CAR is
overstated. If you adjust that and you add reasonable slippage y
do not even make it near buy and hold with reinvested dividend
Your high CAR is a red flag. Any CAR above 15% is a red flag.
Apparently, your backtests are based on using open equity to bu
more stock. You cannot do this in real life. You have to add mor
to the account. When you do that and also account properly for
slippages, the method is a loser.

Cesar Alvarez *- August 12, 2014*   ↪ Repl

There are 10.5 years in the test with 252 bars per year. Tha
gives 2646 bars in the test not 2375. The average hold is 3

bars but one needs to understand how AmiBroker calculat

the number of bars held for a position. If I enter a position

today at the open and exit tomorrow on the open, AmiBro

calculates that as a 2 bar hold. In reality that is only 1 bar

time. One should subtract one from the 'Avg Bards Held'

that AmiBroker prrovides.

If we take (((7183 trades)/(10 positions)) * (3.58-1

bars))/(2646 total bars in test)*100=70% which is very clos

to the 'Exposure %' in the AmiBroker report of 69.67%. By

these calculations all is good.

Because of your concerns, I double checked my code to ma

sure I was not entering more than 10 positions or using

margin. I am always aware that I can (and I do) make

mistakes. After checking my code, I see no problems.

Serg *- August 12, 2014*   ↱ Repl

Actually it's more complicated than that and the

exposure calculation is wrong because you are doing

long-only system and you have to look only in perio

when the conditions are met. Given that, the system

probably holding many more positions than 10 at a

given time. Note that most retail backtresters calcul

CAR based on starting and initial equity and do not

account for margin. The only way for this to be

resolved is for you to provide a complete trade-by-

trade report here so everyone can be convinced that

you are not using margin in your CAR calculations. I

thought this is what was included in the spreadshee

but I only found a link there for buying the Amibroke

code for $50. If this system was a true winner I doesr

make sense to sell it for $50, this is what the theory

rational behavior says.

I am not convinced at all that your results are correc

or that your code is correct. The only way for you to

convince me is to provide complete results or code s

that your readers can reproduce them.

Cesar Alvarez *- August 14, 2014*   ↱ Repl

Serg,

Here is the code that prevents me from having more than

100% invested.

Here is the code that limits me to not having more than 1(

positions or having more than 100% invested. Unless

AmiBroker, has suddenly broken, these lines should preve

me from having more than 100% invested.

```
posqty = 10;
pctPerPosition = 100/posqty;
SetOption("MarginRequirement",100);
SetPositionSize(pctPerPosition,spsPercentOfEquity);
```

If you still believe the code is wrong, I suggest that you co

up the strategy and post your results. I have given you the

full rules. I am hiding nothing. There still may be an error

the code that I have not found, but at this point I leave it to you to code and post results that contradict my results.

Cesar

Serg - *August 15, 2014*

↪ Repl

I'm only trying to help hear but pls no reversal of burden of proof will be accepted. Which version of A do you use?

Try adding this

SetOption("MaxOpenPositions",10);

I will repeat again that the high return should have immediately triggered a red flag. Anyone with more than 3 months backtesting experience knows this.

Cesar Alvarez - *August 15, 2014*

↪ Repl

I am doing that. Here is that line of code SetOption("MaxOpenPositions",posqty);

Cesar Alvarez *- August 15, 2014*   ↱ Repl

Because of your continued concerns and that I want
make sure the code is correct (like I have said before
is possible that I have a bug that I have not found), I
asked a favor from someone I know who is a
professional researcher with very strong AmiBroker
skills, to program the strategy as the rules as given i
this post. When I worked for Connors Research the v
we verified a strategy was by giving the English rules
(as in this post) to another researching to code up. V
then compared results.

The researcher's results for this strategy matched m
identically. At this point, I consider the strategy
verified and correct. Unless you want to say the rule:
stated in the post are wrong.

Aaron *- August 12, 2014*   ↱ Repl

I would like a copy of the spreadsheet. Thanks.

Aaron *- August 12, 2014*   ↱ Repl

Also, as far as the rules go. Does the close below the 5 day MA have t
happen first, and then the 3 lower lows after that? Or can the 3 lower
lows begin above the MA and then the close below the 5 day MA
happens on the 3rd day?

Cesar Alvarez *- August 12, 2014*   Repl

To get a copy of the spreadsheet. Fill out the form at the bottom of the post.

On the setup day, the close has be under the MA5 and that day at least the third day in a row of 3 lower lows.

Cesar

Jim P. *- August 13, 2014*   Repl

Instead of trading individual stocks, how would your results be different trading ETF SPY, either Long, Short, or Money mkt, and only at EOD? Thanks for sharing your work. Regards, Jim

Cesar Alvarez *- August 13, 2014*   Repl

One would have to make big changes in the strategy because of lack trades, the exposure would be very low and thus low CAGR.

Jim P. *- August 13, 2014*   Repl

Thank you Cesar. That was my suspicion as well, …that there would be few trades if one were trading SPY. Is there a favorite strategy (of yours, that you recommend) for trading SPY at EOD only? Thank you.

Cesar Alvarez *- August 14, 2014*   ↩ Repl

I currently do not trade the SPYs. I am researching a possible SPY
option trading strategy. But that is in the early stages of investigatio

Alex *- August 14, 2014*   ↩ Repl

Hello, what AFL statement are you using to limit open positions to 10. A
someone already pointed out it appears you system takes more than 10
positions and exceeds cash equity. I remember AFL has a command to li
the opening of new positions to 10 but i do not recall it having one to lin
new positions based on already open ones. As already noted the CAGR is
unrealistic and this is possibly due to overestimation.

Cesar Alvarez *- August 14, 2014*   ↩ Repl

As I have pointed out, I believe the code is correct. Not to say that it
could still be wrong. I have checked it several times. Why do you thin
the code is wrong?

Here is the code that limits me to not having more than 10 positions
having more than 100% invested. Unless AmiBroker, has suddenly
broken, these lines should prevent me from having more than 100%
invested.

posqty = 10;
pctPerPosition = 100/posqty;
SetOption("MarginRequirement",100);

SetPositionSize(pctPerPosition,spsPercentOfEquity);

Cesar Alvarez *- August 15, 2014*   ↪ Repl

One more line of code
SetOption("MaxOpenPositions",posqty);

Shawn *- August 14, 2014*   ↪ Repl

Hi Cesar

Thanks for the awesome, interesting site & blog.

With regards to the exit of this system: "Close is greater than the previou
day's close", how do you exit if this condition never actually occurs? Tha
is, the exit requires a close price greater than the previous day's close pr
so what if the price just kept falling, as an example. Wouldnt you hold it
the way down? Or if the price kept oscillating in a range such that this
condition never came true. The stock might be held forever?

What am I missing?

Cesar Alvarez *- August 15, 2014*   ↪ Repl

Yes in theory the stock could close down every day until it hit zero. I
all my testing this has never happened. If the price oscillates, then w
will get out because in order to oscillate the stock must close up and
then we would get out. I agree with you it is a strange exit.

Greg *- August 15, 2014*   ↱ Repl

Cesar,

What would be the inverse version of this strategy? (i.e what are the inp

if you wanted to trade short?)

Cesar Alvarez *- August 15, 2014*   ↱ Repl

First, I have not tested the short version of this. The inverse rules

changes are

Setup changes would be

Close < MA100 Three higher highs Close > MA5

Buy change

Trigger is Previous close + .5 * ATR10

Sell change

Sell on first down close

Serg *- August 16, 2014*   ↱ Repl

Cesar: " I asked a favor from someone I know who is a professional

researcher with very strong AmiBroker skills, to program the strategy as

the rules as given in this post."

I find it interesting that this person was able to program this strategy,

generate the results and test them in less than half a day. Originally, wh

you gave the rules the option I gave you was not included. This is what y
gave:

```
posqty = 10;
pctPerPosition = 100/posqty;
SetOption("MarginRequirement",100);
SetPositionSize(pctPerPosition,spsPercentOfEquity);
```

And this one I suggested

```
SetOption("MaxOpenPositions",posqty);
```

was not included. Your post that this must be included has a time stamp
least 3 hours after my post. I do not see a reason for omitting it in the fir
place because it deals with exactly the issues raised.

Therefore, one way for you to prove that your results are correct is to po
an excel file of the Amibroker trade-by-trade output for the first case of
Russell 1000. I don't think you should have any objections to that. Then
issue will be settled either way. You may have something here but the oc
are against you and you possibly either have optimized the system to fit
past data or you have a bug that overstates CAGR. If this system worked
and actually produces a CAGR that high it does not make any sense to se
the code for $50. Please do not tell me you are a good Samaritan and you
want to make your blog visitors rich for a $50 down.

Cesar Alvarez *- August 16, 2014*   ↪ Repl

The reason for the omission is I missed that one line of code when I
copied over what I wanted to show. Since you have had someone cod
up, you can verify for yourself if the results are correct or not. As far

am concerned, these results are correct as I stated I had a another person code them up and get exactly the same results. I appreciate yo bringing up your concerns that the code was wrong but I have proved myself there are no issues. I will only spend more time and energy on this topic, if someone brings proof that the results are wrong.

Piotr - *August 16, 2014*   ↱ Repl

This strategy is in fact an intraday strategy, not interday. You might hav many stocks that meets the criteria on given day. In real life however, yo would only buy these stock, that will go down earlier. Having EOD data y do not really know, which one you will buy. That is why you need to use MonteCarlo

Lets suppose, that on given fay 5 stocks meet criteria and goes down by least 5 percent. After few days 4 of them reverses ("goog stocks") and on goes further down ("bad stock"). MonteCarlo assumes that the distributi of probability is uniform. Other words, you will buy good stocks in 4 case and the bad one in 1 case.

And what if bad stock almost always goes down quicker that good stock? That will mean, that the distribution of probability is not uniform. And t test results are not reliable. My question is: why could you assume that t first stock that will go down is a good stock. How do you know, that the stock that will first go down to limit on given day is not "bad stock". I an asking the question, because I created similar mean reversion strategy, b this question worries me

Cesar Alvarez - *August 16, 2014*   ↱ Repl

I did do a Monte Carlo simulation on these results. We do not know

which stocks trigger first. You are correct that we do not know if bad

stocks tends to trigger first or not, thus the distribution is not unifor

AZ Trader *- August 16, 2014*

↱ Repl

what does the code look like for the following buy rule?:

"Set a limit buy order for the next day if price falls another .5 times 10-d

average true range."

I ask becuase it seems every time I attempt to code a limit order in

amibroker I get a Holy Grail outcome!

Thanks.

Cesar Alvarez *- August 16, 2014*

↱ Repl

The reason you end up with a Holy Grail system is that there may be

100 signals and your system like this one, takes those that signal. In

most peoples real trading they are not sitting in front of the compute

to see which ones trigger first and then entering those. The more like

case is that one places limit orders for the first 10 ranked stocks. But

then these may or may not get filled. Thus you end up with a much

lower exposure and lower CAGR.

Piotr *- August 18, 2014*

↱ Repl

If you have many signals on one day. instead of placing first say

10, you might place One-Cancel-All.That way you will always b
the stock, that first triggers on the limit. However, you will buy
maximum one stock daily, On the other hand, if you have 100
stocks with signal and if you place orders for 10 of them, you
might buy nothing

Regards

AZ Trader *- August 16, 2014*   ↱ Repl

Also, thanks for sharing this very hard work you have done. It seems no
good deed goes unpunished.

Thanks for the great info!

Howard Bandy *- August 20, 2014*   ↱ Repl

Hi Cesar —

Nicely done.

Results improve considerably when the requirement that the price be ab
its 100 day moving average is removed.

Cesar Alvarez *- August 20, 2014*   ↱ Repl

Thank you. I have had several people email about suggestions on hov

to improve the strategy or make it easier to trade. I will likely do a po
on that in the future. I will remember to test by removing the MA100
rule.

Derek *- August 21, 2014*   → Repl

Good work but needs some checking. Would it be possible to provide the
Ami backtest report for the S&P 500 case? Thanks

Nick Radge *- August 21, 2014*   → Repl

Cesar,

I ran the data as per your adjustments back to 1995 using delisted and
historical constiuents to alleviate survivorship bias (this also offrs some
out-of-sample data as your test started 2004). I then ran the same
removing the 100-day moving average as per Howard's suggestion: Resu
as follows (Original vs Adjusted):

CAGR: 26.6% vs 41.9%
Trades: 7359 vs 10755
Win%: 64.9% vs 65.2%
maxDD: -14.6% vs -32.8%
W/L: 0.82 vs 0.77

Certainly a significant outperformance, but coming with greater downsi
I highly doubt the average trader could handle a 32% drawdown –
regardless of the upside. My experience suggests anything over 20% is a
struggle.

FWIW, I personally trade a more advanced mean reversion system on an

end-of-day basis meaning I don't need to sit in front of a screen. It can b
done.

Thanks for the write-up.

Nick Radge

http://www.thechartist.com.au

Cesar Alvarez *- August 22, 2014*   ↱ Repl

Interesting to see these results. I don't like running test back into th
late 90's because those years tend to have some amazing outsized
results. I agree that most people cannot handle drawdowns past 20%
find even 10% to be tough for a lot of people. I agree it can be done. I
just requires some experience on order placement from the user.

Amit Kumar *- August 21, 2014*   ↱ Repl

Based on Nick's stats, performance increase of 15.3 % is coming at a cost
18.2 % increase in draw-down. Therefore I would personally not remove
the 100 day MAV.

Gary *- September 4, 2014*   ↱ Repl

Cesar,

I feel I am missing the point, but if you start your tests on a given date, w
must you run 500 separate tests? Is this because the random parameter

leads to different results each time?

Also, how do you run these multiple tests using Amibroker?

Much appreciated
Gary

Cesar Alvarez *- September 4, 2014*   ↱ Repl

I use these two lines:
Optimize("MC run #", 1, 1, 500, 1);
PositionScore = Random();

Chris Trader *- September 14, 2014*   ↱ Repl

I backtested this strategy myself, I can comfirm the results above. It seer
there is no survivership bias involved as there are good results on randor
portfolios as well. You can increase the return even more with a same-da
exit on close, althoug that rule makes it even less tradable manually. Thi
strategy needs automatic execute anyway…

Thomas *- September 14, 2014*   ↱ Repl

Hi Cesar,
i could not find any information in your describtion neither in the
comments regarding initial stopp loss.
What value did you use for that?

Regards

Thomas

Cesar Alvarez *- September 14, 2014*   ↪ Repl

There is no stop loss.

Stephane *- September 14, 2014*   ↪ Repl

HI Cesar,

Thanks for all this great and interesting materials. I am quite new to
Amibroker and I just wanted to know what you meant by "3 lower lows.
(Not lower closes, I made this mistake the first time I wrote the code)". I
3 LLV in a row? Is it 3 LLV over a certain period? If not on a close, then o
what?

Thanks
Stephane

Cesar Alvarez *- September 15, 2014*   ↪ Repl

In AmiBroker the code would be "L < Ref(L, -1)" for three bars. One v
to code that is LLV(L < Ref(L, -1), 3)

Marco *- October 7, 2014*

It's incredible how mean reverting systems always beat trend forrowing ones… The same I experience with my patterns trading. https://nightlypatterns.wordpress.com

David Ham *- January 16, 2015*

I can personally verify that this strategy works in practice. I have been trading a very similar method to this constantly since April 2013. I trade much smaller on each position and trade it globally on Interactive Broke My 6 figure (now 7 figure) account is up 75% over that 22 month period. Max drawdown was -8.6% this last October.

My thanks particularly to Cesar as I was a longtime paying student of Connors research and all my methods are based on them.

I built an API to automate the whole process.

Cesar Alvarez *- January 16, 2015*

David, thank you for the kind words. It is good to hear that your strategy is doing great. Keep at it.

knatta *- March 21, 2015*

David Ham
when you say, "built an API to automate the whole process"
is that in Amibroker ? I use Tradestation so ask

Andy *- January 21, 2015*   ↪ Repl

Do you have a rule of thumb for when it's best to trade mean reversion a

when it's best to trade trend?

(I know, 64 million dollar question, but there's got to be a basic, simple i

of thumb.)

Thanks for your fantastic work.

Cesar Alvarez *- January 21, 2015*   ↪ Repl

I wish I had simple rule of thumb for that but I don't. Sorry.

Dave *- February 3, 2015*   ↪ Repl

Hi Cesar

I've looked at this before, and will start trading it once I've buil

my current momentum portfolio (based on Nick Radge's Weeke

Trend Trader) up to the level I want.

I'd just assumed you run both at the same time (momentum/tre

and mean reversal) on the understanding that one should be

providing returns when the other one isn't.

Is that right or too simplistic?

Regards
Dave

Cesar Alvarez *- February 3, 2015*   ↱ Repl

Dave,

That is what a lot of people do. I have not found a trend
following strategy that I like. I do trade multiple strategie
with the same general idea that one is at least working at
times. But remember, when markets go to hell correlation
goes to 1.

knatta *- March 21, 2015*   ↱ Repl

Thks Cesar for posting this strategy. I am going to try the same like what
Dave said here. test this mean strategy along with a trend following

Ellis *- March 25, 2015*   ↱ Repl

Hi Cesar,

Thanks for a great contribution to mean reversion trading (MRV). I ran
across your blog while working my way through Howard Bandy's book,

"Mean Reversion Trading Systems". This is a very valuable work that I highly recommend.

I am wondering whether MRV works as well with Forex or futures marke Do you have any experience with this?

Ellis

Cesar Alvarez *- March 25, 2015*

Reply

First let me say I am not a Forex or futures trader. What little testing have done in these markets, MR seems to work on the futures market and not as much on Forex.

Phil Milsom *- March 29, 2015*

Repl

I'm very interested in your spreadsheet and the afl code. I have entered information so you can send me the link to your spreadsheet. to obtain t AmiBroker code that you used for this post.

Kind Regards
Phil.

Ellis *- April 6, 2015*

Repl

Very interesting thread here. I've really enjoyed it.

When I try to put this into Amibroker, my results are similar to what's posted, but all my trades start with the letter "A". I think there are so ma trades that fit the criteria (3 lowest lows, etc.) that the system just picks the first 10 stocks.

Is there any way to avoid that?

Thanks,

Ellis

Cesar Alvarez *- April 6, 2015*   ↱ Repl

Ellis,

Assuming you are using AmiBroker what you can do is invest $1000 ¡ position, allow fractional shares and start with $1,000,000 portfolio.

Cesar

Ed *- June 4, 2015*   ↱ Repl

Cesar,

Did you have the "allow same bar exit" setting checked in Amibroker backtest settings? I got the same good results until I turned same bar ex off.

See symbol CHK on 3 June 2015. With "allow same bar exit" on, the syst had a positive return that day. When you look at an intraday chart the sequence of the pricing would make a profitable trade impossible.

My coding could be a little different than yours.

Cesar Alvarez - *June 4, 2015*

↱ Repl

I have SetOption("AllowSameBarExit", false); in my code.

Ed - *June 4, 2015*

↱ Repl

Can you send a copy of your spreadsheet so I can compare?

Thanks.

Mike - *June 11, 2015*

↱ Repl

Could you please send a copy of the spreadsheet so that I can compare? Thanks.

Cesar Alvarez - *June 11, 2015*

↱ Repl

Fill in the form on the post to get the spreadsheet.

UC *- August 4, 2015*

↱ Repl

Cesar,

Nice strategy, thanks for backtesting and share the results with us.

Based on my small experience, I guess that what can eventually ruin the party is the slippage.

With M/R strategies on stocks and using IB I either get 10 time your slippage or miss some fills.

Apart of using round lots, based on your vast experience, is there any wa to reduce slippage? By mean of chosing right orders and/or routing?

Cesar Alvarez *- August 4, 2015*

↱ Repl

I assume you mean slippage on the exit since entry is a limit entry which you can only have positive slippage. Are you seeing this slippa on low volume high spread stocks? I tend to trade larger stocks. But even there sometimes slippage is an issue. I also use TWAP to get ou which avoids some of the issues but then makes it harder to track ho your system does in real life since one cannot test a TWAP exit.

UC *- August 5, 2015*

↱ Repl

I see, TWAP could be go for exits, but not for entries.
Best MR entries occour during shift moves that preceed reversal. In such cases using LIT orders allows me to get all orders executed, but with bad

fills. On the other hand, LMT orders allow to have zero slippage, yes, but some of them would not get filled.

What would you consider a decent slippage for a model trading $5-$70 U common stock excahnged 150,000 times a day, on average? Any reccomandation to reduce slippage on entries?

Thank you in advance

Cesar Alvarez *- August 5, 2015*

Repl

I am not sure what I would consider slippage 'good' in that range? Pa of it depends on how big my edge is vs how much am I willing to give What I would do is determine you avg % slippage and then use that value for your backtests and see what happens.

JMc *- September 29, 2015*

Repl

Interesting read. I have filled in the form to obtain the spreadsheet.Just wondering if you have the Metastock coding for the system as well? If so are you please able to email to the email address noted. Thanks.

Cesar Alvarez *- September 30, 2015*

Repl

Sorry but I don't do any Metatstock programming.

kbg *- October 6, 2015*

Repl

Cesar…it is amazing what one *doesn't* think of. Thanks for the

Positionscore = Random(); tip above. I've been leery of limit entry system
due to what was discussed earlier in the thread regarding what candidate
may or may not get executed. Running positionscore in AB as random an
still seeing good results is a huge confidence booster.

Cesar Alvarez *- October 6, 2015*　　　　↱ Repl

Glad you liked that idea.

Michael *- October 23, 2015*　　　　↱ Repl

A great system that provides an awesome equity curve with minimal
drawdown. However, I can understand the difficulty in practically applyi
this system. Alvarez, have there been any changes to the rules to make i
more tradeable for the average person?

Cesar Alvarez *- October 24, 2015*　　　　↱ Repl

I have written about lots of variations of this strategy. Here is one th
is more tradeable: Stop Losses and Profit Targets. Plus Happy Birthd
Excel!

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Testimo

*"After working w
unpredictable an*

- Individual Inves

*"There no way I'd
the professional a*

- Mark Angil, RBI

*"...I've known Ce.
resource for finar
and coding. ...."*

Rob Davenport -

"… Eventually, I
were engineered
very easy to unde
world…"

- Ronen Marom