Trading system
All2Gather

Documentation

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Summary

This document describes important aspects of the All2Gather FOREX trading system.

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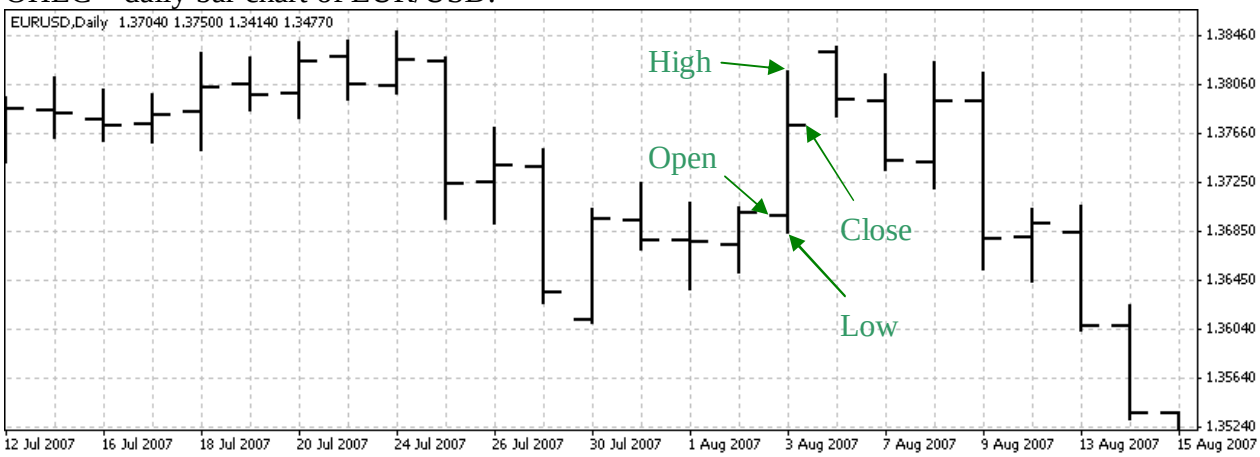
1. Forex trading

1.1. Technical analysis

I trade in a fully technical way. I use just the information from the price chart. I don't care about any news or other "fundamental" information.

OHLC – daily bar chart of EUR/USD:



1.2. Indicators vs. Price Action

Indicators (like Moving Average, Bollinger Bands, RSI, CCI, etc.) are almost always lagging. I.e. they don't reflect, what's happening right now. Therefore I use purely "Price Action" approach – formations and patterns on the price chart.

1.3. Leverage

Trader can purchase money from the broker to buy or sell a security. It means that just a small amount of money is needed to control a much bigger amount.
I don't buy or sell any money physically, but the broker just opens a "position" for me.

To understand in detail how margin trading and leverage work please study some materials about basic principles of trading.

1.4. Long/Short position

Long position means buying certain number of lots of a currency pair. If the price goes up, I am earning, if the price goes down, I am losing.

Short position means selling certain number of lots of a currency pair. If the price goes up, I am losing, if the price goes down, I am earning.

Long and short positions are totally equal; there is nothing bad in "shorting".

However it happens that a market has slightly different characteristic for the moves downwards than for the moves upwards.

1.5. Pip

Pip is the smallest change the price can do.
(E.g. the difference between the price 1.34852 and 1.34952 is 100 pips.)

1.6. Spread

Spread is a difference between the Bid rate and Ask rate. Broker takes this difference instead of commision for each trade realized (no matter if winning or losing).

1.7. Swap

Swap is based on the difference between interest rates of particular currencies in the traded pair. Trader will pay or receive this difference if the position is left open over night.

Information about actual spreads and swaps can be found on the broker's website.

2. All2Gather system components

2.1. Price patterns

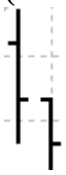
All patterns described below generally try to benefit from a situation, when the market will probably change its direction. For me they work best on the Daily timeframe.

Entry signals from these patterns can be well combined with a Bailout Exit (exit on the first profitable Open).

2.1.1. WillReversal

It is a pattern the famous trader Larry Williams in his books declares to be one of the strongest patterns he has ever discovered and used.

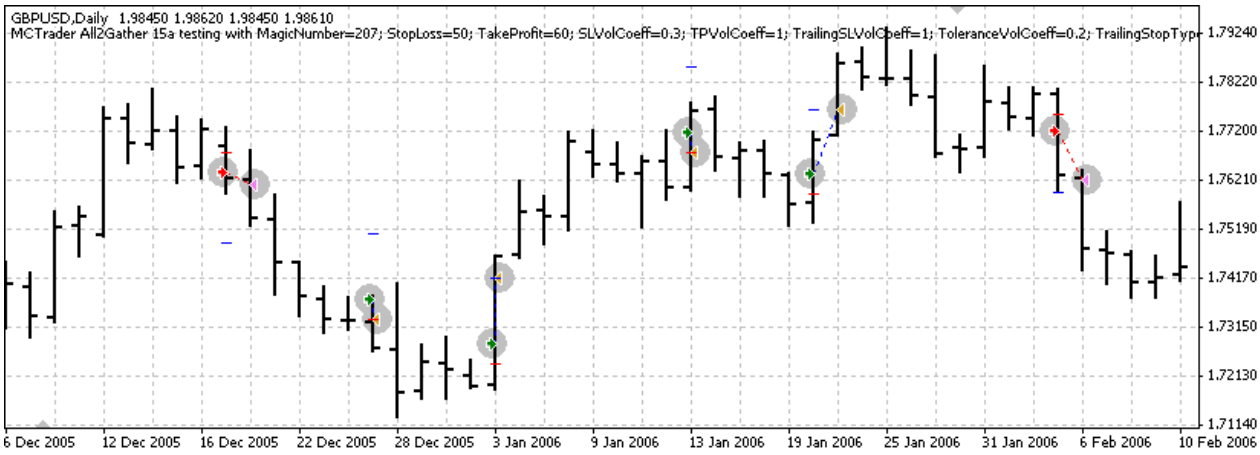
Buy entry signal:
(Close[1]<Close[2]) AND (Close[1]<Open[2])



Sell entry signal:
(Close[1]>Close[2]) AND (Close[1]>Open[2])

Close[1] means previous bar's Close. Close[2] means 2nd previous bar's Close. Index in brackets means number of bars in history. Current bar is indexed as 0.

I usually require such entry signal to be confirmed by a Tolerance. Next day's price must (almost) exceed previous day's high for a buy signal or previous day's low for a sell signal:



2.1.2. Reversal

This is my variation of the WillReversal pattern that also works well.

Buy entry signal:
(Low[1]<Low[2]) AND (Low[0]<Open[1])

Sell entry signal:
(High[1]>High[2]) AND (High[0]>Open[1])

I again require such entry signal to be confirmed by a Tolerance.

2.1.3. Specialist's trap

Another tip from Larry Williams tells that it is probable that the market direction will turn

Take maximum and minimum price over previous 20-days period. If the price goes below this "range", it is called a "range breakout". Let's call the bar that made the breakout "bar B". If one of 2^{nd} – 7^{th} bars after the bar B exceeds the bar B's High, it is a Buy signal. Sell signal vice versa.

2.2. Specific variables

2.2.1. Average Volatility

It is calculated as an arithmetic mean of several previous periods (usually 20):

$$Volatility\,(\text{in pips}) = \frac{1}{n}\sum_{i=1}^{n}\left(High[i] - Low[i]\right),$$

where n = 20 (usually).

This variable is very similar to the indicator "ATR (Average True Range)".

I use a Volatility multiplier for almost every parameter of my systems, since it helps a lot to adjust the strategies to current market conditions.
(I.e. Dynamic StopLoss = 0.3 means that I calculate the average volatility in pips in the moment I want to enter a market and 0.3 * Average Volatility is my StopLoss for this position.)

2.2.2. Tolerance

By the term "Tolerance" I mean the distance from certain point (e.g. previous High) that confirms an entry or exit signal. I specify it either as an absolute value (number of pips) or relatively (multiplier of the average volatility).

2.2.3. TDW

TDW means Trade Day of Week. It may sound silly, but I use different days to enter the positions. Each strategy inclines to behave better or worse on Monday or e.g. on Wednesday. E.g. for the Reversal entry - Monday, Tuesday and Friday give the best results on GBPUSD.

One of the explanations why this works could be that the market behaves differently in the beginning/mid/end of week. I don't blindly believe, what people say. But Larry declares this concept to work well and my experience confirms it so far.

2.2.4. Trading hours

Similar to TDW, market usually behaves differently in various times during the day. That's why I specify only certain time window during the day when strategy is allowed to enter a position. 8:00 AM seems to be a reasonable time to start trading. Usually liquidity is already good at this moment, European markets have passed their opening period and trend of the market for next several hours is often established.

2.3. Exits

2.3.1. Basic StopLoss

With entering each position I specify a price, where the broker will automatically exit the position in case of not moving towards the desired direction. It is called Stop Loss. If this happens, the position ends up with a small loss, equal to at maximum the amount set as the Risk level (e.g. 2% of last account balance).

2.3.2. Bailout Exit

This means to close the position when the markets open (eventually when the broker starts to accept orders) in case the position has made a profit.
Such approach helps to "smooth" the equity curve, i.e. to make the strategy more "robust".

2.3.3. Exit on Trailing StopLoss

It is possible to shift ("trail") the StopLoss level to protect the profits generated by an open position so far or at least to decrease the amount risked.
I usually shift the StopLoss certain distance below previous period's Low (long position) or above previous period's High (short position).
It is also good to trade on Daily timeframe, but shift the StopLoss on an hourly timeframe. If an exceptionally high profit is generated during the day, it is safer to shift the StopLoss sooner, rather than waiting until the end of the day.
If the price hits the StopLoss, the position is closed.

I never shift my StopLoss level to the contrary of the direction of the position. (I.e down when in a long position or up when in a short position) Such acting would mean increasing risk to a higher than defined percent.

2.3.4. Profit Taking

Take Profit level works very similarly to StopLoss. The only difference is that it is set in favor of the position's direction. If the price hits the Take Profit level, the position is closed with a positive amount earned.

I usually specify the StopLoss, Trailing StopLoss and TakeProfit as a percentage of average price volatility during previous 20-50 days.

3. Risk management

There are many risks in trading and this document doesn't by far describe all of them. But risks can and must be under control if one wants to trade successfully.

The biggest risk is usually the trader him-/herself. The aspect of psychology and emotions can be mitigated by using a fully automated trading system. However even watching such system in action and a commitment to the idea that result of a single trade doesn't mean anything can be sometimes very exhausting and frustrating.

There exist also many kinds of technical risk - strarting e.g. with the internet connection stability and not ending with the fact that rules change from time to time. A good example is introducing one extra decimal place by Alpari UK from the beginning of 2009.

3.1. Position sizing

The more money I have on my account, the bigger positions I can afford to trade. But I always calculate the position size so that I am risking at maximum certain percent of the account balance. If I have less money, I trade fewer lots.

3.2. Money Management

There are different approaches to perform the money management. Generally it means the maximal amount risked on each position with regard to how much it can theoretically earn.
I use the "Equal percentage". (E.g. I calculate the number of lots to risk 2% of my account in case the basic StopLoss is hit.)

4. Trading strategies

Trading strategy is a set of rules for entries, exits, position management and money management that allows the trader to decide at any time, what to do.

Every trading strategy has many losses and many profits. Nothing and no one can ever exactly tell, whether the market will go up or down. However it is possible to work with the fact that there are moments, when there is an increased probability that something will or will not happen. It is important to think in the long term. This is called "statistical edge". Good trading strategy should merge several "edges" to provide decent and consistent earnings.

A good strategy should work in more markets, eventually timeframes. When I say "work", it does not necessarily mean that such strategy must be profitable on all markets and timeframes. This is simply not possible. It should work technically and behave consistently even under changing circumstances. It would take at least 500 pages to describe this topic in detail. I suggest reading the book "Trading systems that work" by Thomas Stridsman to learn more about building automated trading strategies successfully.

4.1. Volatility Breakout

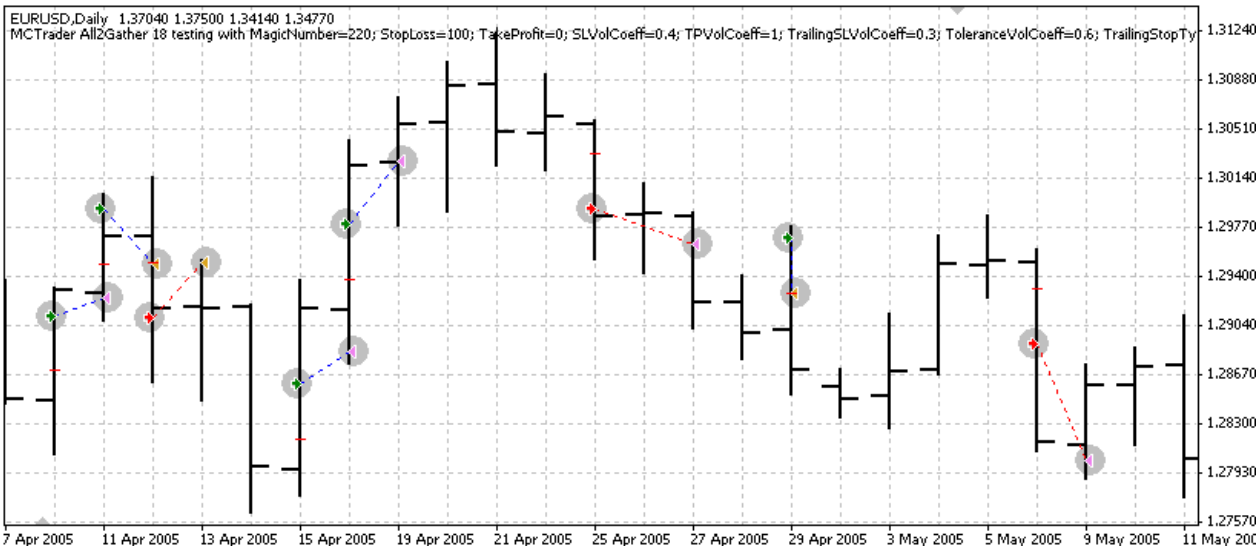
Take 50% of previous day's range (High – Low) and add it to current day's Open. If the price exceeds this level, buy. Subtract the same value from current day's Open. If the price goes below this level, sell.
Set the Stop Loss to the 50% of previous day's range (i.e. theoretically to current day's Open).
Close the position on the first profitable Open (Bailout Exit).

This strategy gives decent and consistent results on EURUSD, GBPUSD and USDCHF.

Entry signal:	Volatility Breakout pattern
StartHour:	8:00 CET
EndHour:	18:59 CET
Tolerance:	0.6 * Average Volatility
StopLoss:	0.4 * Average Volatility
Profit Taking:	none
Trailing StopLoss:	none
Periods to count Average Volatility:	50 bars
Exit signals:	Bailout at 7:05 a.m. CET
Market traded:	EURUSD
Timeframe:	D1 (daily).

It is probably the best, most robust and simplest strategy I have created and used. I can confirm many successful traders' opinion: "Simpler = better"

Example:



4.2. Reversal

Entry signal:	Reversal pattern
StartHour:	8:00 CET
EndHour:	14:59 CET
Tolerance:	-100 pips (meaning the price is quoted in 5 decimal places, e.g. currently at Alpari UK). Negative figure means the price shall almost exceed previous High in case of Buy.
StopLoss:	0.3 * Average Volatility
Profit Taking:	3 * Average Volatility
Trailing StopLoss:	100 pips under previous day's Low or above previous day's High
Periods to count Average Volatility:	20 bars
Exit signals:	Bailout at 7 a.m. CET HiLo (closing long position if today's price goes below yesterday's low; closing short position if today's price goes above yesterday's high)
Market traded:	GBPUSD
Timeframe:	D1 (daily).

4.3. SPTrap

Entry signal:	Specialist's Trap pattern
StartHour:	8:00 CET
EndHour:	18:59 CET
Tolerance:	0.5 * Average Volatility
StopLoss:	0.5 * Average Volatility
Profit Taking:	3 * Average Volatility
Trailing StopLoss:	0.5 * Average Volatility under previous day's Low or above previous day's High
Periods to count Average Volatility:	20 bars
Exit signal:	Bailout at 7 a.m. CET
Market traded:	EURUSD
Timeframe:	D1 (daily).

4.4. RangeBreakout (HiLo)

Entry signal:	RangeBreakout pattern
StartHour:	8:00 CET
EndHour:	16:59 CET
Tolerance:	300 pips
StopLoss:	2 * Average Volatility
Profit Taking:	10 * Average Volatility
Trailing StopLoss:	100 pips under previous hour's Low or above previous hour's High
Periods to count Average Volatility:	30 bars
Exit signal:	none (i.e. just basic StopLoss, trailed StopLoss or ProfitTaking)
Market traded:	EURUSD
Timeframe:	H1 (hourly).

5. Trading System

Trading system is a set (or portfolio) of trading strategies. Such combination of trading strategies should create another statistical edge. A good approach is to choose strategies with negatively correlated results. Well combined portfolio should not bring only an accumulated performance of particular trading strategies, but it should also lead to a smoother equity curve. (When one strategy is losing, another one will be probably earning.)

6. Automated trading

6.1. MetaTrader

MetaTrader is a trading platform allowing creating, backtesting and executing fully automated trading strategies. It is used by many Forex and CFD brokers and traders.
Please make sure you use a correct version provided by your broker. Brokers also provide slightly different datafeeds.

6.2. Broker Alpari UK

My broker is Alpari UK. (There are also Alpari Russia and Alpari USA, but those are different companies.)
The reason I chose this broker was that they provide historical data from mid 2004 to be downloaded from their website for backtesting. I didn't find any other broker, who would give such data for free.

One could say that the historical data are automatically loaded when a chart is opened in the platform. But this is not enough. MetaTrader needs a full history of 1-minute data – and the automatic backfill contains just a very limited period of 1M data.

Alpari UK recently introduced one more decimal place in the quotes than it is usual.
It required some parameters to be adjusted. It led me to a conclusion that I must avoid "hardcoding" as much as possible. Variables should be expressed as a relative values. (I.e. when I set a StopLoss level, I calculate the average market volatility in recent period and set the StopLoss as a percentage of this figure). Of course it is not a dogma; absolute values can be used if it makes sense to prefer them.

7. Trading system testing

7.1. Backtesting

When creating a trading system it is necessary to test its performance on historical data. Manual backtesting is a very time-consuming task. MetaTrader contains a component “Strategy Tester”, which allows running the tests of the automatic strategies.

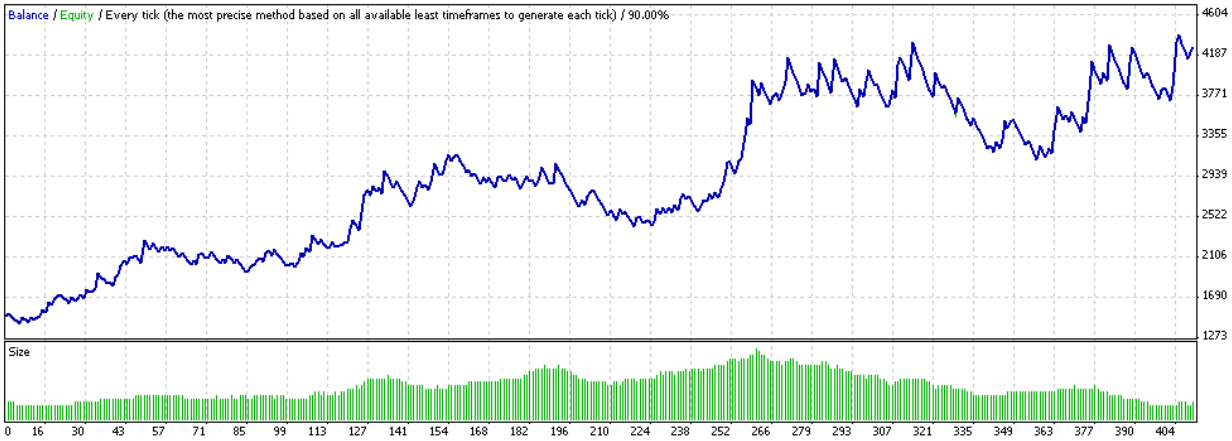
There is a limitation in MetaTrader: correct testing on any timeframe requires M1 (minute timeframe) data.

I download the data from Alpari website, import them into MetaTrader and convert them to all timeframes using the script PeriodConverter. The exact steps are described (in Czech) here:
http://www.financnik.cz/wiki/mtbacktest

Outputs from the Metatrader backtester have of course only limited information value. They can never replace a proper scientific research and education, which must be done separately as a precondition for building a successful trading system.

7.2. Balance/Equity Curve

Gains and losses in time create an equity curve. I am trying to reach rather smoother curve, while earning money.



7.3. Forward-testing

Forward-testing is moreless the same as backtesting, but on an independent data set.
It is a verification of backtested strategy. Usually this test does not give as good results as the backtest, yet it is much closer to reality.

7.4. Strategy overfitting

It is quite easy to create a strategy, which is very and consistently profitable during the backtest. But reality is usually very different.
The reason is an "overfitting" of the strategy to historical events. Therefore the backtesting results must be validated on an independent and enough large data set. I admit it can be quite tricky, as long as you "spoil" the independency of the testing data set once you have performed a test on it.

As another prevention of overfitting the strategy should be proven in the long-term (i.e. I am trying to implement simple principles that have been working for decades. If Larry Williams wrote in 1985 that the rules will work in 2005, I can confirm he was right. His rules will work for as long as there will be free market conditions.)

Strategy should be as simple as possible (Volatility Breakout in comparison with my other strategies confirms it). The more "rules" implemented, the lower chance the strategy will remain profitable in the long-term.

Every strategy has earning periods and losing periods. Trader should not try creating an equity curve straight as a ruler, but rather combine different strategies and risk less to feel comfortable even during the losing periods.

8. Real results

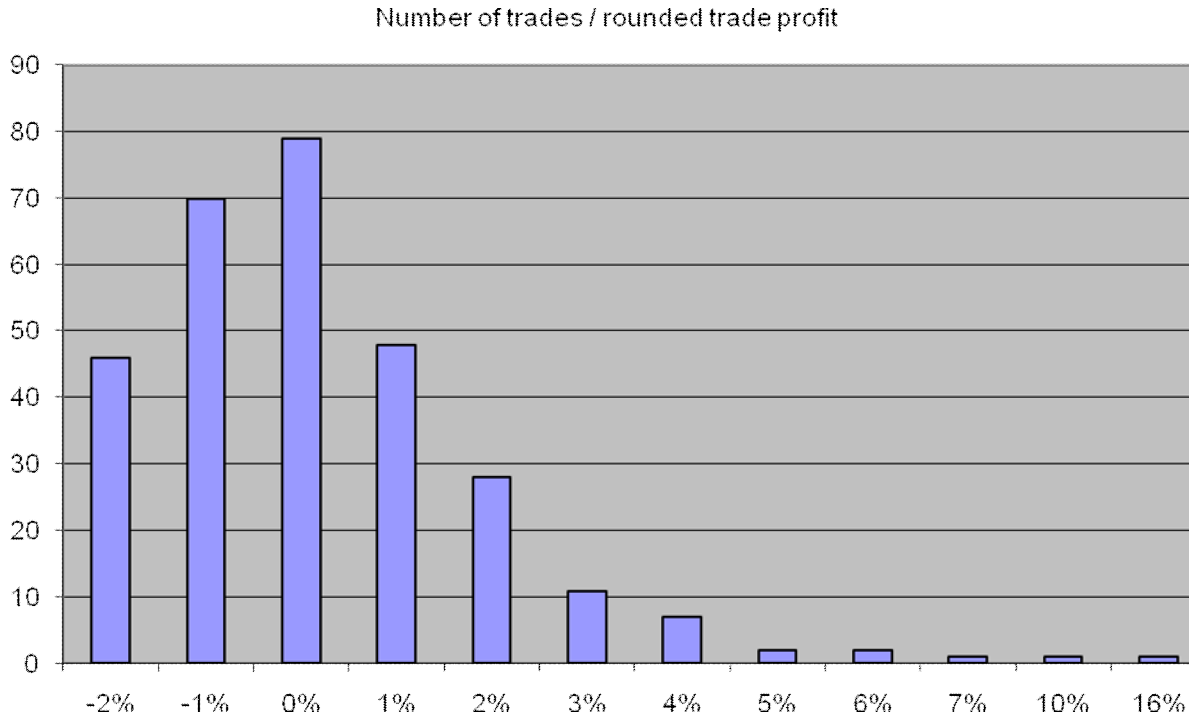
8.1. Overall system performance

This is the performance of the All2Gather system in real market conditions after about 1.5 years of live trading:

Gross Profit:	**1 444.36**	**Gross Loss:**	**1 082.17**	**Total Net Profit:**	**362.19**
Profit Factor:	**1.33**	**Expected Payoff:**	**1.22**		
Absolute Drawdown:	**8.87**	**Maximal Drawdown:**	**90.56 (9.94%)**	**Relative Drawdown:**	**12.60% (86.53)**
Total Trades:	**298**	**Short Positions (won %):**	**150 (44.00%)**	**Long Positions (won %):**	**148 (48.65%)**
		Profit Trades (% of total):	**138 (46.31%)**	**Loss trades (% of total):**	**160 (53.69%)**
Largest		**profit trade:**	**81.26**	**loss trade:**	**-17.91**
Average		**profit trade:**	**10.47**	**loss trade:**	**-6.76**
Maximum		**consecutive wins ($):**	**6 (88.33)**	**consecutive losses ($):**	**7 (-87.14)**
Maximal		**consecutive profit (count):**	**166.14 (5)**	**consecutive loss (count):**	**-87.14 (7)**
Average		**consecutive wins:**	**2**	**consecutive losses:**	**2**

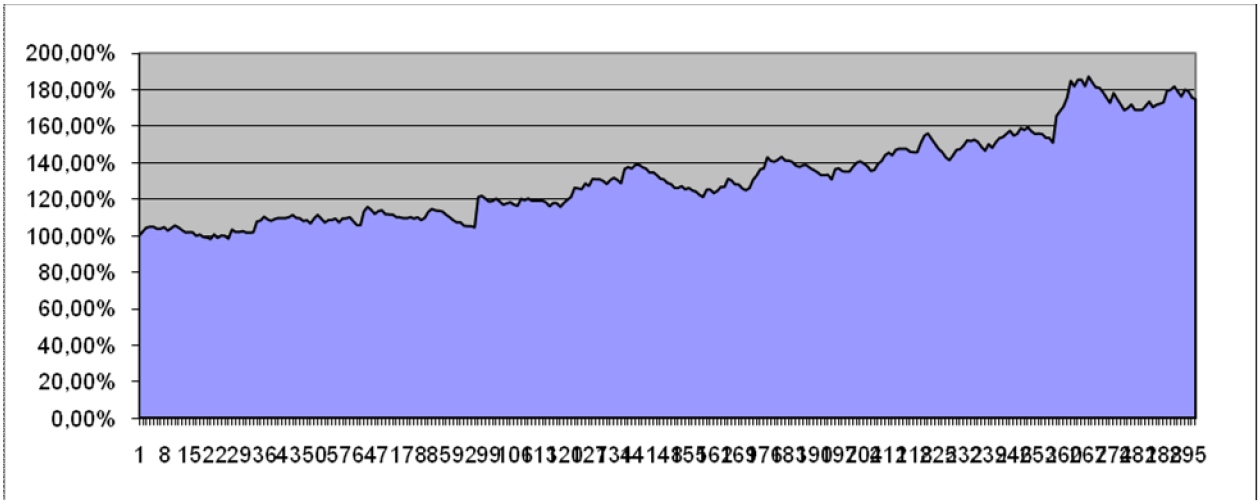
You can notice that most of the trades are losers. But the average profit trade is much higher than the average losing trade. In connection with a good risk and money management the system brings positive and consistent results. Risk level has been set to max. 2% of the trading account balance per position.

8.2. Distribution of profits and losses

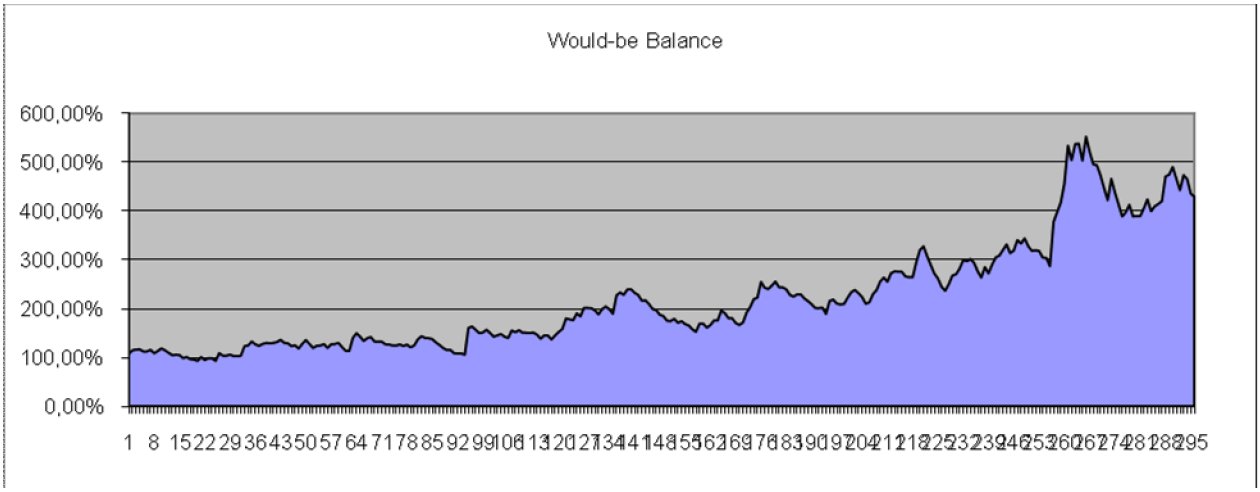


8.3. Risk management study

Performance with risk 2%:



The same set of trades with hypothetical risk 6.5%:



9. Next steps and ideas in progress

I see a big potential in using Fuzzy Logic, Case Based Reasoning as a part of my strategies, as well as in Data Mining (Logistic regression showed already some good results) or Markovian Chains.

Bringing up these new principles should go in hand with simplifying the trading rules and strategies dependent on fewer parameters.

10. References

www.financnik.cz
Williams, Larry: Long-Term Secrets To Short-Term Trading
Stridsman, Thomas: Trading systems that work
Faith, Curtis M.: Way of the turtle