An Introduction to Automated Trading

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The best of my blog (http://fxreviews.blogspot.com) in an easy to read ebook format :o)

Contents

1 Introduction - What This Ebook is All About **5**

2 Sharing This Ebook **5**

3 Truths You Should Know. Realities About Automated Trading. **6**
- 3.1 You Say Profit... I Say Draw Down 6
- 3.2 Can You Trade Automated Trading Systems Successfully ? 7
- 3.3 Ten Reasons why People Fail to Live From Automated Trading . . 9
- 3.4 The Three Commandments of the Successful Forex System Trader 12
- 3.5 Trading Reality and Automated Trading : Realistic Profit Expectations, Looking at the Barclay Currency Traders Index 15
- 3.6 Protecting Your Account Against Inflation - A Concern For Long Term Forex Investors 17
- 3.7 The Ability To Make Money : The True Reward of Forex Trading 19
- 3.8 Ten Reason why using Scalping systems is NOT a Good Idea . . . 21
- 3.9 Profits for Today or Profits for a Lifetime... Think Differently . . . 24
- 3.10 Deepest Pocket Wins ... Argumenting for Once and for ALL why Martingales CANNOT be traded Profitably in the Long Term . . . 26
- 3.11 Messing with an Expert Advisor... Five Reasons Why you Should NOT Intervene 27
- 3.12 The Market Fights Back : Five Ways in Which the Market Protects Itself from Massive Mechanical Exploitation 30

4 Expert Advisor Evaluation **32**
- 4.1 Trading on the Edge of the Charts...Why Visual Backtesting Does Not Work 32
- 4.2 Knowing Before Knowing, The dangers in Hindsight 33
- 4.3 Curve Fitting Trading Systems... Can it be Avoided ? 34
- 4.4 The Testing Time Problem... For How Long Should I Demo Test ? 36
- 4.5 The Trick of Tricks... Deceit by Multiple Testing 38
- 4.6 What is Accurate Data ? Talking About Simulations in Forex Trading 39
- 4.7 Unreliability of Backtesting Data... Why you should ONLY use the Alpari Downloaded Mt4 for Backtesting 41
- 4.8 Jumping to Conclusions... The Neglect of Statistical Significance . 44
- 4.9 And you say you have a strategy ? 46

4.10 Evaluating Trading Systems : Characteristics and Quality 48

5 Losing Periods and Automated Trading System Psychology 50
5.1 Getting the Right Mind Set : Distinguishing Between Expenses and Failures 50
5.2 When the Expected Draw Downs Come - Dealing With Loses When you Live from Trading 52
5.3 The Reality is, Most People are Terrible Losers... Are you a Good or a Bad Loser ? 54
5.4 Are there any Bad Market Conditions in Forex Trading ? 56
5.5 Looking at Losing Accounts - 5 Tips to Get Through Draw Down Periods 57
5.6 The Draw Down Obsession... Why Stubborn Systems are VERY Dangerous 59
5.7 Trader Psychology : Being a Loser... Knowing How to Deal with Losing Periods 61

6 Understanding Indicators 62
6.1 The indicator series... Going back to the basics ! 62
6.2 The Indicator Series... The Moving Averages 63
6.3 The Indicators Series : The MACD, the Market's Speedometer . . 66
6.4 The Indicator Series : The Momentum Indicator 68
6.5 The Indicator Series : The ADX, beyond a trend/range filter . . . 70
6.6 The Indicator Series... The Stochastic Oscillator 72
6.7 Indicator Series : The Fractal Indicator 74
6.8 The Indicator Series : Understanding Bollinger Bands 75

7 Trading System Design 78
7.1 Looking at the Future Through the Past : The Key to Successful Entry Logic Design 78
7.2 Five Common Mistakes in System Optimization 80
7.3 Making Automated Trading Systems - 6 Tips for Successful System Design 82
7.4 Steps to Design a Likely Long Term Profitable Trading System . . 85
7.5 Mathematical Expectancy of Entries... A Basic Powerful Concept in System Design and Development 88
7.6 Reversing Strategies... It Almost Never Works ! 90
7.7 The Truth is... There is No Insider Secret 91

7.8 Intelligent Trading : Answering Every "What if" 93

8 Where can I Learn More ? 95

9 Finally... 95

1 Introduction - What This Ebook is All About

One day after analyzing my web site's traffic I realized that most people were not reading what I considered to be the best and most informative pieces of writing in my blog. As an experienced trader in the area of automated trading I knew that many people could benefit from this knowledge and it seemed a little bit like a waste that it was sitting there -hard to find and forgotten- within my web site's archives. Then I had the idea to write a free ebook so that people could take advantage of all this information in a direct, straightforward manner without having to roam the files and categories of my website in the search for the article they wanted to get.

The objectives of this ebook are several but the most important one is to share with all of you part of my experience and knowledge pertaining to automated trading. Those of you who have some experience on the field may realize that this is a very unethical and dishonest business in which everybody seems to be selling the latest perfect robot that will let you achieve your dreams of financial freedom with very little effort. My ebook seeks to show you the articles I have written that destroy this myths, tell you the truth about trading (through my experience) and shows you that this is in fact a great way to make money if you are willing to make the effort and achieve the level of understanding needed.

My ebook wants to let you know some of the basic truths of this business as well as some of the tips I would have wanted to hear when I was new to this business. Through the articles compiled within this ebook I will talk about truth in the forex market, handling losing periods, designing trading systems, etc. All the articles within this free ebook are available within my blog (http://fxreviews.blogspot.com) and they have been compiled on this pdf as a way to provide you both easy access and an easier way to print and read the contents in a much more user-friendly format.

2 Sharing This Ebook

This ebook is absolutely free and I encourage you to share it with as many people as you want on as many places as you want. As long as you keep the contents of this ebook intact you are welcome to send it to whomever you want and to post it on any forum you want. One of the most important objectives of this ebook

is to make people aware of some important truths in automated trading and to save people a lot of money they would spend on strategies that don't work and hopeless systems that are just designed to fail. If you find this ebook interesting and you want others to understand and learn the same things you did when you went through it, feel free to share it. As I said before, as long as you don't modify the pdf I have no problem with the publishing of this material on other websites, forums, etc. **However it is worth mentioning that you should share ALL the pdf, partial sharing of the material is NOT allowed**.

3 Truths You Should Know. Realities About Automated Trading.

3.1 You Say Profit... I Say Draw Down

Every time I read a forum thread that attempts to evaluate expert advisors, an expert advisor reviewer website or an EA seller website I realize that most people put the wrong focus in the testing of expert advisors. Today I will focus on a very typical mistake people make when looking at trading strategies and how this wrong focus can translate into loses in the world of foreign exchange automated trading.

Image you enter an EA seller website or a regular expert advisor reviewer website, then you look at an expert advisor, what is the first thing they tell you ? Without a doubt, the first thing most people analyze about a trading system and how most people evaluate these strategies is through the amount of profit they make in a given amount of time. In fact, the majority of expert advisor selling websites just focus on this aspect of trading.

I have always found this to be a totally wrong approach to the evaluation of trading systems. Why is that ? Because I certainly don't care that much about profit because profit is a secondary aspect for me in trading, the most important aspect in trading for me is capital safety. That's right. Many experienced traders and fund managers will agree with me in that the most important characteristic of a trading strategy is how good care it takes of your capital. I would never trade a strategy that made 50% in one month and then wiped my account 8 months later, I am not interested in taking very high risks in order to achieve high profits. As I

have said, the most important thing for me is capital preservation and how the EA can trade in a conservative fashion.

So what is wrong with focusing on the profits ? Everything ! The problem is that when you focus on the profits you ignore the chance the automated trading system you are trading has of wiping your account or leaving you in a very bad, deep draw down. What happens then ? Many people trade expert advisors in the hope that they will get amazing profit returns when in reality these profit levels are tied to insanely high risks through unlimited or very high market exposures.

My advice is very simple. When you are examining a trading system you should know the maximum draw down level it has an the mechanisms it uses to limit its market exposure (more on this on my ebook). That is why you will see that I often put much more focus on the reduction of draw down levels and the control of market exposure through dynamic money management systems than I do in developing a system that can turn 500 USD into one million dollars.

The question expert advisor creators and reviewers have to ask themselves should be reversed. It should not be, can the expert make X money ? It should be, how much money can the expert make with an X maximum draw down ? Of course, the estimation of the maximum draw down level of a strategy must be inferred through extensive reliable historical testing validated by live trading results.

3.2 Can You Trade Automated Trading Systems Successfully ?

I have always thought that the way automated trading systems are portrayed to the general public is absolutely wrong. You buy a system that works, you plug it in, you see the profits roll in. Truth be told, nothing could be so far away from the truth. Although I go into much greater depth about this topic on my ebook, I wanted to write a post today about what I think are the necessary characteristics a person needs to succeed in the world of forex automated trading and automated trading in general.

To start I wanted to tell you something you will probably find very contradictory : Not everyone can be successful in automated trading. Of course, you may think I am totally wrong because you just need a profitable system, a person to plug it in and then the system does all the work, right ? Well, it is definitely not

that simple. First of all, automated trading is not free from psychological effects as it is usually portrayed by most EA sellers (more on this within my ebook) and second, a person not only needs to have a profitable trading system, the person needs to know it is profitable and the person needs to be able to trade it. As I have said before many times, the market protects itself from everyone making profit from automated trading by making long term profitable automated systems extremely hard to trade, as the turtle trading systems, most people would never trade the long term profitable systems even if they were given to them for free.

So what characteristics does a person need to succeed in automated trading ? From my experience and the characteristics I have seen on the people who have managed to trade these systems consistently, I could tell you at least the things they have in common :

- They are willing to learn. This means that they are able to grasp new concepts, take in and find new knowledge.
- They are willing to accept reality. They are all glad to forget the unrealistic profit targets offered by most EA sellers out there and make peace with what is realistically achievable with automated trading solutions. The more you cling to the huge (50,100 even 1000%) monthly returns offered by EA sellers the more time it will take you to be profitable with automated trading.
- They do the work. These people are looking to become dedicated to automated trading, they are not looking for a "set and forget ATM" or some other get rich quick scheme. These people take automated trading as if it was a job.
- They are not stubborn. This is a very bad quality, specially because most stubborn people end up paying for their unwillingness to learn by losing large amounts of equity. They are too ways to learn, listen to the people who know or learn it the hard way, sadly most people have to learn things the hard way and few of them survive it.
- They do not have huge egos. I have found that people who feel that a 3 month losing period makes them feel like failures tend to fail in automated trading. People who are able to accept that loses are common and necessary in trading always have the fastest way towards profitable automated trading.

Being stubborn and having a huge ego is definitely the worst combination since these people (as I have seen) are usually very attached to unrealistic profit targets and are always in the quest for a holy grail. Sadly, these people often lose the largest amounts of money and many of them end up quitting when they realize that what they had been searching for was just a mirage in the middle of the desert.

3.3 Ten Reasons why People Fail to Live From Automated Trading

I think that it is incredible that several years after the beginning of automated trading systems (meaning metatrader 4 commercial systems) and the large number of promises of wealth and richness made I know no one who has been able to make a living from any of these automated trading systems. Because I do earn my income from automated trading (most of it) I feel that I can shine a little light into the reasons why traders have systematically failed to reach this point and why the current approach most people have to automated trading will not yield them a stable income in the long term. Within this post I am going to write the biggest 10 reasons why I think traders have failed to live from automated trading systems, even though the systems have been available for years.

Reason One. **Ignorance**. Put simply, most people do not know what they are doing. People try to profit from automated trading without knowing how to trade or understand the market. There is a failure to understand which trading tactics are sound and which tactics are dangerous and which systems will eventually bring accounts to wipe-outs. This is the largest reason why people fail to live from automated trading and it is the cause of many of the other reasons I will outline in the following paragraphs.

Reason Two. Excessive Risk. New traders tend to want quick riches from automated trading and this usually comes in the form of excessive risk. You will see that when people see some profitable settings on an expert advisor or they make some unrealistic dreamy calculations using compound interest they are prone to increase the risk of the trading systems used. They do this without any understanding of the trading system's inherent risk or its potential draw down, something which eventually leads to account wipe outs.

Reason Three. **Lack of Confidence**. This is a consequence of the first reason and it is directly tied to the fact that people want to get rich by using someone else's system without any understanding of how it works. Knowing how a system truly functions is vital for success since knowing the expert's inner mechanism allows us to know what market conditions are good and which market conditions are bad. Understanding allows us to have a real grasp of the reasons behind the profit/draw down cycles our trading system goes through, a MUST if you want to be successful in automated trading. Many people believe that understanding is an option and that they can blindly trade something which they don't understand. In the end, they will fail because they will NOT have confidence in their trading system. I have seen this far too many times.

Reason Four. Expecting a Paycheck. Many new comers to the realm of automated trading dream of replacing their current 9 to 5 job with an automated trading "cash machine". They quickly get disappointed when they realize that forex is not a risk-free enterprise and that a constant monthly income is almost impossible. There are draw down and profitable months and on most long term profitable systems the profitable months which make 50-100% of the yearly profit may be few and far between while losing months will be fairly common. Expecting a paycheck every month is not realistic, since the market is not always willing to allow you to profit. Definitely understanding the nature of trading and the nature of how profits are generated is vital for success.

Reason Five. Using Unsound Trading Tactics. This is mainly another consequence of reason one. The complete lack of understanding many people have about the market and forex trading systems makes them use unsound trading tactics which are bound to get their accounts wiped. Many people resort to systems which use tactics such as martingale or grid trading with the hopes of generating a higher return when in reality the only thing they are generating is an uncapped market exposure.

Reason Six. Lack of Risk Analysis. This reason is in line with the second and explains why so many people get their accounts wiped out. People fail to correctly analyze the risk levels of the trading systems they are using. More over, new traders usually calculate risk over invalid evidence (such as expert advisors which are NOT back/live testing consistent) and also assume that the historically maximum draw down is the worst possible case. In trading we always must assume that the worse is YET to come and we have to set our risk level accordingly.

Capital preservation is one of the most important aspects of trading.

Reason Seven. Underestimating Live Execution. This is a very big point and a problem which many new traders face. This point is particularly strong for people which want to use scalping systems profitably. They often trade these systems in demo or backtest them with excellent results (note that backtesting is bound to be very unreliable due to one minute interpolation errors) and then they realize in live trading that the number of profitable trades or the profitability of most trades is greatly reduced by spread widening, re-quotes, etc.

Reason Eight. Focus on Short Term Results. It is a sad thing that most people who enter automated trading focus on short term results. This is the reason why people go through endless cycles of testing and reviewing only to find that in the end they are left with nothing. There is a very big focus on short term profitability (a few months or even less time for results) while the big focus should be on LONG term trading and profitability. Traders will get excited with a system that has been profitable for a few months only to run it and wipe their accounts in the long run. They will also dump good systems that go through normal draw down cycles due to the lack of risk analysis. It is a self-reinforcing cycle that ends with people being poorer and EA sellers being richer.

Reason Nine. Long Term Profitable Systems are VERY Hard to Trade. I have always thought that this is one of the most important reasons why people fail to live from automated trading. The truth is that all the systems I know which have long term profitability in mind are very hard to trade. They have long draw down cycles and extensive periods of consecutive loses which make new traders fail psychologically. People generally lack the understanding, knowledge and confidence to use these systems successfully and this makes them resort to strategies which are bound NOT to be long term profitable like scalping trading systems (as I have said on a few posts, the creation of a long term profitable scalping system is highly unlikely due to the variation of the nature of short term movements along different market conditions, added to the difficulty in proving long term profitability due to inherent errors in backtesting when using short TP values) , martingales and grid trading systems which will only end with their accounts being wiped out.

Reason Ten. Lack of Capital. This is another chief reason why people fail to make a living from automated trading. You will often see people wanting to go from 100 USD to a 10,000 USD per month income in just a few months. This

is outright impossible. Most people fail to realize that they need large amounts of money invested to be able to live from automated trading and those who invest large amounts tend to lose them due to all the above reasons. It is important to know the capital requirements for a certain average yearly income and then have realistic profit and risk targets.

So as you see, it is not surprising that I have met no one who lives from a commercial expert advisor. It is very hard to expect anything else when you have people trading systems they do not understand, underestimating risks, using under-capitalized accounts and unsound trading tactics. However the fact is that most of these things are likely to remain that way because they appeal to the marketing area. Traders will continue to use short term profitable systems which wipe their accounts in the long run with no real understanding of their trading logic or their potential for success.

My hope with this blog is that some people will see that using a black box is not the answer and that true success in automated trading comes from hard work and understanding, not from mindlessly testing everything that comes out of the market in the hopes that something will be that "holy grail"

3.4 The Three Commandments of the Successful Forex System Trader

Very often people will ask me what is needed to achieve some success in automated trading. I get asked if it is actually possible to live "making money while you sleep" and to exploit market inefficiencies as the market changes. Often people I explain my line of work to are extremely skeptical. For example a person I met a few weeks ago at my sister's wedding asked how this was possible and that if this was possible, why isn't everyone making a profit from the forex market. Oh well, it certainly is useful when you talk to people who have absolutely nothing to do with trading - as a matter of fact - I had not found myself in such a difficult position to explain something for quite a bit of time. In the end, I told her that - in analogy with getting to heaven and the ten commandments - people do not succeed with the use of automated trading systems because they do not follow some very simple principles. I explained to her that there are simple rules that need to be followed when you trade these systems and that deviations - even if only small - can end up making a person fail to achieve the ultimate goal of long

term profitability in automated trading.

On today's post I want to talk to you about these "three commandments" I explained to her and why each one of these simple rules is absolutely vital to get success in trading, specifically with mechanical trading systems. Of course, some of you may disagree and some of you may agree but in the end these are the rules I have found to work for me and what I believe "raises the bar" so that only a few traders are able to get to this point. Evidently I have not been enjoying this position for decades and therefore I am still tempted and strive to stay with my "three commandments of the mechanical system trader", hopefully following these three seemingly simple - yet very complex rules - will keep me in my way towards a few decades of forex automated trading profitability :o). Do you want to know more about these rules and whether or not they apply to your current situation ? Keep reading to find out !

1. You shall understand what you are doing. Perhaps this eliminates most of the people out there who are currently wanting to become profitable in the long term using these systems. Understanding is a vital part of success and achieving a profitable position in automated trading will simply not be possible - from what I have seen and experienced - if you do not perfectly understand everything you are doing, the systems you are using and how automated trading works. Understanding needs to be deep and should NOT be merely superficial. Understanding should cover deep knowledge about your system's logic, the inefficiency exploited, etc. If you have not gone through at least a few years worth of trades of the system you are trading in a trade by trade basis doing a trade by trade in-depth analysis then you still need to go a long way before you can consider that you truly know what you are trading. In the end, any effort you won't do is an effort somebody else will make and that someone will take your place as a profitable mechanical trader. So if you want to avoid efforts, this is not the place to be.

2. You shall know what to expect. After knowing what you are doing comes to know what you should expect. Traders who are successful using automated trading systems know exactly what to expect from their systems, they know all the characteristics of the systems they trade and precisely what their predicted draw down and profit periods are like. People who understand their automated trading systems and analyze them extensively know the accuracy of their simulations, the length of profit and draw down periods and all other characteristics of systems. Again - as with understanding - we are not talking about a superficial

understanding of what to expect. Anything that happens with your system that you do not take into account within your plan will make you unsuccessful so you have to be prepared for every possible case. What if your system reaches a draw down deeper than the simulations ? what if the system has double the number of predicted consecutive loses ? You should know what the meaning of these events are related to your system's performance.

3. You shall evaluate your systems. The last commandment of the successful mechanical trader is to evaluate. You cannot be successful if you trade a system with blind faith - because every system can fail - and continuously evaluating the performance of your trading system and the current market conditions is of incredible importance to achieve success. Knowing when a worst-case scenario will be reached, if the current draw down cycle is too long, if the system is now too risky to be traded, etc is one of the most important aspects of successful mechanical trading.

For people who read this blog who are also Asirikuy members the three above mentioned commandments may have sounded very familiar as I refer to them continuously within the Asirikuy website videos as the Asirikuy mantra : understand, expect and evaluate. From my experience these three simple things are the only actual skills you need to be a successful system trader. You simply need to understand, know what to expect and evaluate performance.

Of course, easier said than done :o) Maybe the first point seems to be the hardest - and it probably is- but the second and third are NOT any easier. Knowing what to expect from a system requires extensive analysis and it requires you to have a very clear understanding about the role and limitations of simulations and the whole way in which the system changes as market conditions start to develop, not to mention a deep understanding of system cycles, their extent and composition. Evaluating is also not very easy to do since it requires the confidence to run your system on live accounts and to weather the profit and draw down cycles trusting your expectancy analysis to be right.

My advice for you is therefore extremely simple. If you want to be successful in automated trading, follow the above three rules and I can guarantee that you will - at least- get to the point where I am today :o).

3.5 Trading Reality and Automated Trading : Realistic Profit Expectations, Looking at the Barclay Currency Traders Index

A while ago I received a very interesting email from an Asirikuy member pointing me to a database showing the past 20 years of performance of top forex traders and funds (the data was originally discussed in this article). Although I had seen the indexed performance of several currency traders before this is the first time in which I had found this data in such an organized and reliable fashion, put together by Barclay Hedge. The Barclay Currency trader index,- in their own words- contains "An equal weighted composite of managed programs that trade currency futures and/or cash forwards in the inter bank market. In 2010 there are 119 currency programs included in the index". To sum it up, the Barclay Currency trader index gives you a snapshot at what the professionals in the field are achieving showing you exactly what profit expectations are more realistic and which ones are to be considered completely delusional. On today's post I want to write a little bit about this data to get those of you who are unaware of what the "industry standard" is, a better perspective of what is and what is not realistically achievable in currency trading.

In the world of currency trading - and particularly in automated trading - people are often pointed out that it is "very easy" to achieve huge amounts of profit in the forex market. Moreover, real live results that show you increases of 100-1000% in a few months are not uncommon in the forex market and they appear to show new traders that you can actually make a small fortune quickly from a small investment in currency trading. However new traders often have absolutely no idea of what the industry professionals are achieving or what hedge funds that deal with currency instruments actually get and therefore they often believe the paid actors that pose as traders on automated trading sales sites saying that they have earned millions in currency trading in a few months.

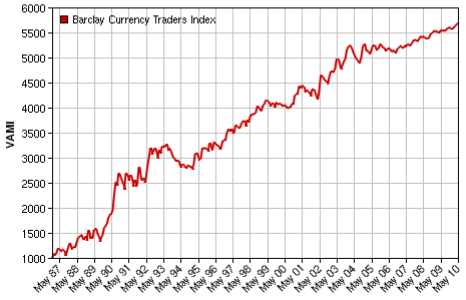
The fact is that huge returns are possible with a huge market exposure and the problem with a huge market exposure is that it causes huge wipe outs of capital as the market evolves. So this is analogous to a person who wins the lottery. You get a huge amount of return in one run but if you spent all your lottery money in tickets, you would hardly ever win again or if you do, keeping on doing this will eventually wipe you clean. The market - I believe - has a self-limiting character

which makes the systematic exploitation of market inefficiencies to achieve huge profits impossible due to the fact that huge profits require huge exposures, and huge exposures - lead to wipe outs.

The golden question is then what is realistically possible ? Since there is no way in which the "top" possible average profitability can be inferred the best measurement we have of what can be systematically achieved is what the average people in the field are actually doing and have been doing for a long time. I have to stress here that the "long time" part here is very important since long periods of time imply robustness and statistical significance. Anyone can triple an account in 2 months, but doing it for 20 years is something very different. When you have been trading for a long amount of time it means that you have very sound risk and money management tools that guarantee your long term success by limiting your present market exposure.

1980	-	**1990**	57.74%	**2000**	4.45%
1981	-	**1991**	10.94%	**2001**	2.71%
1982	-	**1992**	10.27%	**2002**	6.29%
1983	-	**1993**	-3.33%	**2003**	11.08%
1984	-	**1994**	-5.96%	**2004**	2.36%
1985	-	**1995**	11.49%	**2005**	-1.21%
1986	-	**1996**	6.69%	**2006**	-0.12%
1987	29.56%	**1997**	11.35%	**2007**	2.59%
1988	4.28%	**1998**	5.71%	**2008**	3.50%
1989	18.89%	**1999**	3.12%	**2009**	0.91%

†Estimated YTD performance for 2010 calculated with reported data as of June-11-2010 08:05 US CST



If you check the Barclay Currency Traders Index you will see that the average compounded yearly returns are not to die for. Currency traders average a 7.71% compounded annual return with a worst draw down of 15.26%, certainly traders are in average conservative. However looking at all the profit and draw down figures of the particular traders you will see that average compounded returns and maximum draw down figures are often in a 1:2 to 2:1 ratio, meaning that the average yearly return is actually never better than twice the maximum draw down. If you are thinking that these figures don't apply to you because these traders

don’t have the "flexibility" of small account holders, you are wrong. Many of these traders are NOT trading billions and many of them have access to liquidity you would only dream of so if anything trading conditions for most of these guys are only better than for the average forex trader.

A very important thing about this index is also that it shows that diversification is the key to long term success with the sum of all traders giving a very smooth equity curve over a 20 year long period. So probably a good lesson to learn here is that using several strategies that are all long term profitable will probably help us reduce draw downs as it helps the Barclay Currency Traders Index smooth its performance. As we have seen with the Atinalla project, having a large amount of diversification is very beneficial in the long term for trading strategies.

However the most important thing about these profit and draw down figures is that they show us the true face of market exposure and what you can expect to be realistic. If in the best case your maximum draw down level is likely going to be around one half your average compounded yearly profit then a monthly 100-200% return or a 100% yearly return for that matter are unrealistic or excessively risky for any sound investor. In the end, this currency trader index tells us that for moderate risks, forex investors should aim for a yearly profit of 20-30% if their risk appetite is moderate.

Currently our Atinalla No.1 portfolio would hold a place near the top of the Barclay Index and for this reason I would be tempted to say that it is very profitable. However we must consider here that the portfolio has not been run for 20 years on a live account and only time will tell us what its real profit and draw down targets are. Nonetheless the most important thing about Atinalla project portfolios is that they are traded with a very good profit expectation and a VERY clear worst case equity-loss scenario in mind, which is 36% for the Atinalla No.1 Portfolio.

3.6 Protecting Your Account Against Inflation - A Concern For Long Term Forex Investors

Of course, when you hold a large amount of money in any currency that is not subject to any fixed interest you will tend to lose a part of your investment as the intrinsic value of the currency changes inevitably towards a lower value over time. Currencies are all going to eventually lose value mainly because countries need

to have more currency available but don't have the necessary wealth to backup all the currency's value, this leads to a depreciation of the currency and an increase in the value of goods and services acquired with it. On today's post I will be talking about inflation and about how we can trade the forex markets in the long term with hedges against this ever-growing monster.

Generally speaking, inflation is simply the decrease of value of a currency over time caused by a wide variety of factors. These causes include government spending (printing money), large injections of capital from other sources (like it happened with Colombia in the 90's in which inflation reached 18% due to drug dealing contributing at some point 20% of the GDP), etc. Inflation is simply the result of a currency being less valuable because there is more money and less wealth to back it up. – This is actually not bad and healthy economies maintain a certain degree of positive inflation which usually oscillates between 1-3% each year. Having deflation - which is the opposite effect - usually happens during or after a recession where most people are simply not spending any money and therefore the intrinsic value of the currency increases. Lack of spending means lack of liquidity and movement and these of course means lack of business, jobs, etc.

The problem of course comes when you realize that if you hold a certain currency you will be losing X% of the currency's intrinsic value each year over time. So if you purchased a car today for 20K USD, in 20 years this purchase could well be 30K or more. Effectively inflation has the potential to wipe out a substantial amount of your forex gains depending on the amount of money you make and the currencies you hold so hedging against inflation is something most people who hold long term investments in currencies do.

How can you hedge against this problem ? The easiest way to do so is to buy a commodity which has a "non-variable intrinsic value" and hold it for the same time in which you hold your currencies. Of these commodities - the most popular - is gold. Since currencies lose value, they are bound to depreciate against gold with time as gold will inevitably gain value as the purchasing power needed to get it becomes bigger. So the best thing is to get a hedge of the same value as your investment with gold.

The ideal is to get a 1:1 leverage account and simply invest the same amount in gold so that wild swings in gold can never cause a wipe out. In order for this hedge

to be effective you would need to make your yearly additions equal between your currency trading and your gold account in such a way that you increase their value in a similar fashion. This means that your money- when you take it out- will have the exact same value it had when you invested it and there will be no loses due to inflation and substantial gains due to increases in gold's value (which in the end just even out inflation for the currency you used to invest). This investment could also provide you with diversification as the value of gold could be increased by a value larger than inflation due to the demand for gold - in the end - it is a good way to diversify your investments and provide a good hedge against inflationary pressure.

Of course, if you simply cannot afford to do this in the long term there is no problem. The only effect will be that inflation will affect your invested capital to a point where it may lose some value during the course of the next few decades. However, if your average yearly profit is above 20% this loss is bound to be less than 10% of your profits so in the end your forex profits can also account for inflationary loses.

3.7 The Ability To Make Money : The True Reward of Forex Trading

One of the biggest reasons why most forex traders fail to be profitable in the long term or the reason why most are unable to achieve their financial goals through trading is usually lack of capitalization. I have spoken several times about this issue and the fact that most - if not all new traders - seek to achieve financial independence with a usually very small account in the order of 5-10K or even less. The truth is certainly that this is not possible in a sustained manner over a long period of time.

Even if your needs were as low as 1K, producing 10% in average every month is most likely impossible as the self-limiting character of inefficiencies in the market would prevent this achievement for a very long time. As a matter of fact, there are no examples - to the best of my knowledge - of people who have achieved this degree of proficiency for at least 5 years with most people who speak about this profit levels being "sustainable" achieving them in small periods of time. It therefore remains true that such targets are unachievable under statistically significant periods of time (5-10 years) (if you have real evidence of an example of

someone who has achieved this please do let me know !). - - Why do the best fund managers and traders in the world earn so much money if their returns - to the beginning forex trader at least - seem so humble ? The truth is actually that making money in the market (and keeping it !) is extremely difficult and achieving proficiency that allows survival under many different market conditions is very difficult. The ability to stand through deep and extended draw down periods and the ability to have confidence in one's strategy is a vital part of achieving this hard endeavor.

This is why when you are able to achieve profitability during a statistically relevant period you can say that you have acquired one of the rarest abilities in today's modern financial world : The ability to make money. You have indeed succeeded in the use of trading strategies to exploit market inefficiencies in a sustainable fashion, something which is terribly difficult to do and absolutely valuable. Even if you did so only with a 1000 USD account, the fact that you now master this skill makes your income potential effectively limitless.

After taking this step at mastering the ability to make money it is now time to make forex trading a real business for you. If you really want to make money trading, then you cannot limit yourself to the trading of your own capital, you need to start managing other people's funds in order to increase your income potential to levels which fit your life style. With a five year verified track record there will be many people fighting for you to manage their funds and I can assure you that you will not have problems finding people willing to get the diversification and "higher than stocks" average yearly return you will be offering.

In the end you need to focus on developing your ability to make money and you need to think about trading as a business to sell this ability. Do not limit yourself to your own capital. If you truly have the skills to make money then there should be no fear in sharing this ability with others. You will explain them all the risk and your track record would also show the ups and downs of a 5 year trading period. In the end your ability will shine on its own and even if you can "only" make a 15% average yearly return, you will have literally millions of dollars lined up for your management.

3.8 Ten Reason why using Scalping systems is NOT a Good Idea

There has always been something very attractive about scalping systems for most forex traders. Profits are never given back, trades are executed and left quickly and profits seem to have the opportunity to compound frequently and with great success and returns for the trader. However, people often don't realize the true characteristics of scalping systems and specially why the existence of a long term profitable scalping system is terribly unlikely. By scalping systems I mean strategies which have very small TP or exit values (below 6 times the spread). Today I am going to dedicate this post to give you the ten chief reasons why I believe scalping systems CANNOT be successful in the long term and why you shouldn't use them as part of your long term trading portfolio.

However I want to make it clear that I do know a few traders who use scalping during their day trading quiet successfully but their strategies are methods, not systems, and they are adapted by their experience as market conditions change (note that this adaptation is not programmable due to the fact that it is extremely discretionary). They are NOT systems with strict logic-based rules which is what I will be discussing in this post. So why can't scalping systems be called long term profitable ?

Reason One. The nature of the short term movements in the market. It is true that markets do behave in a somewhat "predictable" manner in the longer time frames. Movements in the longer time frames are the consequence of fundamental reasons and they obey mass market behavior. There are tradable market inefficiencies in the longer time frames which appear to remain constant as market conditions fluctuate because mass behavior remains fairly constant. However, the nature of the short term movements does NOT obey mass behavior, a movement of a few pips on a given currency pair can happen for many reasons. There is simply no long term tradable inefficiency associated with this because it would be like predicting when someone is going to exchange a few million dollars of one currency for another. It could be an import/export payment, a bank fund transfer, etc.

Reason Two. Any inefficiency is bound to disappear. I have talked to several traders about this and those who use scalping totally agree with this statement. If you find any tradable inefficiency in the lower time frames which can be exploited mechanically, it will change simply because the nature of the transac-

tions in the lower time frames is very variable. It becomes then extremely hard to find and inefficiency which remains constant during long term periods because the transaction sin the lower time frames simply do NOT remain constant, they are ever changing and they change drastically when market conditions change. Something which does not happen with wider movements.

Reason Three. The Risk to Reward Ratio. Often you will find that scalping systems try to remedy the above by using very unfavorable risk to reward ratios. It is quiet common for scalping systems to risk a lot for a little profit with a simple streak of 5 consecutive loses wiping 2 years of profitable trades in some cases. High risk to reward is the dumb way to fix a trading strategy, you are increasing your probability to be right by increasing your risk when your wrong. When the system loses its positive mathematical expectancy -due to the reasons outlined above - the system will fail, big time.

Reason Four. Live Execution Variables. Due to the fact that scalping systems work on very small exit parameters market variables related with execution become extremely important for these trading systems. Requotes and slippage become terribly important as they may account for a very significant percentage of the profit of the trading system. For example, a trading system may seem very tradable and profitable on a demo account but live trading will reveal a lot of requotes and slippage which will remove most or even all of the profitability gained by the trading system.

Reason Five. The importance of the spread. Scalping trading systems will have a hard time when dealing with market spreads due to the fact that the spread may be a very important part of the system's profits. Since demo trading and simulations do not cover the effect of spread widening it is very likely that the profitability of a scalping trading system will be GREATLY over estimated by either forward testing on demo accounts or simulations.

Reason Six. No accurate simulations. Since scalping systems take low profits they are VERY affected by one minute interpolation errors of the metatrader backtester, add to that the fact that spread widening and live execution problems are not taken into account and you will find that simulations GREATLY underestimate draw down and overestimate profitability. Of special concern is the fact that this differences will NOT be noticeable in the short term since the winning percentage of these systems is usually high. It is common for these differences to

become apparent once the system is live traded for a long period and the number of consecutive loses or the maximum draw downs starts to be seen out of proportion. Usually this underestimation of draw down is VERY important, with real draw down being 5 or even 10 times higher than that predicted by simulations and forward testing.

Reason Seven. Profits are VERY sensitive to loses. Due to the fact that the risk to reward ratio of most scalpers is so high and the fact that demo and simulations greatly over estimate the profitability of this systems it is VERY likely that the maximum draw down will increase when live trading. In most scalping systems, if the number of consecutive loses just increases by a mere 2 or 3, the system will face a wipe out. Long term profitable systems with favorable risk to reward ratios don't suffer from these problems leaving room for underestimation of loses within simulations without significantly affecting their profitability.

Reason Eight. Broker Dependency. Scalping systems act on price variations on the lower time frames and on these time frames the differences between broker feeds are the most prominent. Just if there is a 2 second difference between the closing of candles on each broker, results are bound to be completely different. Even more, the mere fact that the bank feed of each broker is different is likely to cause very different results between them. Add to that the fact that each broker has different live execution and spread widening and you will find that the results of scalpers are rarely reproducible and extremely broker dependent.

Reason Nine. Scalpers pay a LOT of commissions. For me one of the greatest problems of frequent trading and getting a small profit is that mainly your trading system is working FOR the broker. For example, if a trading system executes 10 positions each day, you are paying the broker 10 times the spread each day, which means that the broker is getting a great cut of your profits. Even if trading frequency is reduced, the percentage of your profits which is equivalent to spreads will be great, often 10-50% of your total profitability. Trading like this has never been sound in my opinion in the sense that the payment of commissions is maximized. If you use an ECN broker for better execution, the problem only becomes bigger due to the higher cost of ECN trading.

Reason Ten. There are NO long term profitable scalpers. The chief reason why I do not use scalpers and why I sustain that all the above reasons are perfectly valid is that there is NO long term profitable scalping system. There has been no

scalping system that for the past 5 years has been able to generate profits consistently. While I have seen many scalpers come out, reach a few months or even a year or so of profitable results only to go down in flames as market conditions change or any of the above reasons appears to be true. Many people have worked on scalping systems, and yet no long term profitable system has come out. People always get excited with simulations and live trading results without taking into account ALL the above problems and this eventually leads to account wipe outs due the underestimation of loses and the use of excessive risk.

I hope that all the above reasons are convincing enough. These are the reasons why I do NOT develop scalping systems and why I don't consider them reliable systems to reach long term profitability.

3.9 Profits for Today or Profits for a Lifetime... Think Differently

It is funny how the world of automated trading works and how most people view automated trading systems. In general I have found people view automated trading systems as a "way out" a way towards quick riches, stress-free money-making and a sure-way towards a life of luxury. I believe that my vision of algorithmic trading systems has developed to stand far away from the most common approaches to expert advisors and I believe that this is the reason why it is so hard for me to communicate my train of thought to new traders. On today's post I will try to explain to you why my vision about automated trading is so different and why I think it is the most sound and reliable approach to this topic.

How do people view automated trading anyway ? I have found that people around the metrader 4 scene are rarely experienced traders. Most people around this scene are either experienced programmers or inexperienced traders with the idea that trading is a way in which they can get a lot of wealth in a very small time frame. People truly believe that they can make a huge income if they could only find that "holy grail" that will produce a lot of profit with little or no draw down through an infinite period of time. People lack any knowledge about system development, trading strategies or trading in general for that matter. This makes people stimulate the development of systems which can deliver short term results to satisfy people's immediate need for reward (as I have mentioned on previous posts on this subject).

What you get from this mess is the actual state of automated trading and retail trading. You get people looking for a trading system "that just works" and getting their accounts wiped time after time after time when the trading system which has been giving results for 6 months or a year suddenly stops working and starts to bring the account into heavy draw down. Why ? - people ask - simply because they were using a system that had no possibility of being long term profitable. People generally use systems without ever thinking : Will this system be profitable in 10 or 20 years ? Is it based on sound trading tactics and principles ?

Here is where I believe that my way of thinking is completely different. The first thing I ask myself is that exact question : Will this system be profitable in 10 or 20 years ? Is there a high like hood of this being the case ? Since this is rarely the case for commercial systems I usually get into a lot of clashes with people who strongly believe that the system they are using is profitable (because it has been giving profits for 1-12 months) but they fail to grasp the fact that there is no evidence that points to the system being profitable through the next few decades. Moreover, they ignore the logic behind the system and they don't know if such logic uses sound trading principles or if it is bound to be rendered unprofitable as time goes on. The fact is that most systems use tactics that will inevitably lead to wipe-outs in the long term.

I am a trader, who thinks like an investor. When your living expenses depend on the money you generate with your automated trading systems, it not only becomes important, but vital, to develop trading systems you can absolutely trust and work with, with the confidence that everything that could be done to prove their long term profitability has or is being done. It is a matter of changing time frames. I am thinking : Where will my systems and trading be in 20 years ? Not, how much was the system's profit in February ? What I have tried to develop through time is the only reliable approach to trading I have been able to find, the design of systems with sound trading tactics that have the highest possible chance of standing the test of time.

3.10 Deepest Pocket Wins ... Argumenting for Once and for ALL why Martingales CANNOT be traded Profitably in the Long Term

I have to say that I become a little bit irritated each time I go on line and have a conversation with someone who argues in favor of martingale trading systems or when I see an EA seller selling this wonderful martingale expert that gives a 100% monthly profit. For this reason I decided to write this post today, this post will give all the arguments, once and for ALL that clearly show why Martingale trading IS unprofitable and CANNOT be traded profitably in ANY possible way. This analysis will also apply to any type of system with a similar progressive money management scheme. Before continuing, this post is not meant to be rude or mean against people who trade Martingale systems, this is merely to show you that it is not reliable and will eventually lead to the loss of all your trading capital.

As you all know, the Martingale system, developed in the 19th century, is a trading system in which a trader will double his stake when he loses a trade resetting the count after he wins a single trade. What is the problem with this ? Well, the first problem with this is the exponential increase in risk which make the system eventually risk very large amounts of money for very small profit amounts. I will now try to argument against each one of the points put forward by people who trade martingales :

- If my account size is big enough it will not be wiped out. This is an awful mistake. Martingale systems will always wipe an account because the increase in risk is exponential while your increase in equity is liner. That is, increasing your capital from 1000 USD to 10,000 USD does not buy you 10 more losing trades, it just means 2 or 3 more losing trades. However, you will not lose 1000 you will lose 10,000 USD.

- But if my system has X maximum consecutive loses then increasing my capital by Y will make the system safe. Wrong again. The fact that your system has X consecutive loses in historical testing or live testing does not mean it cannot have more. All trading systems may face a very large number of consecutive loses. In practice, you will never be able to sustain more than 10 consecutive loses, something which is likely to occur with almost any trading system. You are playing the deepest pocket game. In gambling,

when two players are going for martingale strategies the one with the most money wins. Who has the deepest pockets, you or the market ?

- Ok, I accept that my account will eventually be wiped out, however if I withdraw my profits I will still win in the end. This is a very naive argument in favor of Martingales. If wipe outs will always happen, which is the case, the frequency in which these wipe outs happen is unknown, so for example, you may get a wipe out in a month, then one next year then 8 the year after. In the end, a series of wipe outs will remove all profits from the previous runs in which the trader was lucky.

Can money be made from Martingale trading ? Of course, and money can also be made in Vegas. When you trade a Martingale system which is statistically shown to wipe any account and eliminate any accumulated profit either through successive wipe outs of opened accounts or through the wipe out of a single account with all the profit you are simply betting on its success. Gambling is something that should not be done in trading. You know that there is a saying in trading. If you are going to gamble go to Vegas, at least the drinks are free. If you are considering or trading a Martingale take all the above points into account, they are based on sound and proved arguments.

3.11 Messing with an Expert Advisor... Five Reasons Why you Should NOT Intervene

One of the things I have found most common regarding new traders and the way in which they approach mechanical trading systems is that they are very likely to intervene with the trading of an expert advisor for a large variety of reasons. People justify intervention in many ways : "I knew the news would be positive/negative", "the market was too volatile", "I knew it would come back", etc. The truth my dear readers is that these are mere excuses which arise from insecurity and lack of confidence. There is no way in which someone can know beforehand how the market will behave and intervention is - truth be told - a non mechanical modification of a trading system's performance which may lead to very bad consequences in the long term.

Within this post I want to talk to all of you who like to "mess" with your automated trading systems to tell you the reasons why I know that intervention

with an expert advisor is almost guaranteed to be detrimental in the long term (at least with long term profitable systems). After you read this post I want you to reflect upon your trading and address the issues you have regarding the systems you are currently using so that you can truly use them successfully in the long run. So here are my top 5 reasons why you should NEVER meddle with your automated trading system.

1. If it isn't broken, don't fix it. This very simple saying applies to automated trading as it does to taking apart a perfectly good electronic device. If you have analyzed your trading system and you know it has adaptive capabilities and it can survive a different array of market conditions then why in the world are you intervening ? What you are doing is changing the overall performance of your system to something which is non-mechanical and not evaluated, you are in fact taking something good and making it something unrecognizable.

2. You cannot predict the future. If you think about it, you don't know where the market will be heading and you have less statistical justification to intervene than what your EA has to do whatever it is doing. If an EA has been profitable in months of live trading and 10 years of backtesting then it "knows" the market better than you do. Could you have taken successful trades for the past 10 years with an overall statistical advantage ? The expert advisor did and you are now trampling all over it like you have an edge it doesn't.

3. You're not thinking about the long term. The reasons you are modifying the trading system is because you fail to evaluate the big picture, you intervene on one or another trade merely because currently you are unable to handle a loss, you are desperate to capture some profit (you hate giving back), etc. You simply LACK confidence on what your mechanical system is trying to do and you are just damaging its mechanical edge by introducing "what you think is best" when actually what you are doing is taking an emotional non-mechanical decision which will be damaging to the system in the long term. This decision may seem rational to you but it is outside the mechanical rules and it should NOT be taken.

4. If improvements can be made, then code them. If you feel that there is something the EA is doing wrong then code the improvement in a mechanical fashion and see if it is translated into an overall improvement in profitability. You will find out that many of your "interventions" are detrimental in the long term. For example, some people are very uncomfortable when systems give back profit

and they quickly jump to suggest a trailing stop. Then when the trailing stop is implemented you see that overall you take more profit but you miss some profitable runs which accounted for a good portion of the system's profitability. You need to have statistically powerful reasons to introduce modifications the "I feel like it", "I think" way of modifying trading does NOT work in the long term.

5. The market's alluring short term compensation. People usually justify intervention by saying "it has worked for me in the past" and the truth is that in a long term profitable system intervention may reward you a very substantial amount of the time. So you will be happy to intervene 75% of the time or even more. However, the truth is that sooner or later your meddling will have dire consequences for the strategy. You will someday intervene and forfeit a profitable trade which accounted for a large amount of the yearly gains, etc. I can guarantee that you will regret intervention in the long term.

Again, the truth is that intervention is nothing but the manifestation of the emotions that are generated when you lack confidence. If you trust a system and the way it handles the market then you simply let it do its thing. If you think it can be improved then you do a rigorous historical and statistical analysis of hundreds of trades and introduce modifications within the code. By intervening with an expert advisor you are simply destroying its trading tactic and making it be something different which is non-mechanical and has uncertain results in the long term, taking away all the validity of simulations, previous live trading, etc.

My advice is then pretty simple, analyze a few hundred trades, analyze the logic, know when the system is bound to lose trades, when it wins, how it wins, how it loses and learn to be comfortable with the historically seen periods of loses and profits. Most people are simply lazy and don't want to do this and they pay for this laziness with an overall lack of confidence, uncertainty and by intervening with systems and changing their long term behavior and profitability. It is difficult not to intervene and it takes years of practice and experience to be able to restrain one's self, for some people these words will be enough, for others it will take the messing up of a strategy and the arrival at an unprofitable scenario to learn the lesson.

3.12 The Market Fights Back : Five Ways in Which the Market Protects Itself from Massive Mechanical Exploitation

When I started my journey in automated trading it was only a while before I asked myself a very important question : Why doesn't everyone live from automated trading if it is so profitable ? I bet many of you have asked yourselves the same question and you haven't found any answer that clearly tells you why every average Joe out there who knows about expert advisors isn't living from them. I used to have several long discussion with fellow traders and their usual answer - before I started living from these systems - was "they just don't work". Clearly simple, if the systems do not work, then nobody can live from them, end of story.

However, upon a closer inspection of how the successful systems I know work and their trading characteristics I have come to a set of conclusions that show us why - even if everybody knew them and traded them - only a few people could ever be successful using them. On today's post I will discuss the five main ways the market protects itself from the massive exploitation of mechanical systems giving you an idea of what you are getting into if you want to achieve long term profits with expert advisors.

1. Profitable systems have long draw down periods. One of the things that I think makes the massive exploitation of long term profitable systems likely impossible is the fact that draw down periods of profitable systems are extremely long and very hard to endure for most people. If you don't understand what the system does and you have been in draw down for 300 days, then common sense would dictate you stop trading the system. When people trade something they don't understand they easily fall prey to fear while if they attempt to have "faith" on the system they will get their accounts wiped if the system stops working.

2. Worst historical draw downs always get worse. Another very important aspect is the fact that the market will show you a darker side of its face as time evolves. I have seen many people trade systems with high risk levels saying "in a 10 years backtest its maximum draw down was 60%, so I'll be fine". This is a big mistake. The worst performing point in the past does not forecast the worst point in the future. A system may go into a deeper draw down in the future and if your risk measurements don't take a deeper draw down into account the system's future regular profit/draw down oscillations will take you out.

3. Long term profitable systems are unattractive. People generally look for systems that show short term results, high profit rates and high recoveries from loses and therefore long term profitable systems simply fail to attract people. If you were selling these systems probably only a bunch of people would ever buy them and this is because their profit targets are not very high and their draw down periods are long and their draw downs deep. So in the end people are simply not attracted to these systems and prefer to trade much more dangerous systems.

4. They give back. I think that a very good reason why people don't like long term profitable systems is because they have a strong tendency to give back profits a significant amount of the time. The turtle trading system can have a 1800 pip profit and come out with a 200 pip loss. Most people will get angry, won't understand this and will run away from the system saying that it doesn't work. They simply do not understand the reason why this "giving back" happens and why it is done to preserve the probability to achieve a trading system's potential.

5. True understanding is needed. Due to all the above reasons, the chief protection of the market against the massive exploitation of mechanically tradable inefficiencies is the fact that a true understanding of the systems is necessary. If you set and forget you will fail due to the above reasons. You will probably get out on a predicted draw down cycle, modify the system eternally to try to make it "avoid giving back" or you may just attempt to trade the system on blind faith and wipe your account when the system has simply become too risky to be traded.

After I realized the truth behind all the above reasons, the design and trading of long term profitable systems became much easier. In the end the most important thing is to know exactly what the system is doing, why it is bound to work, how it works under varied market conditions and why and when the system is bound to make profitable trades. It is extremely important to know the long term statistical characteristics of the trading systems and to constantly evaluate the performance of the strategies against what you learn from previous live trading and simulations. In the end few people will be able to achieve the understanding needed to defeat the market at its own game. Hopefully you'll be one of them :o)

4 Expert Advisor Evaluation

4.1 Trading on the Edge of the Charts...Why Visual Backtesting Does Not Work

It seems that the first thing that anyone does when they are starting to examine a potential trading system is to go down the charts and analyze the potential trades that would have happened from time to time. That is, people do what we call a "visual backtest" which is merely the optical evaluation of trading possibilities over a chart over a given (usually small) period of time. Visual backtesting brings many problems to the evaluation and creation of automated and manual trading system, often because profitability is over estimated by the person who does the backtesting who is already "biased" in a certain sense towards the profitability of the systems he or she develops.

What are the problems of visual backtesting ? Well, for one, most people seem to underestimate the problems related to how many indicators are portrayed, often traders will analyze systems with indicators that repaint (change past values due to future values) and because of that they get a greater profitability, there is also the fact that people tend to underestimate the exits when they already have access to how the whole picture developed. They say, I would get out here because "this" happened but "this" is usually a particular criteria applied to a single trade, a criteria that gets somehow twisted and adapted as the trader does the backtesting. Visual back testers tend to hate taking loses and they usually modify the rules of the system "on the fly" to avoid the taking of loses. This of course, means that in the end the trader has a system that may have worked very well for a small set of particular trades but will fail to work in the future or further away in the past.

What is the correct way to test a strategy then ? The best way to test a strategy is to simulate what real trading would have been like. The easiest way to do this is to use the metatrader 4 strategy tester as a "real life" market experience. You just need to edit any expert you have and place a // before the OrderSend function on any lines that start with it, this will make the expert unable to open trades. After this, just load the expert into any chart and do a visual backtest of the period you want to analyze. This will give you an "evolving" view of the market and you will see it how you would see the market in real life. With the advantage that you can "fast forward" and see where your trades would have ended. This allows you to apply any indicator/price criteria and see whether it would or it would have not

generated you profit in the long term.

When I am teaching someone how to trade this is one of the first things I do, we will open up a strategy tester and we will "simulate" random entries on the visual backtesting and see where we would have got out of trades (by simulate I mean that we will just draw lines on the screen and keep the record on an excel sheet since no actual trades can be entered while on a backtest). This teaches in a very practical way how to handle market exits and how the market is viewed "on the edge of the chart". Viewing the market before "the edge" is something that will never happen in real life so why would you ever practice trading a system on charts that have already been drawn ? If you think about it, it does not make any sense because the whole perspective changes dramatically. You will see that after doing this exercise you will get a very good perspective of how you interpret and react to the market. Generally I have several metatrader instances so that me and my students can analyze both short and long term trading perspectives.

4.2 Knowing Before Knowing, The dangers in Hindsight

One of my new pupils in forex told me that he had been going through some automated trading system websites and that he payed close attention to the disclaimer shown at the end (shouldn't we all pay attention to that disclaimer). He wanted my opinion about hindsight and why it is important to consider it when trading either a manual or an automated trading system. Since this is an extremely important subject I wanted to dedicate today's post to the discussion of hindsight and how it can affect our trading negatively, specially when evaluating discretionary trading strategies. What is the problem of hindsight ?

To begin with, having hindsight is knowing something before it happens, that is, knowing the future. When we are evaluating our automated or manual trading strategies we have the benefit of hindsight. We all know the EUR/USD reached a high near 1.60 and during the next year dropped to near 1.29. We know that the pair then rallied towards 1.5, we all know this. What is wrong about this ? Well, it depends. I thought that I was barely affected by hindsight until I discovered that on an statistical study of a system I was doing on the EUR/USD I had been subconsciously suppressing short positions before 2008 and long positions after mid 2008. I was in fact getting better results because I knew what was going to happen and I was subconsciously looking for profitable results. This is an innocent, bad consequence of hindsight, I was overestimating profitability.

Of course, there is a much more evil side to hindsight. Expert Advisor sellers looking to get very high profits in backtesting results can effectively manipulate their systems so that they "know the future" and trade in an exceedingly profitable fashion on historical data. Obviously if the system has any "hint" of the future it will most likely achieve very high profitable returns. This is the main reason why we cannot trust mere backtests from EA sellers, we always need live tests that show consistency with the backtests so that we know that the system behaves the same in real live trading conditions as it does in simulation.

Then it gets worse when systems are designed around hindsight. As an example, it has become popular to trade grid systems on the EUR/CHF or the AUD/NZD based on the hypothesis that this pairs are range bound. How do you know they are range-bound ? As a matter of fact, had you made the same hypothesis 5 years ago you would have gone through some very bad range extensions that would have wiped your account. Backtesting strategies that are based on a range that we know now but previously ignored obviously yields profit, since this range did happen. But could you have foreseen that range somehow in 2000 ? 2005 ? You couldn't have. The same applies now, could you foresee the range that will be in place in 2020 ? NO ! Will there even be a range then ? As you can see, grid trading is a perfect example of a system designed around hindsight that assumes the future will be the past, nothing could be more wrong.

Hindsight is a very powerful force. When you evaluate or program either your automated or manual trading systems you should be very careful to leave hindsight aside. You should always consider that a healthy system must have no assumptions either about the past or the future, good long term profitable systems trade as market conditions change and have no assumptions about absolute ranges, past trend directions, etc. A good system trades the market as it plays out and assumes nothing about where it is going or where it has gone, it simply trades when the market shows a certain scenario it has been programmed to react to, then it takes advantage of it.

4.3 Curve Fitting Trading Systems... Can it be Avoided ?

Imagine that you have dedicated several weeks to the development of a profitable trading system. Your simulations are showing you brilliant results, so you decide to test your system on a live account for a few months. Then you discover that

performance is nowhere near what you expected. What is wrong ? Well, the most probable explanation is that you have curve-fitted your system to past data and therefore your system is unable to behave similarly on a different data set. On the following paragraphs I will talk to you about what curve-fitting is, how it affects system development and how we can develop systems to avoid this seemingly unavoidable curse.

So what is curve-fitting anyway ? Simply explained, the term is derived from the fact that any given "curve" or data set can be accounted for by a given mathematical function of arbitrary complexity. That is, you can always find a mathematical function which can predict with absolute accuracy all the items of a data set. However, the function may have absolutely no predictive power. For example, take into account the data set 1,2,3,4. Can you predict the next number ? You can immediately think of a function which can predict all the items of the data set but can it predict the next one ? Well, what if the next one was 12 ? then your function has no predictive capability even though it was able to predict all previous items successfully.

The problem applies to trading because the fact that a given system was able to exploit a market inefficiency in the past does not guarantee that the inefficiency will be present in the future. Usually optimization is great to curve-fit trading systems because what an optimization does is merely to "adjust function parameters" to find a mathematically sound answer to the problem. The better and tighter the optimization, the more curve-fitted the system will become, this is a reason why neural networks - which are excellent at optimization- tend to fail in successful trading systems as they always curve-fit their data excessively.

So how can we make a trading systems with the slightest possible chance of ending up with a useless curve-fitted expert advisor ? The first important measure is to do simulations on periods which are as long as possible. The longer the trading period, the more statistically significant the data set is and the less likely it is to allow the curve fitting of your system. Long time periods introduce a wide variety of market conditions which make curve fitting very difficult. However the number of trades is also very important. Having more trades for a given long trading period is better (against curve-fitting) since it implies a larger number of market conditions in which the EA was able to trade and succeed.

Another important aspect of curve-fitting is to avoid excessively correlated and

exhaustive optimization of trading systems. Trading systems should be optimized one variable at a time or using two cross-related variables at a maximum without going into excessive detail. For example if an EA has a parameter which can go from 20 to 50 it is better to optimize it in 2 steps (20,22,24, etc) rather than running a full optimization of all values (20,21,22, etc).

Another great idea is to have very robust profitability, this means that results in an optimization should form "thick clusters" of profitability. For example, if in the above example 24 gives very profitable results but 23 and 25 are unprofitable then it means that in the future the system is bound to be unprofitable if there are slight changes in the optimum criteria (something which will happen). When running an optimization as many results as possible should be profitable and the area around the most profitable result should also be close to that result.

Then finally we also have the matter of adaptability. A system should be able to adapt to changes in market conditions therefore having some flexibility in its entry and exit criteria. If you optimize a system which gives very good results with a TP of 100 pips the system is likely going to be unprofitable in the future as market volatility and conditions fluctuate, invalidating the 100 pip TP. The best thing would be to optimize a dynamic criteria, for example, what percentage of the standard deviation is the ideal TP ? This ensures that the EA can change its exit and entry values in a dynamic way therefore adding another layer of protection against curve fitting.

However, despite all our efforts it is still a mathematical possibility to curve fit a trading system to the past given the fact that the future may have absolutely no relationship with it (like in 1,2,3,4,12). Nonetheless, following the above criteria in the development of a trading system aiming for adaptability, broad optimizations, robust profitability and large periods of testing data guarantees a better chance of succeeding even if there are significant changes in future market behavior.

4.4 The Testing Time Problem... For How Long Should I Demo Test ?

When people start to get into the world of automated trading systems they soon find out that there is a sort of "general protocol" established by most of the on line

user community to use forex expert advisors. People are generally told to get an EA, demo it for a certain period of time and then, when if the demo gives satisfactory results, run the expert advisor on a live account with real money. Where did this idea come from ? It came from the notion that regular people have that a minor test of a demo account will most likely mimic trading on a live account later on. Today's post will focus on explaining why this criteria to evaluate profitability is wrong and why most of the time it will only lead to the discarding of profitable systems and loses on forex live accounts.

What is wrong with this testing approach ? You take an expert advisor you want to test, run it on a demo account for X weeks, then you are sure it is profitable so you run it in a live account. What ? From where did people get that a profitable or unprofitable period of a few weeks or months on demo is any indicative of the expert's profitability on a live account ? I certainly do not know. A demo test of a few weeks or months is only going to tell you if the expert is profitable under a very narrow window of market conditions, these conditions are bound to change once the market starts to evolve, leaving the actual usefulness of your demo period in the trash.

What if the demo testing period only generates draw down ? Does this mean the expert is unprofitable ? No, it doesn't, many long term profitable systems go through long periods of draw down (even one or two years) before the very profitable periods which generate most equity gains. Then you are bound to discard long term profitable system when using this demo testing small periods because long term profitable systems are always most likely to be within a break even/draw down period than within a profitable one. Now what if you have one year of demo testing ? good enough ? No ! Again, forward testing is not the only thing you need to take into account. Some systems with terribly unsound trading techniques can generate a lot of money on periods of even one or two years before wiping everything out. This is the case for some Martingale systems, you can also be using a curve fitted system which then goes out of date and starts to wipe your account.

So is there any amount of time you can have in demo testing which will inevitably ensure you that you will not lose money on a live account ? No ! Long story short, there is no substitute for analysis and sound evaluation of trading systems. No forward testing period, no matter how long, can cover for the tester's ignorance about the system or its potential for long term profitability. How can

you be sure then that a system is going to be profitable in the long term ? You cannot ! However you can ensure that there is a high probability for your system succeeding in the future if you ensure that the system uses sound trading techniques, is able to adapt to varying market conditions and performs in a satisfactory manner in long (ten year or more) simulations with consistent results in live testing.

4.5 The Trick of Tricks... Deceit by Multiple Testing

I did think I had figured out all the ways in which expert advisor sellers could trick people into buying things that did not work in the long term. I certainly thought that I had gone through so many websites that it was now almost impossible for expert advisor sellers to surprise me with something new. However I recently thought that there is a very mean and powerful way in which expert advisor sellers can deceit customers and this tactic could be or already have been used by some sellers out there. Today's post will focus on the analysis of this deceit tactic and how we can protect ourselves from falling into this trap.

What would you say if you found an expert advisor sales page in which you had a one year live account with a 200% profit with verified investor access ? The EA also does not use any unsound trading tactics. Would you buy the expert advisor ? All the trades are absolutely legitimate, made by the trading system. Is there any way in which the EA seller could have cheated you into buying something that does not work, even if the EA has been trading for so long ? Is there any way in which the live statement could have been fabricated ?

Yes and no. Definitely the expert advisor seller cannot forge a one year live test with verifiable investor access, there is just no way to do this. There are only two options then regarding the live account : either it was traded by the EA or it was manually traded by the seller. Now if it was manually traded by the seller. Then the seller should become an account manager if after one year he/she was able to pull 200% with a decent draw down, that is definitely a good thing for a manual trader. But there is a third option... The trick of tricks.

What is this trick of tricks. Simple, take an EA which trades a given system and has some very good years but then some years kill the account. Now, the trick is to modify the settings of this EA and run 20 or more live accounts, each one with a different setting. After a year, almost all of them will have wiped the

account but a few may have produced a lot of profit. Of course, the loses of all the accounts far exceed the profits but the EA seller now has a live result of an EA which did produce a very big profit in live verifiable testing. The buyer sees what seems to be transparent testing of an EA for a year when in reality all that there was was a very broad sample test which gave some profitable results on some of the settings.

The buyer gets the EA only to discover that it fails bluntly in live testing as time progresses because the EA has this characteristic, it is only short term profitable. Now the EA seller has many thousands of dollars in sales and can move on to the next EA. Maybe the seller can just take another set of profitable settings and show it on another web site or repeat the process with another system. The cost of doing this is high, but it may only be 10-20 thousand dollars and the EA seller will end up making a lot more with such evidence at his/her mercy.

Do we have any defense ? Sure, as I have always said, back/live testing consistency and a backtest of a 10 year period of time is going to put us on the safe side. It is always very important for you to assume that EA sellers are using whatever tactics to fool you to believe results which are not true. It is always important for you to check all the important points necessary for an EA to be long term profitable. Making up all these points is almost impossible since they require true consistency with long term simulations an dynamic adaptability against changing market conditions.

4.6 What is Accurate Data ? Talking About Simulations in Forex Trading

Certainly one of the main concerns of traders developing automated strategies is the achievement of accurate simulations that can give us an idea about the past performance of a given strategy. The whole premise of automated trading is based on the building of systems that have worked extensively in the past - under very varied market conditions - which have ideal possibilities of surviving in the future. It therefore becomes extremely important to know the reliability of the data we have and if we can or can’t trust our simulations of past market conditions to be accurate. On today’s post I want to discuss the definition of "reliable data" what it means, what we should look for and the current state of metaquotes’ data sets when it comes to this concept of "reliability".

In general trading there is only one definition for reliable data. This is data which is extracted from a central exchange which shows all the variations (down to each transaction) which happen across certain dates. In stocks and futures obtaining reliable data is a very simple process, there are a number of central exchanges and you simply buy the data you want from whatever exchange you are interested in. If you are interested in knowing US stocks data for the past 10 years you can easily purchase extremely detailed data from the New York Stock Exchange from a different series of data providers.

When it comes to forex trading we face a totally different beast because we lack a central exchange. Since there is no "original data" as in the case of stocks and futures, it is impossible to tell just from looking at them which one is the best data feed. In practice, the best data feed for you would be the historical data feed that best matches the liquidity providers of your present broker but the information pertaining to the origin of the data, the providers it comes from and the liquidity providers of your broker is often very secret and hard to know.

Because of these facts we have to make a new definition of reliable data which centers around the technical aspects of the data sets used. What we want - at a minimum - is a data set that does not have mismatches between time periods or odd occurrences like 1 pip daily bars. The 4 digit metaquotes data set is completely unreliable since it has a lot of these errors (which I showed on an Asirikuy video and highlighted on a blog post before) reason why we must ONLY use the 5 digit metaquotes history to run simulations on the metatrader 4 platform, meaning that only 5 digit brokers can be used for reliable backtesting.

However, outside these very simple technical aspects that judge the general soundness of the data use, we cannot have any criteria that tells us if the data is more or less valid than other data sets. Of course, metaquotes data will be different from 1 minute data from other providers (such as Oanda or Dukascopy) but the truth is that such differences are expected merely because of the previously mentioned lack of a central exchange.

The best things we can do to develop systems that are not overly dependent on the "fine" and possibly extremely variable details of historical data is to use strategies which only trade above or on the one hour chart and which do not have a strong dependency on spread widening or execution variables for accurate simu-

lation. A system that trades on lower time frames (below one hour) and has small TP or SL values is not only going to give inaccurate simulations due to one minute interpolation problems but any LIVE results obtained on one broker will probably be very hard to reproduce on another due to changes in data feeds between them.

In the end the accuracy of simulations in the forex market is still a topic of debate but the whole preference of one data set over another because of "reliability" does not make a lot of sense once the original technical aspects of the data proposed are examined. If you have two equally technically sound historical data groups then both are bound to be equally valid and merely different because of the natural feed differences between forex brokers. Our weapons against any possible dependency include the use of longer time frames and wide profit and stop loss targets but such an approach is also bound to have a certain degree of broker dependency, something we are currently examining within Asirikuy.

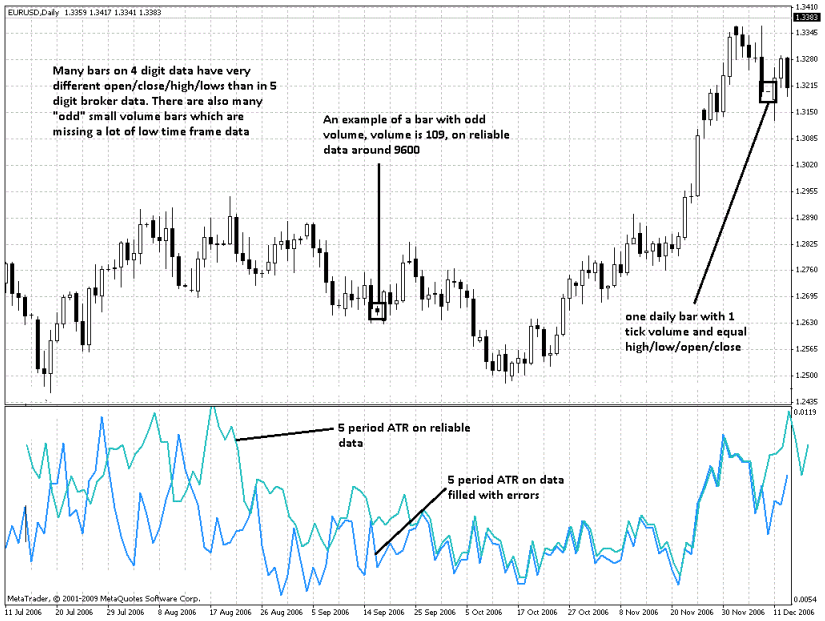
4.7 Unreliability of Backtesting Data... Why you should ONLY use the Alpari Downloaded Mt4 for Backtesting

Through all my time as an automated trading system developer one of the things which I have always dealt with is the problem of backtesting reliability. It quickly became apparent to me that the metatrader backtester had some serious flaws (as evident by some commercial experts which are able to turn dimes into millions in a few years) inherent to the way in which the program does its testing. Besides these flaws which include backtesting interpolation and similar problems I also found out that there were a lot of "data" related problems. Within this blog post I want to talk to you a little bit about these problems and why it is vital to address them in order to have reliable simulations of your trading systems. Particularly I am going to tell you the reasons why backtesting should ONLY be done with the metatrader downloaded from the Alpari website since backtests done on ANY other platform (any non 5 digit broker) are bound to be VERY unreliable, depending on your trading system.

So what are data-related errors ? These errors regarding a trading system's simulated performance are generated due to quality errors within the historical data used, that is, the data used to do the backtests has errors which do not allow us to do accurate historical simulations. Last week, with the release of the Teyacanani trading system, I received a couple of emails telling me that some Asirikuy

members were unable to reproduce my backtesting results. Upon some asking I realized that these members were not using the Alpari downloaded metatrader platform but their OWN broker's platform to do the backtesting mainly because they believed that this would better reproduce their broker's "trading conditions". I was absolutely determined to look into the issue as it was vital for me to know why these results were changing so much.

What I found out was that the metatrader history downloaded on other broker platforms (I tried around 10 different broker platforms with the same results) gives you very inaccurate historical data. At first I thought that the problems were arising due to the appearance of Sunday candles within this historical data (which appear after 3 months of past data regardless of if your broker has or doesn't have these bars) but then I realized that not only was there an introduction of Sunday candles but there was also a substantial amount of differences with the data of the Alpari downloaded platform. These differences - which I examined from 2005 through 2007 - include the appearance of very low volume daily bars (non-Sunday) which are missing a massive amount of movement with much smaller high/low/open/close values than on the Alpari downloaded platform. Moreover, there is also the appearance of very odd holiday bars which are bars made up of 1 tick with the same high/low/open/close values. The below image shows examples of these errors as well as a comparison between the 5 period ATR on both accurate and inaccurate historical data.



My conclusion from this was basically that this data has a lot of intra-day information missing (which I confirmed) as well as massive amount of inaccurate daily candles, something which inevitably changes the profitability of many trading systems which rely on short indicator periods such as Teyacanani. I was previously aware of these problems with data downloaded through the history center from non-five digit broker downloaded mt4 platforms but the problem seems to be far greater than what I had previously imagined. However some systems are bound to show more or less changes between these two data sets depending on their sensibility.

Through this post I want to warn fellow traders and automated trading system developers that you should ONLY use the Alpari (or other five digit broker) downloaded metatrader 4 platform for backtesting and that using any other broker for backtesting does NOT make the backtest approach your "broker's conditions" , on the contrary, the downloaded data may introduce contradictions as Sunday candles on a non-Sunday candle broker and all the errors I mentioned before. For this reason- if you want to backtest your systems with reliable data- download the metatrader platform from Alpari and do your backtests there. I have compared this data with Oanda Tick data and it seems to be in fair agreement (while the other data is NOT) so again, ONLY use a five digit broker metatrader platform to

perform backtests.

Previously I had written that the metaquotes platform should be downloaded but they recently changed from a five digit (in build 225) to a four digit (in build 226) broker by default making the platform download the bad data. Alpari US/UK (which was the previous broker used) does download reliable data.

4.8 Jumping to Conclusions... The Neglect of Statistical Significance

One of the most prominent mistakes I have noticed when people try to develop new trading systems or test commercial or free trading systems is their eagerness to jump to conclusions. I believe that the way in which many people evaluate systems and make conclusions about their profitability/unprofitability is actually faulted due to the fact that they don't take into account the significance of their results when evaluating a strategy. On today's post I will write about one -if not the most- important aspect when evaluating any trading system or strategy : Statistical Significance. Through the following paragraphs I will explain to you what this concept is and what its consequences are for expert advisor evaluation and trading system design.

When people design or evaluate a trading strategy they are usually very eager to say something about the performance of a system within a few weeks or a few months. Phrases like - if it works well on demo for a few weeks I'll put it on live - or - it didn't make a profit for 6 weeks - are very common and some of the first things new traders actually learn. The problem is mainly that this short-lived analysis of a trading system usually leads to conclusions which are only representative of short term performance and do not have any validity regarding the long term aspects of a given trading strategy.

I believe that this problem is mainly a consequence of the lack of formation people have regarding statistics - a field which is very important when developing long term performing systems. This science tells us that in order to draw valid conclusions for a given question we must have a big enough sample size. So saying that a system is unprofitable or profitable from a few months of testing is simply not valid because a few months are simply statistically not representative of long term performance. When you evaluate a trading system's performance in

the short term you are simply evaluating it under current market conditions and possibly under a temporary draw down cycle which does not appear evident to you due to the short scope of the analysis being done. This is specially important for many systems that have predictably long cycles of draw down which then lead to very profitable trading periods, systems which would most of the time be discarded by people who simply don't evaluate systems in a rigorous manner.

Another problem of this "short term syndrome" is the fact that people quickly jump to conclusions about how to modify a system to make it "perform better". These modifications which are almost NEVER based on an analysis of a statistically significant number of trades may lead to an improvement of performance under current market conditions with a fatal blow to long term trading performance. On the other hand, there will also be a "praise" of systems which perform very well in the short term, often leading to the heavy use of systems that use unsound trading techniques and which put accounts at a great risk of facing a complete wipe out.

So what is a statistically significant sample size ? This question is not very easy to answer since there is no mathematical criteria to put aside a market condition from another. I have discussed this question a few time with a friend of mine who has a major in statistics and we arrived at the conclusion that - according to volatility measures - at least 5 years of analysis are necessary to draw valid conclusions about a trading system. Therefore, when going through system development and the proposal of modifications it becomes necessary to evaluate a modification or performance through the course of a five year period in order to draw valid conclusions.

In the case of systems which ARE back/live testing consistent, five years of live trading are necessary in order to conclude that the adaptability and performance seen in backtesting can effectively be reproduced under future market conditions. If the system is not back/live testing consistent the problem becomes harder as at least an initial 5 years of live trading with no modifications are necessary to make an analysis to propose changes to the system to increase its profitability.

I know that it is actually hard to go through hundreds of trades and evaluate one by one the effect of a certain modification. For most people it is much easier to just evaluate systems for a few months and draw conclusions which are simply

not statistically valid meaning that they are not representative of the system's long term performance. Some people even venture to modify systems based on just a few weeks or days of trading, making modification which have an unpredictable effect on long term performance.

It is easy to understand- with such a lack of rigorous analysis and evaluation - why there is an overvaluation of systems that give short-term result and a systematic discarding of some systems that have indeed potential for long term profitability. Most reviewers show little or no knowledge regarding this field and they will be very quick to jump to conclusions without having a clue about the validity of what they are actually saying from a "sample size" point of view. I encourage everyone interested in system design or in automated trading in general to get a basic formation in the field of statistics and particularly in the field of "hypothesis testing" which evaluates the whole process of drawing valid conclusions from a given statistical sample.

4.9 And you say you have a strategy ?

It is pretty easy to see why so many people fail to profit from forex trading when you look at the way this form of business is portrayed on line. Today I was doing my monthly research on new trading systems and developments in forums and I found out the same thing I always find. These "trading systems" which are misleading, poorly explained and that have no results whatsoever that any trader could use to see their profitability.

I cannot even imagine how bad this "on line forex world" is for someone who is just starting to trade. You just need to search for "forex trading system" and you will find a myriad of websites with tons of articles describing systems and ways to trade the market which have absolutely no track record or proof of profitability. For example, when you search for something very simple as "moving average" you quickly find a ton of systems based on different moving average crosses, etc. The same thing happens with every indicator. The problem is not that there are websites describing "how to use" these indicators but the problem is that many times they portray these uses as "profitable" when in fact they have no track record or historical testing whatsoever that can prove their case.

It must be very confusing for someone looking for a profitable system because they will find out that there are a lot of people telling them "use this", "use that",

"make your own system" but non of them is actually saying anything concrete or showing them any good proof that anything they are saying may actually work. You never see any of these websites talking about a "moving average cross" saying "you can make X every year", "expect an X maximum draw down". In fact, to make it worse, most of the time these websites do not even describe the money management aspects of the trading systems or merely say something like "do not risk more than x% per trade" or "I never use more than 100 pips for my stop loss", etc.

The problem arises when someone tries to describe a manual, very discretionary system as something that can be systematic. I can assure you that I have programmed and backtested more than 30 strategies I have found in websites and forums that claimed "profitability" and non of them have turned to be anything more than "short term profitable" in the best cases. The few that have actually been profitable are strategies that I already knew were profitable like the turtle trading system or the 4 week breakout strategy. Both of these strategies generate profits (you can check the tags for more info) in the long term.

What I am saying is that you should be very careful with what you trade so that you do not lose your money and your time basing your hopes in some manual/automated strategy which may not be profitable altogether. If you are going to trade a manual strategy that is supposed to be systematic you should program it / have it programmed and check its long term profitability. If the strategy is discretionary you should do a manual back/forward test of it as you would trade it live and see whether or not you can generate the profits mentioned by the proposer.

In my experience, most of the time the strategies proposed by people on line are actually not long term profitable, sadly, most of the time these strategies are described as "profitable" because of some short term forward testing results or some "visual backtesting" which is something I advice you avoid as it can be problematic (more on this on tomorrow’s post). If you ever want to test a manual strategy on historical data you should run it as you would see it on a live feed.

I can imagine a manual trader who has just started who is just looking for something to "follow blindly" and start making money quickly. I walked a mile in those shoes and I remember the despair and uneasiness that came when systems entered draw down and I wondered "will it end?", "how deep will it be?". Questions like these are supposed to be answered before you even start trading a

system and for this reason any automated system I describe always comes with an explanation of the draw down and the profits that can be expected. Knowing ahead of time the potential risks and profits of a trading system makes you trust it and makes you trade it profitably.

4.10 Evaluating Trading Systems : Characteristics and Quality

The evaluation of trading strategies is certainly one of the most necessary processes in the trading of mechanical manual or automated systems. The value of evaluation is great since it allows traders to loose their irrational fear and greed emotions and gain a true understanding about the characteristics of the trading system they intend to trade. Part of the evaluation of trading systems involves the judging of different quality parameters to distinguish what makes a system better and what makes it worse, a process which although seemingly intuitive is not so straightforward. Adequate knowledge about the information pertaining to each parameter of the test and what it conveys the user is necessary to know what its consequences actually are in real trading and what their power is from a comparative standpoint. On today's post I am going to talk about how to look at a system's characteristics and what you should be looking for to judge the quality of a given strategy.

New traders are often confused when it comes to the evaluation of trading strategies something which is not surprising if you take into account the whole amount of information which can be derived for a given system. People new to trading first seem to focus on the absolute values of the profit and maximum draw down percentages but judging the quality of a trading system merely by looking at these two values without prior experience is very hard. It is also true that judging a system just through one of these two values is misleading in the sense that it doesn't represent a good overall picture of the strategy's characteristics. For example, saying that a system makes 100% a year does not make any sense if the actual potential draw down is not known and even if it is, other characteristics need to be taken into account.

The most simple way to compare a trading system to another effectively is to use ratios of profit and draw down variables. The profit factor, which compares the gross profit against the gross losses of a strategy is an initial measure of system

quality. However, although this type of ratios do give us some information about the past risk to reward long term expectation (especially when evaluated over 10 year periods) they do not talk a lot about the problems the strategy would run into with increases in future risk. For this reason I believe that although these ratios are useful to some extent to compare simulations they do not fully represent the inherent market exposure of the system in a way in which a true comparison is made.

System quality - without a doubt - needs to include an analysis of increases in risk over the projected values achieved in simulations to know the true problems that the user may be running into if - for example - risk in the future increases or the estimation of profit and draw down targets is not accurate. For this reason it seems better to evaluate strategies based on projections of increased risk to know the true quality of the system and how dependent it may be on small glitches in simulations.

In this case our best shot at accurate quality comparisons seems to be the average compounded yearly profit to worst case scenario ratio in which the average yearly profit (over a 10 year period) is compared to twice the maximum draw down of the strategy (worst case ratio). To add more meaning to this increased risk comparison a careful user might also want to test the average compounded yearly profit to double consecutive loses after maximum draw down ratio (worst streak ratio). In this ratio, the average compounded yearly profit is compared to the maximum draw down percentage plus a string of loses equal to twice the number of maximum consecutive losing trades. The idea here is to get an idea about the robustness of the strategy and how bad things can turn before a bad scenario is bound to happen.

Systems that are very sensitive to small changes in the number of consecutive loses will give very unfavorable ratios in both cases while systems that have less dependency on individual trades will get better results. This way of evaluating strategies eliminates by default a lot of systems that use unsound trading tactics such as martingales and systems with very bad risk to reward ratios due to the fact that this ratio comparison makes them show their flaws if increases in risk are presented. One thing all traders should understand is that in the future the risk of any given strategy is bound to increase to some extent and having systems that are able to handle this risk increase is not only vital but necessary for successful long term trading.

The above evaluation criteria also allows you to use systems that don't need to wipe accounts to demonstrate that the market has become too risky for them. For example, a strategy with a worst case ratio of 1:2 targeting a 20% yearly profit may be stopped from trading at a 40% draw down while a system that has a 1:5 ratio in the same situation would end up killing the account before we realize it has become to risky. It is also important here to note that sound systems will have a "worst case ratio" better or only slightly worse than their "worst streak ratio" while systems that use unsound techniques -which will be sensitive to small increases in consecutive loses - will have a much worse "worst streak ratio".

In summary my advice is that you focus on the profit to draw down ratios when evaluating trading strategies but -most importantly - that you evaluate ratios in which the maximum draw down and maximum number of consecutive loses are increased so that you get a true idea about your system's robustness.

5 Losing Periods and Automated Trading System Psychology

5.1 Getting the Right Mind Set : Distinguishing Between Expenses and Failures

Certainly when people start to get into forex trading every little trade that doesn't go their way seems like a gigantic failure. Definitely the reasons why this is the case are many but perhaps the most important one is that new traders do not have an approach to trading that lets them make the distinction between what is a failure and what is a normal trade that simply went wrong when everything was done "by the book". On today's post I will be talking about the distinction between trades that fail and trades that lose, I will define each one and I will attempt to give you some guidelines so that you can change your mindset and start approaching trading from a more business like perspective. Hopefully after reading this post you will apply this to your trading and you will find out that most of your so called "failures" are just business expenses while many of your profitable trades, are just failures.

Cataloging trades that go "wrong" and end up in losing territory as failures

is easy because when we lose money we tend to feel like losers. It is therefore very normal to consider losing trades failures in the beginning. However after you have been trading for a while it becomes obvious that losing is an inherent part of long term profitable trading and that learning to catalog losing trades differently is important to approach trading with the right mindset. In reality, when every trade is placed there is a natural probability that it may turn out to be a loser (the trade's market exposure) and therefore when you execute everything as planned and you lose, it is just a temporary consequence of your strategy.

When you approach trading like a business, this becomes a business expense and the trade become a triumph since you planned you trade and traded your plan. This in turn makes it easier to deal with losing trades since you approach them in a very non-emotional way, simply as some temporary events that will lead to some future profitability. Therefore losing trades that are a consequence of a well laid out plan with accurate long term profit and draw down targets are not failures, they are just part of your business model.

Failures - on the other hand - are all the trades you take that deviate from your business plan. When you intervene with your plan and make emotional changes to your trading methodology or system you are indeed failing at trading because you are moving away from your "business model". If you made a trade in which you took a decision that generated a lot of profit but that decision led to a road where the long term probability of success was unknown then you have failed because what you obtained was some profit out of some luck. Long term survival in forex trading is about having a plan and executing the plan to get to where you want to be, any deviations from the plan are failures since they lead you a road of unpredictability and uncertainty that will end up with failure.

In order to trade forex successfully I focus on trading as a business and on the trades taken by my systems as a business plan. Any losing trades that happen are merely "business expenses" and all of them are triumphs in the sense that they represent my confidence in the strategy and the business plan. I now understand that any action I take that may intervene with my strategies will deviate me from my long term profitability objective and this for me has become unacceptable since these changes constitute failures of what I want to achieve.

So in the end, loses are a natural part of trading and they will always be there. Dealing with loses is something which is naturally hard to do but you should be able to make the distinction and take loses that are part of a well laid out plan as

business expenses while those trades that get you to uncharted territory should be regarded as failures. This mindset will get you on a track of long term thinking and understanding that will ultimately lead to long term profitable trading.

5.2 When the Expected Draw Downs Come - Dealing With Loses When you Live from Trading

Perhaps the most difficult aspect of forex trading is the fact that loses happen and they constitute a vital and necessary aspect of the trading experience. During various posts I have talked about the nature of loses in forex trading, their origin and their need as limiting factors of the massive exploitation of mechanical trading strategies. Today I want to talk to you about a more personal aspect of loses and the way in which I deal with draw downs as a vital part of my career as a trader who lives from the performance of his trading strategies. I will talk about the ways in which I have dealt with draw down in the past, the plan I have laid out and how this plan comes to life in reality when that creepy monster known as a deep-long draw down period shows his sharp teeth around the corner.

Truth be told, I have never been good at dealing with loses. Perhaps it is because I am an emotional man or because I sometimes view my success through my trades but I have always dreaded and hated losing periods. Of course, I am just a human being and losing is not easy for anyone and it especially didn't feel easy for me. When I began trading I used to take a serious emotional blow every time I faced a draw down period. I didn't react by getting angry, I actually got depressed and frustrated as I saw how my money started to evaporate from previously profitable accounts. The emotion filled trading that followed only led to deeper draw downs and to even deeper feelings of anguish as more and bigger loses appeared. - - After developing my core knowledge about the market and going through the extensive process detailed through a good portion of this blog, I became much more conscious about the nature of draw down periods and I realized that they are THERE and that they are necessary for the trading of profitable systems. It actually comes down to a very simple concept, without the draw downs there simply wouldn't be long term profitable systems because the market wouldn't be able to discourage their trading through the cycle I detailed a few posts ago.

However one thing is to know that you will face a 250 day long 20% deep draw down period and another thing is to take your account (or even emotionally worse, your managed accounts) through this psychological journey. The first time

I faced the draw down monster I almost had a heart attack. I traded the God's Gift ATR through a break-even/losing period of several months before a new equity high was reached. I was happy that I followed my plan and that I reached my profit target and I was even more happy about having defeated my own inner challenge of draw down survival. Understanding played an ESSENTIAL role here as I would have never done this without fully knowing what I was getting into. Definitely this is one of the main reasons why I consider understanding an absolute requirement for success in automated trading, at least for me it was.

Now after some time of achieving this ideal status where living from automated trading is a reality (and hopefully it will remain this way :o) !!) , I have a clear plan to deal with draw down periods and with my profit levels so that I can sustain the expected and worst-case scenarios of all the accounts I trade and manage without risking my living style. My plan has the following simple outline :

- Keep enough savings to live at least for 1 year without ANY income
- Always respect the worst case draw down scenario
- Always evaluate the extent and depth of draw down periods against the historical standards
- Keep living standards at 50% of expected profit level
- On every month, spend at most 50% of income, invest 25% (forex), invest 25% (other)

As you see my plan attempts to attack possible bad scenarios by making sure that I spend less than what I make, reinvest part of my income and diversify my investments. I always apply the Asirikuy mantra (understand, expect and evaluate) and I keep in mind that past performance does not guarantee future results and that certainly the worst case - even if unlikely - may develop. It is clear that every long or deep (or both !!) draw down period on any system is a challenge and the success or failure of a trader depends on how this challenge is tackled. If you tackle it with emotions and improvisation you will get financial ruin while if you tackle it with understanding and planning you will be able to make it to the other side.

As a person who is fully dedicated to the field of automated trading I can tell you that - for me - the hardest part of trading Asirikuy systems is the psychological pressure that draw down periods bring, a pressure that is always existent but that I become better at handling as I develop a better understanding of my automated trading systems, their draw down periods and the foreign exchange market.

5.3 The Reality is, Most People are Terrible Losers... Are you a Good or a Bad Loser ?

If you have read all the previous sections you may know that evaluating systems to understand draw down periods is one of my main concerns when using any automated or manual trading system. I have also written a few posts about the way in which the market limits the mass adoption of systems through the use of extensive and deep losing periods and I have also given people a few pointers - mainly based on true understanding of the trading strategies - so that they can survive these periods without simply using "faith" as a resource. However what I have found out is that the truth is quite simple : most people are simply very bad at losing and these makes them particularly vulnerable to fail in trading more than people who are "better" at surviving draw down periods. On today's post I will talk to you about the differences between good and bad losers and why people who do not become "good losers" are bound to end up failing in forex trading.

If you remember a few posts I wrote almost one year ago, I had started a project in which I attempted to train a few people to becomes successful at automated trading. As time has gone by (more on the progress of this project in a later post) I have noticed that their reactions to losing periods have been extremely negative and this often creates a quick aversion to the system they had been using. In general I believe that we - as humans - do not like losing very much and when this happens in trading we tend to look to change our system for another that allows us to profit without this bad side. Of course, most people believe that draw downs are inevitable but most believe that they can have extremely small draw down. Something which is also not possible.

This in turn leads people to get into systems that have very long profitable periods followed by extremely sharp and possibly devastating draw downs. This is why scalpers with large risk to reward ratios and martingales have such a huge fan base amongst new traders. These are systems that show very up trending equity

curves with just "a few dips". New traders bite on this quickly because they don't like the feeling of losing and therefore they tend to lean towards systems that make them feel like "winners" most of the time.

This is disastrous since as time goes by and traders see how their accounts start to grow, they decide to take a bigger risk which ends up with a quicker wipe-out (for martingales a wipe-out will ALWAYS happen, this is a statistical certainty). Being a bad loser makes you tend towards systems that stimulate your "greed side" less than your "fear side". The market protects itself by making long term profitable systems fear based and unprofitable systems greed based, pretty clever indeed :o).

For this reason being a "good loser" is a vital part of successful trading and in fact this is a characteristic I have found all the profitable traders I know share. A draw down period doesn't cause them to evaluate or modify their trading systems and they never lean towards trading strategies which are obviously unsound, despite how "good" the simulations may look like (which at a closer look are most of the time flawed to some extent).

Chances are that if you are in the beginning of your trading career you are a "bad loser". If you tend to be happy with winning trades and sad with losing trades, making your emotions inherently tied with your trading results then this is a behavior you need to change as soon as possible if you truly want to become a successful trader. The bad part for most is that this journey is not easy and may be easier for those who can listen than for those who are stubborn about some trading paradigm that is simply not true.

As I have said many times, the solution is simply to gain a true understanding and - as I highlighted on yesterday's post - to acquire a business outlook over your forex trading experience. If you are trading a system you do not understand PERFECTLY and you don't have accurate risk, reward and worst case scenarios then I have to tell you that you have a HUGE probability to fail with its trading in the long term. A draw down period will come and you will fail to interpret if it is too deep or too long and you will promptly modify your strategy or change your system completely. Such a way of trading is very prone to failure and the way most traders approach expert advisor and manual system development in the beginning.

So if you want to succeed in trading, my advice is very simple : you need to become a "good loser", you need to understand that draw down periods (long and probably deep) are a part of the trading experience and that dealing with them is absolutely necessary to survive this game. However leaving through them with faith is bound to have the same devastating results and only TRUE understanding of EVERYTHING you are doing is bound to give you any long term successful results.

5.4 Are there any Bad Market Conditions in Forex Trading ?

It is not uncommon for traders to refer to certain trading conditions as being "bad". In particular, during the past few weeks I have heard people calling current EUR/USD market conditions this way. Why do traders refer to some conditions as bad and to others as being good ? Is there an inherent quality of a given market that makes it good or bad to trade ? On today's post I will try to address this issue and explain to new traders why you cannot call any given market conditions good or bad since this makes no overall sense. I will attempt to explain why traders look into when they talk about market "quality" and why there is simply no reason why certain systems should be stopped under different market conditions as the future development of the market is never known with certainty. I will also highlight some example about the way in which this judgment is costly and many times makes traders lose significant opportunities due to the overall misconception that the market can be "bad".

First of all, we must understand the way in which traders look at market conditions and why some traders - usually inexperienced ones (no offense :o)!!) - judge the market's quality by calling it good or bad. The conception usually arises from the use of mechanical trading systems. When a mechanical system starts to fail under a given market condition, users of a system usually call the current market conditions "bad" and stop trading this mechanical system because it simply "doesn't work" around current market conditions.

There are several wrong things about this approach. Certainly we can say that market conditions were bad for a given trading system in the sense that it had a bad trading week, month, year, etc but we cannot know if future market conditions will or will not be favorable for a system. What I am saying here is simply that the fact that we cannot predict the future makes us unable to judge the currently developing market conditions as we have no idea of how the market will behave

with good certainty. Users of a given mechanical system that stop trading it during "bad" market conditions may be surprised when they miss substantial periods of profitability due to their deductions based on past trading.

An example of such a case is easily taken from most long term profitable systems. For example, a 1 month losing period may mean that market conditions were bad but to stop trading the system could mean that a very profitable period would be lost as market conditions develop. When people wait for market conditions to improve they may start trading their system when a good period of profitability has already passed. A real life example showing this can be seen with the Ayotl trading system. The system had some unprofitable trades in February and March but if you had stopped trading the system in April you would have lost an entry that granted a profitable trade of nearly 3000 pips, showing that although you can judge the quality of market conditions after they happen, attempting to forecast future conditions and modifying an automated trading system's behavior this way is nothing but detrimental.

In the end, in my opinion it simply makes no sense to attempt to judge the quality of developing market conditions as no one truly knows the way in which the market will develop. The best thing you can do is to build a trading system with limited market exposure that attempts to minimize loses when market conditions are unfavorable and cash on the market when market conditions allow it. In the end, the ability of a trading system to adapt to changes in market conditions and minimize its loses will allow you to trade it along very varied market conditions with confidence that your system will be prepared. Attempting to judge the quality of conditions that have not developed by calling them "good or bad" before they happen does not have a place in mechanical trading. My advice is to focus on limiting the market exposure of your trading system and increasing its adaptability.

5.5 Looking at Losing Accounts - 5 Tips to Get Through Draw Down Periods

I think that perhaps the hardest challenge successful traders must face is the losing account. All successful mechanical systems I know - and also most manual traders - go through extensive periods of draw down which can go from anywhere to a few months to a few years. Most people underestimate the difficulty of having

a losing account and having to look at its balance day in and day out. That red number screams "loser" to you and the mere act of opening up your account to trade becomes - sort of - torture. Through today's post I want to give you - fellow trader - a few tips to survive to those long and deep periods of draw down you may get into. I will give you some pointers that have given me the psychological strength to get through draw down periods and reach success in automated trading.

Picture yourself after one year of starting to trade your live account. You are currently at a draw down of 10% and you have been losing for most of the year, reaching the last equity high sometime almost 8 months ago. Looking at your account - which now reminds you of your 401K in late 2008 - is becoming difficult and you are seriously thinking about calling it quits and changing your strategy for a better one. Should you give up ? Should you continue ? Pay attention to the following tips to find out.

1. Ask if the current situation was predicted. The first thing you need to ask yourself is a very simple question. Do simulations or previous live trading predict this outcome ? If your simulations or your previous live trading predicts that you will be in an extensive and deep draw down period then there is no reason for you to panic since you are within a predictable scenario. This is part of your trading system's way of behaving.

2. Do not rely on faith. I simply cannot stress this enough but successful trading is not about having a successful strategy and trading it without any observation hoping that you will eventually go out of a draw down period. Some strategies do fail and relying on faith will only make you empty your account. Your best ally when it comes to dealing with draw down periods is NOT faith its actually knowledge. When you know your trading system and you have confidence, things will be MUCH easier to do.

3. Have a worst case scenario. All good strategies which have worked in the past may reach a level of draw down where you are not willing to trade them anymore. This is the reason why you always need to trade strategies taking into account that future conditions will bring you a draw down of about double the historically predicted. No only does this allow you to be much more conservative but it allows you to have a "worst-case scenario" you'll be able to handle. Also, don't be flexible with this outcome, if the worst case is reached, you quit trading that system and that's it. The system is too risky to be worth trading now.

4. Understand what you are trading. Maybe the paramount reason why people fail to follow long term profitable strategies is due to the fact that they don't have the necessary knowledge and confidence to go through draw down periods. Having predicted risk and profit targets before getting into any system is absolutely vital for you to succeed. Some people trade a given strategy for months without even knowing its risk and profit potential, a very dangerous thing to do when dealing with draw down periods is of immense importance.

5. Look and Analyze. I know that it may be depressing to look into a two year account which has had nothing but draw downs - something bound to happen with strategies such as the Turtle Trading System - but in the end this is something you need to learn to live with. Open your account, analyze what is wrong and understand why you have been losing. Analyze the predictability of this outcome and match it with your worst case scenario and understanding of the strategy. Ignoring your account and pretending the draw down does not exist is NOT a good thing to do. It is a practice - human but childish practice - which in the end will only lead you to a lack of understanding and willingness to pull the plug when you simply shouldn't.

So as you see, it is actually not very hard to know what to do to weather those draw down periods. In the end, what you need is simply to have a plan, understand it and follow it. You need to have clear profit and risk targets, a worst case scenario which account for worse than historical performance (of course, the future may be worse) and a clear mindset in which you understand that draw downs are real and you WILL have to go through them.

5.6 The Draw Down Obsession... Why Stubborn Systems are VERY Dangerous

On this article I want to talk about a different aspect of system design which concerns a current problem which has obsessed EA sellers and free EA developers and which seems to be the core of most system development being done. This problem, which is the obsession of programmers with the elimination of draw down periods will be the subject of today's post. Within the next few paragraphs I will talk about this problem and how it affects the trading system community by generating a series of "stubborn systems" which try to eliminate all market

exposure - making the problem in fact far worse - than for regular systems.

We all know that draw down is not a good thing. You wake up, you turn on your computer and you see that your account is down some percent of its initial equity. You are losing money and losing is not a good sensation, you feel like a downright loser, you feel that you are doing things wrong and you don't want to run this system anymore because you fear it may drain your account even more. The answer to this instinct is to look for systems which have the smallest periods of draw down and the longest periods of profitability.

However you have to understand that the market exposure of a given system cannot be eliminated magically mainly because the future cannot be predicted. So for any given system you make, you will eventually have to pay the price of being wrong when you think the market will develop somehow and it develops in another way. People then try to make systems which are what I call "stubborn systems" which are reluctant to let the market cash their market exposure. These systems may avoid taking losing at all (no stop loss), increase their lot size after losing (D'Alemberts, Martingales, etc) or aim to win very little each time so that the odds of winning are extremely low (very unfavorable risk to reward ratio).

The truth is that these systems WILL have a high like hood of starting at a profitable place. It is very likely that people trading these systems for the first month or two will have a very high probability of getting into profitable trades. Draw down periods will almost never happen or - in the case of systems which do not take an exit or SL - they will only happen once, when the account is wiped. Moreover, systems with very small TP and very large SL values with very unfavorable risk to reward ratios are likely going to give unrealistic profit targets in backtesting due to the fact that one minute interpolation errors and the lack of execution problems - which do exist in live trading - will embellish their performance significantly.

Draw downs are not something that can be eliminated or made "very small". All the successful systems I have known in my life have extensive and sometimes deep draw down periods which are extremely difficult to handle for anyone trading them, reason why confidence and understanding becomes VITAL when handling these systems. In fact, holding a small draw down for a long period of time may be hard for most people. Imagine waking up and looking at a 5-15% draw down every day for one year, how would you feel ? Most people would say "this doesn't work"

and they would archive the system when they probably don't even understand the system they are actually trading and its normal draw down / profit cycles.

I have found that this is one of the great defenses the market has towards everybody living from or using automated trading systems successfully. Stubborn systems do not work but they are the systems most people are most likely to use while long term profitable systems are extremely hard to use and very non-rewarding (from a psychological point of view) and difficult to trade reason why only very few people actually use them. In the end, the people who search for stubborn systems and neglect to accept the fact that draw downs - sometimes even extensive and deep - are necessary to achieve long term profits and sustained growth will not be profitable while the few people who can accept this fact will in the end achieve success (not easily by the way !). What did they say about that person who laughed last ? :o)

5.7 Trader Psychology : Being a Loser... Knowing How to Deal with Losing Periods

I wanted to write an article about one of the most critical aspects of manual and automated trading : the ability to deal with losing periods. It is very interesting how for most people (me included) it is extremely easy to deal with profitable periods but the instant that balance drops below the profitable margin we start to get into a psychologically different mood. Different people react differently to losing periods but usually the general reactions are the same. When facing loses, people start to make an incredible amount of mistakes in following their trading systems or methodologies. People trading automated systems usually take them off their platforms and start to search for new ones, people trading manual systems start to make very emotional entries with exceedingly high risk levels.

Definitely one of the hardest parts of trading is dealing with the fact that your trading is not perfect and the market is not always aligned with your expectations. Every trading system in the world will go through draw down periods and more often than not these draw down periods are extensive and will deeply test the psychological strength of the person trading them. Going into draw down is a natural consequence of trading and it should not affect the way in which you trade. The key is simply to deal with each trade as if it was the only trade you had ever taken. The burden of previous trade results should not put a strain on your

mind.

Of course, easier said than done. People find it difficult to follow a strategy which has been giving them loses mainly because they start to doubt the system they are trading. People wonder if the system will put their account into an infinite draw down spiral which will blank their accounts. Here is when confidence and knowledge become the decisive factor in the trading of systems and methodologies. Do really understand your system/method and its profit/risk targets ? Do you have enough confidence in your system to continue trading it despite the loses you are getting ? Certainly these are questions which a person should know the answer to if he or she wishes to be successful in trading. When you are in a losing period ask yourself the questions above. If you don't have the answers, then probably you should study your method or system more in depth or change to a system/method you truly understand.

I have to say that I've found that the ability to trade through losing periods without making changes to their trading methodology/system is one of the main reasons why profitable traders are profitable and people who lose end up losing their whole accounts. Profitable traders do not increase their risk level when they trade and they do not make emotional entries when they have their accounts in draw down, something which people new to trading jump to when the psychological stress of being losers starts to take a toll on their emotions. Remember, take each trade like if it was the only trade you had taken, manage all trades equally even if your in a draw down or profitable period. Keep you risk targets small and your risk to reward ratio favorable.

6 Understanding Indicators

6.1 The indicator series... Going back to the basics !

It has caught my attention that many of the traders that are involved with forex trading and particularly those involved with automated trading systems often have no idea of how an indicator works or what it is telling them but most of them rely on visually correlating some number being reached on the indicator when price reverses or some color changing on their screens to develop a trading system. I cannot stress how wrong I think this approach is to trading as it can lead to pretty disastrous merging of different indicators onto an unsound and unreliable trading

system.

For this reason, I have decided to start what I would like to call my "indicator series" posts which will focus on explaining the mathematical background and initial intent of the most common types of indicators as well as some particular examples of individual indicators. What I want to achieve with this is to give people a better knowledge of what indicators really mean and what useful information can be obtained with them.

Another interesting thing is that when you look at indicators in a mathematical way, it becomes more logical to mix certain indicators with others and to generate trading systems that are reliable, sound and very likely to work. I will try to go into the roots of the origin of the individual indicators and tell you what they were initially developed for, what combinations of indicators actually make sense and what information we can get and how we can use this information to develop good trading systems.

6.2 The Indicator Series... The Moving Averages

When I thought about writing a series of posts about forex trading indicators the first one to come to my mind was of course the moving averages. These type of indicators are quiet simple and almost anyone who has ever traded the forex market is familiar with them. For most people, the moving average is just a line that price should be under or above in order for them to exit or enter a trade. I now intend to analyze the moving average indicators with a little bit more depth so that my readers can have a better idea on how these indicators can be used and improved in order to trade market instruments efficiently.

So what exactly is a moving average ? Well, the moving average can be several things. A simple moving average is the average of some value of the last X candles, this last value can be the opening price, closing price, high, low or any other operation of price during that candle, like the median price. For example, an 8 period close simple moving average is simply the sum of the closing price of the last eight periods divided by eight. Now, this value is calculated for each candle and plotted on the screen giving us a moving average line on top of the instrument’s chart.

What does the moving average mean ? It is really just the average of price movement over the past X candles. Why is the strategy to go long when price goes above the moving average and to go short when prices go below the moving average ? This is because when price goes over the average of the past X periods it means that price is doing a "breakout" over it's previous average price, it certainly means that price is moving away from it's previous average values. This of course as you know, is a strategy that would wipe your account since moving average strategies would suffer from what most people would call whipsaws. That is, price tend to move above or below a certain average of previous prices only to return to the average because the average price after all, is the price the instrument has been traded for in the past.

Another important matter is the moving average period. How many periods back in time should we average ? 10,20, 4, 100 ? Well, the more periods you average the harder it will be for price to break over or under the moving average as you are taking into account a longer period of time. So for example, a 200 period moving average on the daily chart catches 2 to 3 year long trends and is therefore a powerful strategy by itself since prices tend to whipsaw little on such large timescales and periods.

The moving average, as you may know or have inferred by now, is a trending indicator, that is, it works very well when the market behaves in a directional manner because prices tend to stay above or below their averages during a trend. However, prices tend to cross their averages constantly during consolidation and ranging periods so you will lose money overall. How can you improve the moving average ? Is there a way to make it a better indicator ? With what other indicator can we pair the moving average to make a strategy ?

The first questions is probably answered with a little instinct. If we are guiding ourselves by the crossing of a moving average, it is an awfully lagging strategy since sometimes prices move away from their averages and when they cross back you are already a million years behind price action. What if we traded the derivative of the indicator ? That is, what if we traded the slope of the moving average instead of the actual crosses of the moving average ? For example, when prices are moving down, the average tends to decrease as each periods brings in a lower price, if we calculated the change of the moving average in time we could then plot an indicator that showed us if the change was positive or negative and we could enter a trade using this which would of course lag much less than the mov-

ing average. I am, of course, not the first person to come up with this idea and this is why the Trend Analysis Index Indicator was created a while ago. It plots the derivative of a moving average and gives you a much better sense to trading than the regular moving average indicators.

Systems with moving averages then have very strong limitations, by themselves, moving averages provide little potential for long term profitable systems unless long periods on large timescales are used, such as the 200 daily moving average system. If you trade any smaller scale, or try to scalp using a moving average (or several moving averages, being them weighted EMAs or whatever), you are absolutely doomed because the profitability of your signals will definitely change with time as the random events that generate price on the small time scales changes (and so will the crosses of your moving averages and therefore signals). This is why many people find that a great scalping system that uses a 5 min SMA is unprofitable but very profitable with it's signals reversed and then when they trade it with the reversed signals it kills their account because the market has changed again.

Moving averages however can be paired with certain indicators to enhance their performance. If you give it a little bit of thought several different pairing options appear. Moving averages only work on trending markets so you would need to find a way to filter markets where they will whipsaw, of course, there is no way to do this 100% but there are some indicators we can use to do this. For example, oscillators (next indicators on the indicator series of posts !) can be used for this purpose (again, more on this on the oscillators post). Also volatility indicators and volume indicators can also be used for this purpose. Trading moving average crosses on high volume is certainly a way to improve their accuracy since profitable trades with moving averages usually only occur when there is a large amount of volume in the market.

I hope this post has taught you a little bit about moving averages and how they can be used to effectively trade the market. Maybe this will give you a few ideas to further develop or enhance your current trading systems.

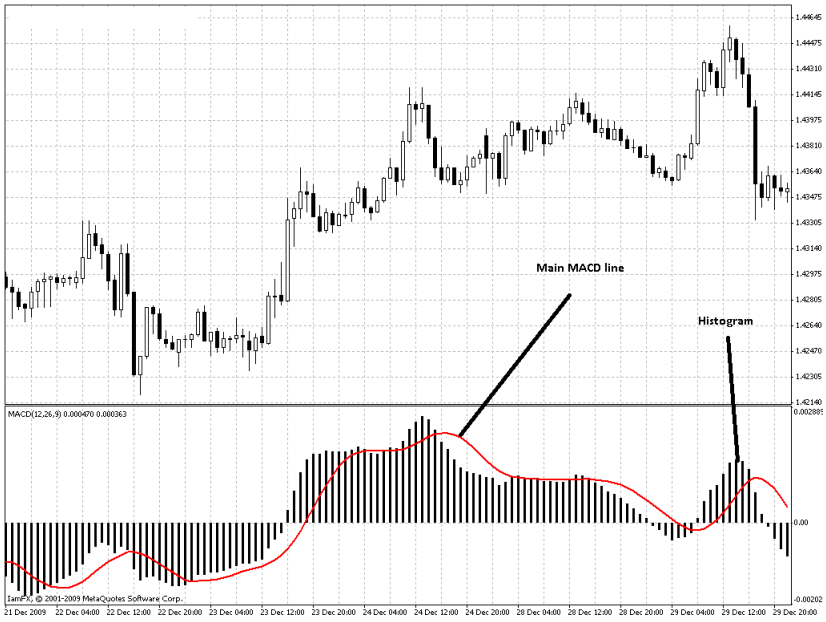
6.3 The Indicators Series : The MACD, the Market's Speedometer

Today's post will be a continuation of my indicator series of posts which try to explain the mathematical meaning of different indicators and how they can be used successfully to create sound automated trading strategies. The indicator series aims to make emphasis on the importance of understanding the nature of indicators to really know how they can be used successfully in trading. Success when using indicators does not come from just "blue line crosses red line" but from a true understanding of the underlying relationship between the data displayed and the price charts your looking at. This post will focus on the famous MACD indicator created in the 1970s by Gerald Appel.

So what is the MACD indicator ? The MACD, or "moving average convergence-divergence" indicator is nothing more than an expansion onto the idea of moving averages. The indicator has many components but originally Gerald Appel designed it to have only two : a main line and a signal line. The main line is the difference between to exponential moving averages and the signal line is an exponential moving average of this difference. The histogram, introduced in the 1980s in mainly the difference between the MACD main line and the signal line. The following is a small summary of the traditional setup (12,26,9).

MACD main line = 26 period EMA - 12 period EMA MACD
signal line = 9 period EMA of the MACD main line
MACD histogram = main line - signal line

But what does this tell us ? I usually look at the MACD as an expansion of the moving average concept. As I told you on the first post on the indicator series - which discussed moving averages - the difference between two moving averages could be interpreted as a sort of "derivative" of averaged price action : A velocity. This is why I usually think of the MACD as the market's speedometer. The MACD main line tells us about the velocity in which price is changing while the histogram tells us the difference between the main line and the signal line which is a measure of the changes in the main line or also a measure of the acceleration of price action (a sort of second derivative of price action). (on a small note, the MACD in mt4 does not display the signal line, only the main line and histogram, they might have considered the introduction of the signal line redundant as crosses between this line and the main line are signaled by the histogram crossing the zero line).



Traditionally the MACD is traded in different ways with most of them corresponding to different changes in price action. For example, a cross of the main line through the zero line simply means that the difference between the 26 and 12 emas is zero, that is, the moving averages are crossing. If you trade these signals it would be nothing different than trading a traditional EMA cross. You can also trade crosses of the signal and main lines which would mean that there is a change in the "velocity" of price action. That is, price movement in that direction is "slowing down". That would be the same thing as trading the cross of the histogram through the zero line, since the histogram signals the difference between this two lines. Now the best possible signals of the MACD would come from changes in acceleration, which would go before changes in velocity and would be the most early signals of the MACD. However the tops/bottoms of the MACD histogram are impossible to predict since usually several tops/bottoms can form before any meaningful change in velocity (a cross of the histogram through the zero line). An attempt to do this lies in trading the MACD histogram "divergence" signals with price, such trading is incredibly discretionary and not subject to automation.

Truth be told, the MACD, based on moving averages, has some of the same inherent disadvantages of these indicators with the advantage that the "speedome-

ter" feature of the MACD allows for better entries into the market. However developing an automated trading system using a MACD is not that easy. Usually the problem is that the MACD fails under even only mildly volatile markets due to the sharp changes in velocity that the indicator lags behind. The MACD velocity signals (crosses of the histogram through the zero line) would probably be the best and easiest to implement in coding but a lot of effort must be put in using adaptive money management techniques and exits on MACD signals from a MACD with faster settings which may be able to get the system out of losing trades quickly. Definitely exits will be the most important aspect of a MACD based system. A combination of the MACD signals is also not out of the question. Do you have any ideas for an automated trading strategy using the MACD indicator taking into account all the above ? Make sure you share them with us on the comments :o).

6.4 The Indicator Series : The Momentum Indicator

On the last post I wrote on the indicator series we discussed the MACD indicator and how it can be thought of as the "market's speedometer". Today we are going to talk about another very interesting indicator which tries to show us the prevalent direction of market change an instrument is going through. Within the next few paragraphs I will talk about the momentum indicator, its mathematical basis and some possible ways in which it could be implemented successfully in an automated trading strategy.

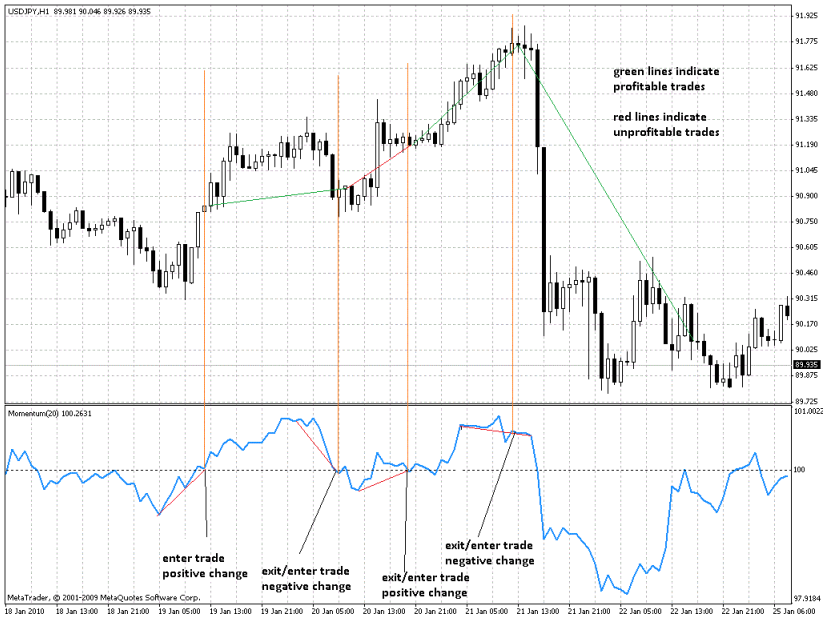
The momentum indicator is a very simple technical tool which tries to show us a comparison between the price of the current bar (open, close, high or low can be used) and the same price of a given number of periods in the past. The indicator is calculated according to the following formula :

Momentum = (Price of Current Bar / Price N periods)*100

As you can see, what the indicator does is merely a calculation of the fraction represented by current price of the price of N precious periods. By multiplying this fraction by 100 the indicator effectively represents a percentage of current price against previous price levels. This means that if we calculate the 14 period momentum indicator on close price and the value of momentum is 102 it means that the closing price of the current bar is 2% higher than the average closing price of the last 14 periods.

As you may see by now, the usefulness of the momentum indicator by itself is not pretty straightforward as you are only using information comparing the current bar to a given N number of periods in the past and you may get a lot of false signals just because price on the current bar is higher than average. The traditional way to trade the momentum indicator is to get into positions as the indicator crosses the 100% line which effectively indicates that current price is now higher than previous price levels, however this often leads to late entries since the momentum indicator gives a signal after significant movements have happened and therefore this approach is only profitable when price action is particularly slow.

There are several ways to deal with this problem to create a more profitable system based on the momentum indicator. Particularly we could base decisions on a derivative of the momentum indicator and enter when momentum starts to become positive. This will effectively get us into trades when the close of bars are becoming higher ignoring the fact that they may be above or below the average of the previous N periods. However the fact that the price of the current bar has heavy importance in the calculation of the indicator makes it a noisy one and the first derivative would have to be smoothed so that it didn't use differences between current and last bar values of momentum but the difference between the current and some N past bar. The image below shows a few trades using this concept.



If we follow this concept then it may become simpler to actually calculate the second derivative of momentum and simply enter or exit trades when the second derivative of momentum crosses the 0 line, effectively signaling that a change in market direction is starting to occur far before we actually see current price levels above or below the 0 line.

As with all the other indicators we have talked about, a successful automated trading strategy based on the momentum indicator will also have to contain sound volatility adjusted money management and adequate exit mechanisms in order to work properly.

6.5 The Indicator Series : The ADX, beyond a trend/range filter

I have to say that from all the indicators I have used in my career as a forex trader, the ADX (Average Directional Index) is the tool I dislike the most. The reason for this is probably because most traders have become accustomed to viewing the ADX as a range/trend condition filter when this is far from being an accurate use of this trading indicator. People who develop automated trading systems generally use the ADX to filter out trades (which I have learned is not a good approach) generating a global loss of statistical significance with a very small -if even present- improvement in profitability. On today's post I am going to talk to you about this indicator developed by Welles Wilder, I am going to go into its mathematical origin and into how it could be used successfully for the creation of automated trading strategies. As always the most important thing is to understand what the indicator is telling you and how this information can be used to exploit tradable market inefficiencies.

First of all, the mathematical calculation of this indicator is not as straightforward as others since this tool has many different components. The Average Directional Index indicator is made up of three lines called DI+, DI- and DX. The lines are calculated according to the formula you see below (where the true range is mainly the highest value between the averages calculated, include the average of the close prices (current close - last close) of the N indicator period):

DI+ = Average of X periods [Current High - Previous High]/(Average of X

periods of the True range)

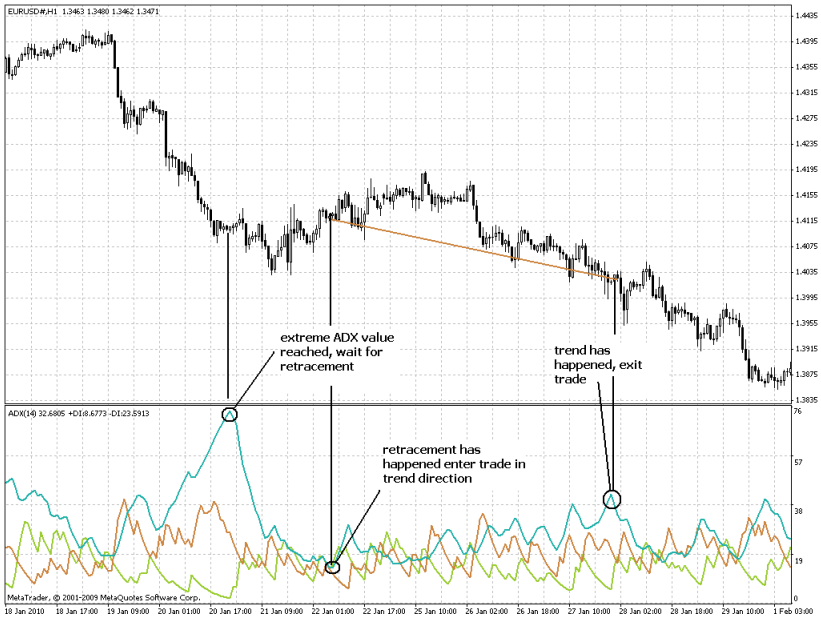
DI- = Average of X periods [Current Low- Previous Low]/(Average of X periods of the True range)

DX = 100 * ((DI+)-(DI-)/(DI+)+(DI-))

So what is the indicator telling us ? Mainly the higher the values of DI+ or DI- the higher the difference between the current and past highs/lows becomes relative to the largest movement observed within the current and last candle X period average. However note that DI+ and DI- are not normalized and therefore we can only interpret them relative to each other. A higher value of DI+ over DI- indicates that in average higher highs where achieved while a value of DI- above DI+ indicates the opposite. The DX - which is normalized - compares the difference between DI- and DI+ and tells us what percentage this difference represents from the sum of both indexes. The value of DX will be higher as the difference between DI+ and DI- becomes larger effectively showing that during the past X periods the market has shown a prevalent movement in one direction.

The fact that the DX value seems to be related with prevalent market movement then does not imply that we can define trends/ranges clearly from the ADX. There are two reasons why this is mainly not a good use of the ADX indicator. First of all, the DX line is comparative meaning that if we have a quiet market period with low volatility but a steady up/down movement the indicator may interpret it as a trend. The second problem is related to the fact that you would have to select a "level" to use as a threshold between "ranging and trending" conditions, something which cannot be easily done. Usually if you attempt to enter trades in favor of "the trend" when the DX value is high you will find that the trend has already happened and you are just entering too late.

The ADX indicator however can be used to detect retracements given the fact that it can detect when a weakening from a previously strong trend has happened. For example, if the ADX reaches an extreme value (indicating strong market momentum) we could simply wait for a weaker DX value and enter the trade in the direction of the trend when the trend has apparently "ceased". Of course, we will enter upon a retracement, within a very good position to take advantage of future movements. Such a case is exemplified within the following chart.



As you see, the ADX indicator can be used for this type of purpose successfully, not taking into account any range/trend filtering characteristics which are generally attributed to this trading tool. We take advantage of the fact that the indicator signals "what has already happened" and we use it to enter trades in favorable positions to exploit a tradable market inefficiency. Of course, developing a mechanical trading strategy based on this concept would require the development of additional closing criteria and trade analysis (to see which DX levels are adequate) but such an approach is bound to be a good start to develop a long term profitable strategy based on the ADX indicator.

6.6 The Indicator Series... The Stochastic Oscillator

Today I will continue my indicator series of posts (which had been a little bit neglected) with a post about the stochastic oscillator which is one of the most popular indicators out there which, by the way, is traded the wrong way in many cases. In order to understand how to trade with the stochastic indicators, what trading systems would benefit from it and which won't, we first need to take a look at the math that defines the stochastic oscillator.

The stochastic oscillator introduced by George lane, simply calculates where

price stands against the high and low of a previous amount of periods. That is, you can consider the stochastic oscillator value of as a measure of on what percentage of the range between the low and high of a certain period you are located. The equation that calculates this is as follows:

$$STS = 100\frac{\text{closing price} - \text{price low}}{\text{price high} - \text{price low}}$$

As you can see, the stochastic oscillator varies between values of 0 and 100 and as I said, tells you where price is in relation to a certain period's high and low. What does this mean ? Well, it means several things. Depending on the market conditions, the stochastic oscillator behaves differently. When the market is ranging or trending within a channel, the stochastic oscillator will forecast oversold or overbought markets as values near the high of a range are prone to be sold and lows are prone be bought. When the market is trending, things change a little bit since highs are pushed further and further up (lows the opposite) so the oscillator remains at high levels (low levels for down trending markets) all the time and people who are trying to treat that like an overbought or oversold market get killed because they are trading against the trend.

Since we would like to catch trend, which are the most juicy opportunities in the forex market we should only trade the stochastic when they are overbought or oversold that is, we must follow the reverse of the "traditional" stochastic interpretation. Of course, if you do this and the market ranges, you are always trying to get into a trend that just reverses because the market fails to breakout.

The stochastic has the advantage also of being a leading indicator since it gives signals before the trends actually start. So if you trade the stochastic oscillator with a reversed type logic and a trend following indicator, you might be able to get yourself a profitable system. Although, there might also be the need for the inclusion of volatility type filter and some other creative use of trend following indicators (more on this later !).

All this information about the stochastic oscillator really lets you see how you must know the mathematical basis of an indicator and it's true meaning in order to use it effectively in the forex market. As you can see, a traditional interpretation of the stochastic with a trending indicator makes no sense as they constantly contradict each other and you can hope for a break even system at best. Stay tuned

for the next post on the indicator series which will focus on the MACD, another very popular forex indicator.

6.7 Indicator Series : The Fractal Indicator

On this article I decided to continue my indicator series of posts with the fractal indicator instead of the MACD indicator which I had said I would continue with last time. The fractal indicator, which was developed by Bill Williams as part of his trading system, is a very interesting tool in trading and will be the focus of my post today.

What is the fractal indicator ? How is it calculated ? The fractal indicator is based on the formation of "arrow like" formations or "fractals" caused by a high or low being reached within a specific pattern within a certain candlestick formation. What the fractal indicators looks for to draw a fractal is a series of continuous highs or lows leading to a major high or low which is then retraced from by a series of higher highs (in case of a low) or lower lows (in case of a high). For example the following patterns would cause the formation of fractals :

Each line represents a bar of price movement : As you can see, the goal of the fractal indicator is to show "tops" and "bottoms" defined by the above close price patterns. However, also as you can see, the fractal indicator needs several bars to accurately show the pattern and no position should be entered before the fractal indicator has been drawn. The actual indicator in the metatrader 4 platform does not wait for the close of the last bar to show the fractal pattern so the indicator may show signals than then "disappear" if the last bar goes out of the fractal pattern when closing. This is solved by this fractal indicator which does not repaint and does wait for the appropriate closes before drawing the fractal.

Fractal indicators are useful in many aspects. They are commonly used as a way to look for support/resistance levels (several fractals are needed in order to confirm this assumption) and they are also used to measure a trend strength as the actual number of fractals broken by price gives a sense of "momentum". However, fractals should never be used by themselves as they often give too many fake signals and no systematic way to trade "bounces" or "breakouts" can be formulated. Often a computer attempting to elucidate support and resistance levels with fractals will see a lot more than what a human trader would see, leading to further complications of trading methodologies involving this approach.

However, fractals may be useful in automated trading as a means to define a "ranging market" when the market fails to "break" above up and down fractals and therefore remains in a sort of "channel". In my personal experience, the use of fractals in automated system is, to say the least, complicated since particularly volatile time periods usually generate a rather high number of "less meaningful" fractals which become a big problem when dealing with an automated system. However, combinations of the fractal and alligator indicators as used in Bill William's system, coupled with an adequate dynamic adaptive money management system may generate a profitable system from fractal trading. Any willing to give this a shot would be welcome !

6.8 The Indicator Series : Understanding Bollinger Bands

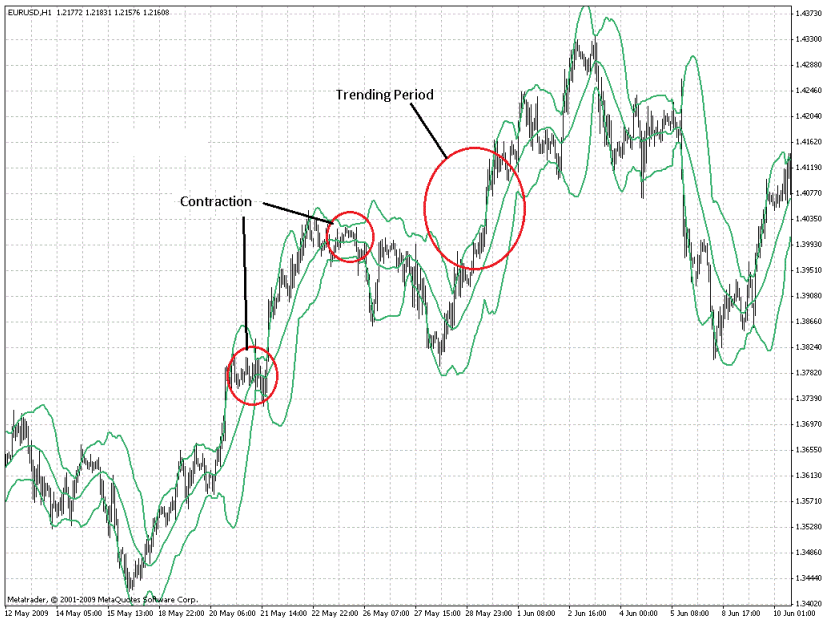
If you have been involved with almost any form of technical trading you may have heard and probably used Bollinger Bands. This technical indicator named after its creator - John Bollinger- became one of the most popular tools used by traders during the 20th century. Today I am going to dedicate this post to a description and analysis of this indicator and how it can be used to create successful mechanical trading strategies. I am going to talk about the calculation of the indicator, what it tells us about price action and how we can analyze it to find different types of market inefficiencies. As always the objective of this post will be to teach you how to understand this indicator better and how to design effective systems that tie its logical relationship with price in a rational manner.

So how is the Bollinger Bands indicator calculated ? This is one of the simplest technical indicators available to modern traders. It is formed by two parallel lines plotted around an X period moving average. These lines are distanced from the MA by a certain number of standard deviations. The value of the standard

deviation is calculated at the same number of periods as the X period MA. To sum it up the indicator is formed by the following line :

upper band = X period MA + Y times the standard deviation
lower band = X period MA - Y times the standard deviation
central line = X period MA

But what does it tell us ? The standard deviation is simply a measure of how much price moved away from its average. A high standard deviation implies that price moved further away from the central average while a low standard deviation implies that price remained more range bound and close to its average. When this value is low, volatility is low, when it is high, volatility is high. The plotting of the traditional Bollinger Band indicator with the moving average and standard deviation calculated on close prices over 20 periods is shown below. The upper and lower bands are placed 2 standard deviation measures away from the central line.



The problem now seems to be to find an exploitable inefficiency using the above indicator. We must therefore find a behavior related to the standard deviation that will produce a forecast of future market movements with a positive

mathematical expectancy over a long period of time. However when you attempt to do this you will find that most of your attempts will be frustrated by the fact that volatility related behavior - which is what the standard deviation of price tells us - does not appear to have a relationship with any particular inefficiency. In particular, attempting to capture volatility breakouts using Bollinger Bands is very difficult in forex trading and such a strategy does not hold a positive mathematical expectancy on most currency pairs.

Contrary to popular belief, there is also no clear statistical tendency when evaluating price "touching" the Bollinger Bands. If you attempt to create a strategy to profit from bounces from one side of the band to another you will find that profitable periods will exist but unprofitable periods in which the market will not bounce, but follow a particular band will happen. The same happens if you attempt to do the opposite. None of these approaches seems to give you a positive mathematical expectancy and in the end they do not lend themselves to the creation of mechanical strategies.

Is it not possible then to create a profitable system using this indicator ? Of course not ! Certainly there are ways in which this indicator might be exploited to give entries with positive mathematical expectancies. For example, statistically we might expect price levels outside the bollinger bands to be quite rare and in fact, significant price moves outside the bands might prove to be signals that price is moving decisively in that given direction. We could therefore use these signals to exploit both a short term retracement and a longer term trending movement, expecting price to return within the bands but to continue to move in that direction. Overall entry rules based on this approach have a positive mathematical expectancy meaning that they do provide us with a way to create Bollinger Band-based long term profitable systems.

As you see it comes down to understanding the meaning of the standard deviation and how price movements that are statistically rare can be exploited to signal - with positive accuracy over the long term - price movements in a given direction. Bollinger Bands are therefore a simple indicator that may not prove to be as useful as traditional technical analysis wants it to be, but it does lend itself to the creation of profitable strategies both on its own and as a compliment to others indicators as shown by the God's Gift ATR trading system. I am currently developing a few strategies based solely on Bollinger Bands. Will I succeed to make a long term profitable system out of this ? Stay tuned to check it out :o)

7 Trading System Design

7.1 Looking at the Future Through the Past : The Key to Successful Entry Logic Design

When you first attempt to design your own mechanical trading systems you often start with big questions about the way in which this is supposed to be done. The building of the entry logic - which marks the potential of a trading strategy (not its profitability !) - is quite commonly the first obstacle new traders find when attempting to develop a strategy. Generally people who aren't familiar with sys-

tem development will start to develop entry logic based on visual observations - without a true grasp of the underlying market- something which is bound to create significant problems and eventually lead the trading strategy to failure. On today's post I will be writing about how you should address entry development and how you should focus on the understanding of the currency pair and the building of causality chains so that you can truly build entry logic criteria that have a good potential for the development of a long term profitable trading strategy.

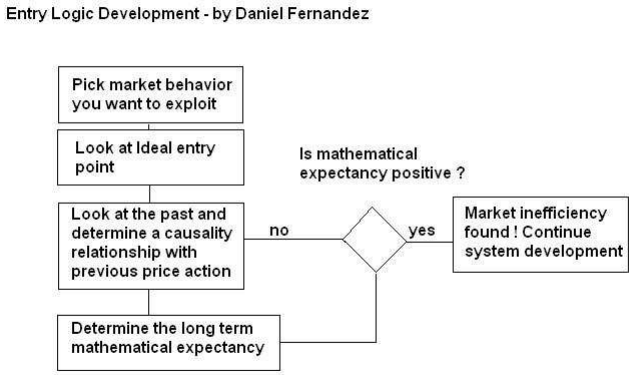
When you sit down and start to build the entry logic for your next strategy you have to think mainly about two very important factors. First, you need to think about the underlying market characteristic you want to exploit and second, you need to think about the chain of causality that is bound to bring your trades to exploit this desired characteristic. To do any of these two things, you require an understanding about the underlying price action characteristics of the instrument you are trying to trade. Aiming to do this without a proper understanding of the behavior of the instrument you are trying to trade will bring nothing but failure.

How do you start then ? The first thing you need to do is to ask yourself about the inherent characteristic of the market you want to tackle. For example, let us suppose you want to exploit hourly trends in the GBP/USD. After deciding you want to do this you then need to look for the "ideal trades" you would have wanted your system to get into, when you would have ideally wanted to get in. Once you know your ideal entry you now need to look into the past and see if there were any changes that pointed out that this would happen. This leads us to the second part, developing a sense of causality.

Everything that happens in our world has a cause and so do market movements. When a given market movement develops there is bound to be a cause behind it. By looking into the past and finding certain market behavior that signals that a certain event is likely going to happen we find ourselves with the goal of entry development, a market inefficiency. The idea here is to look at the past and see what particular price behavior has led to our intended ideal entry setup. Once you have pinpointed this past cause that leads to your ideal entry setup you can code the logic and do a mathematical expectancy analysis. As you see here, the key is to find a particular market behavior in the past which leads to a given outcome in the future with a high probability.

The thing you need to understand here is that a given cause is not always bound

to give the same effect because market behavior is almost never bound to repeat itself in precisely the same ways. What you are doing is building a "general case" from a very specific setup. Sometimes this general case assumption will not work since your logic "misinterprets" the current behavior as its "general case" while in other instances it will match and you will enter your ideal setup. This is what leads to market exposure and - when potential for profitability exists -to positive mathematical expectancy values.



Generally your general case will only determine the system's potential but money management (lot sizing plus exit logic) will finally determine profitability. Trying to modify an entry logic to achieve profitability is a wrong approach which usually leads to poorly built systems with very complex entry logic criteria that do not achieve long term profitability. Knowing the mathematical expectancy of your entry logic is vital for success since these data will tell you if there is potential or if your "general case" assumption simply does not work in the long term.

7.2 Five Common Mistakes in System Optimization

I believe that one of the most important aspects of system design and use is system optimization. This step in system design is vital since it allows us to adjust a given trading system so that it can more efficiently exploit the market inefficiency it is based on. When done correctly, the optimization of a trading system gives you a more profitable version of your logic with better profit and risk targets in long term performance and a very robust strategy which is not likely to fail even if market conditions change significantly. When done incorrectly, optimization leads

to curve-fitted systems which are "fit" to test profitably in the past but fail to profit in the same way in the future. What is the difference between correct and incorrect optimization ? On today's post I will talk to you about this very important aspect of system design and what mistakes system designers and traders usually make that make their optimizations invalid and the resulting trading system useless.

In the end, there is a good way and a bad way to optimize a strategy and definitely all systems can be adequately optimized if certain precautions are taken into account so that the most important "curve-fitting pitfalls" are avoided. I will now describe the five most common and dangerous mistakes made when optimizing and I will attempt to give some solutions to these very usual and sadly lethal blows to long term profitability.

1. Optimization period length. I think that the most common mistake when doing optimization is -without a doubt- the length of the testing period used to optimize. Strictly speaking, optimizations are not bound to be meaningful fit they are done within periods of less than 5 years given that smaller periods of time are not statistically relevant according to long term changes in market volatility. So if you want to optimize your system and avoid curve fitting, use a period of at least five years. Using a smaller period will most likely "fit" your strategy to very specific market conditions and will make it unable to perform correctly as the market changes.

2. Reliability of the simulations. It is very important to note that in order for optimizations to be valid, simulations need to be valid. Optimizing a scalper or a similar strategy which cannot be simulated accurately does not make any sense since the trading results - and thus the optimization results - are not going to represent live testing to any accurate extent. Designing systems that explicitly control one minute bar opening and that use adequate profit and risk targets - large enough to avoid interpolation errors - is critical for adequate optimization.

3. Ignoring the result's surroundings. One of the most important aspects of system optimization is to take into account the results "around" the most profitable result you found. For example, if the optimal value for an indicator period for your strategy is 20 when doing a 5 year optimization what happens when the indicator value is changes to 19 or 21, what about 18 or 22 ? It is very important to consider the surrounding since they give you an idea of the possible changes of profitability you will get if the market changes enough so that your "optimal" settings are no

longer that good. If your system is very profitable with 20 and then loses 70% of its profitability with 19, then the strategy is not robust enough and it IS bound to fail in the future as market conditions may drift - even if only slightly - from your set results.

4. Fine grid optimizations. Another common problem with optimizations is the use of very fine grids when optimizing. In general, the coarser the optimization the less risk there is to curve fit a strategy since the fitting is done in a "lose way" and results that may over estimate profits and underestimate future draw downs are also avoided to a good extent. In general you should not optimize to any grid lower than 2% and better 5% so if you are doing an optimization of a strategy's SL from 20 to 200 do not use steps smaller than 4 to accomplish this.

5. Re optimizing after Optimizing. When you optimize a parameter for given strategy, then optimize another one and then reoptimize the first one to the new profitable results you are most likely doing a sort of "fine grid" optimization in the sense that you are "fine tuning" the first variable to the second's "best results". This is similar to doing a fully correlated optimization (although less computationally intensive) but it has similar dangers in the sense that increased correlation and probably further curve fitting is introduced. My advice here is to only optimize variables from a first set of parameters in order and avoid re-optimization of a variable after it has been optimized once.

As you see, these common mistakes in optimization are made by most people who want to improve their automated trading systems and all of them are bound to generate very good results using optimizations that are possibly going to be an over estimation of profit and underestimation of draw down in the long term. In a future post I will give you a diagram for optimizations explaining a little bit how I optimize my systems and what "general procedures" I follow so that my systems end up being robust, profitable and with a high like hood of maintaining their risk and draw down characteristics in the long term.

7.3 Making Automated Trading Systems - 6 Tips for Successful System Design

One of the questions I get asked the most is how I come up with and design all my mechanical trading strategies. Several people have wondered how I device

my simple criteria for systems and how such simple logic can indeed be successful under today's ever-changing market conditions. However, what fellow traders often don't realize is that my system design is based on some very simple principles anyone could follow to achieve success in automated trading. On today's post I want to give you - fellow traders and system designers - some tips about system design so that you too can benefit from my experience around this area of successful strategy production.

Within the next few paragraphs you will find some very practical tips to help you with you design successful automated trading systems. I am absolutely sure that these tips will help you overcome some of the most prominent obstacles in automated trading, avoiding the mistakes that condemn most people who embark on this journey to failure and frustration. So how can you improve your system design and come up with better and more likely successful strategies the next time you design an expert advisor ? Keep reading to find out !

1. Understand what your system will attempt to do. Most people who attempt system creation often don't understand what their system will be doing. It is not a matter of saying "it will be making money" or "it will follow an MA cross", it is a matter of understanding what the system will attempt to capture and why it has a fundamental reason to work. Having an idea of how the market works and how your strategy exploits an inefficiency of the market is vital for success.

2. Everything must make sense. I cannot tell you how many times I have come up with people who want me to help them program systems that have a ton of indicators they don't even understand. In order to be successful, absolutely every single thing you add must have a reason and the reasons must not be shallow, like "because it filters ranging markets", they have to be clear and mathematically precise. Something like "this indicators helps me detect when price has moved in X direction because the indicator's mathematical meaning shows Y about price..." is more like it.

3. Analyze and analyze deeply. Often traders will attempt to design a system based on a few weeks of forward or live testing or even on just a few months of "visual" backtesting. I can never stress enough that analyzing and testing systems on a statistically significant period is vital for success. I always analyze systems for at least 2-5 years of historical data before I even consider the coding of strategies. Not only does this analysis provide me with information about the system but it also helps me understand the underlying reasons why it does or doesn't

work.

4. Do a mathematical expectancy analysis of the entry logic. When you are making a new trading system you always need to know if your expert has potential and what time frame and type of trade your system will be capturing. Doing a mathematical expectancy analysis is vital to get this information. This allows you to know for sure which time frame your system works best on and it gives you a good amount of information regarding the probable successful of your trading strategy.

5. Have simulation reliability in mind. When you are designing your trading system you need to do so with simulation reliability in mind. Being able to carry out reliable backtests is very important when evaluating trading strategies and taking into account this factor when you are programming your system is vital for success. If you program your system with simulation reliability as a main concern chances are that the results you will get will be much more reliable and consistent with live trading results.

6. Have adaptability in mind. Many traders decide to code their strategies with fixed exit target values (like fixed pip values of a TP and a SL) something which is bound to bring your systems to failure as different market conditions start to develop. Considering adaptability from the beginning and including adaptability within your mathematical expectancy analysis is important to guarantee the long term success and profitability of any trading system. If you look at systems that have been historically successful, most - if not all of them - use some for of adaptive exit.

I hope that the above tips help those of you interested in system design achieve better success in your quest towards the development of a useful trading strategy. Obviously there may be other aspects worth considering but this - in my experience - are the most important to know if you want to develop a successful trading strategy.

7.4 Steps to Design a Likely Long Term Profitable Trading System

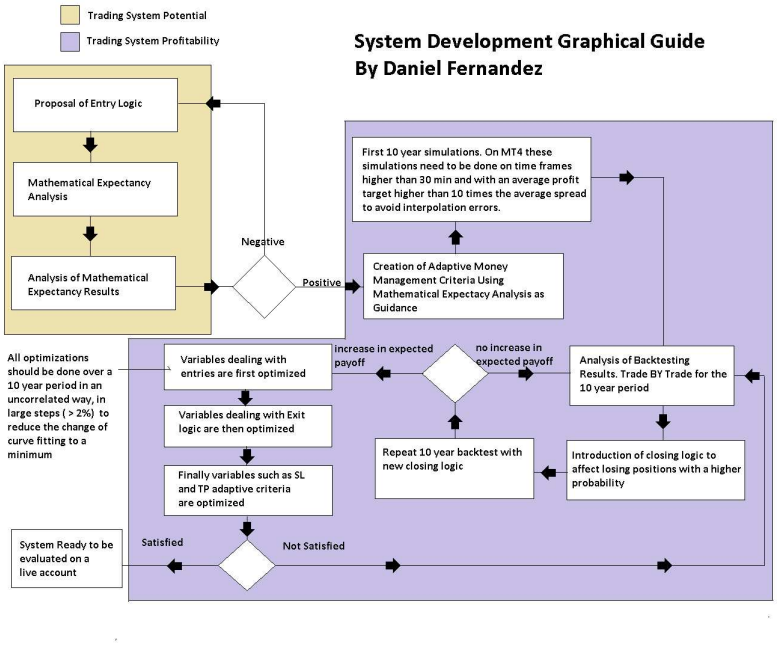
To tell the truth, making a likely long term profitable trading system is a very difficult thing to do. When you search on line for people who attempt to design profitable trading systems you will find that most of them don't have a mechanical, well-thought approach to system design and the final achievements are usually based on an initial "thought" based on repetitive and almost constant modifications to eliminate short term draw down periods which are natural to long term profitable systems. In the end, the result is a set of dangerous systems - sometimes without even accurate simulations abilities - that will put account equity at a very important risk of long term total loss. On today's post I want to write a little bit about my steps in system design and the main characteristics of my mechanical approach to sound trading system development.

So where do we start ? You will see that most traders who have never coded a likely long term profitable system will start by coding a given entry logic found on a forum or studied briefly through limited demo trading or visual backtesting. What they do then is assign a fixed lot size to trading and some given - almost always arbitrary - stoploss and profit target values with no particular extensive study. What you get then is a system that has no possibilities of success and which is flawed from the beginning since it has no adaptation, no real sound studies behind it and simply not enough focus on money management (which is lot sizing plus exit logic). This is revealed when traders start to put these systems to the test but instead of looking at the development process as a source of the problem they usually end up adding unsound tactics - such as martingales - over optimizing their exit values, adding complexity to the entries and other things which in the end lead to the generation of a system - which is simply - very bad.

First of all, there are probably many ways in which successful system design can be approached. I am going to discuss mine because it has worked for me and has led to the generation of many long term profitable systems but you should use my approach only as a guide to develop your own way of tackling the system design problem, as something different may work better for you.

What are the necessary steps to successful system development ? I have prepared a practical diagram (click to enlarge) showing you graphically the process I take in order to develop trading systems - including all those within the

Watukushay Project - and all other experts. You will see that the first step I take is a design of an entry logic followed by a mathematical expectancy analysis which defines the trading system's potential. If the mathematical expectancy analysis is not positive, then I modify the entry logic or the evaluated number of periods and time frame until I am able to achieve a positive value. Most people would be surprised to know how little importance the entry logic actually has as most entry mechanisms have some degree of positive mathematical expectancy on different time frames or periods. The problem with the usual system development tactic used by most new traders is that they don't do a mathematical expectancy analysis at all, therefore, they truly don't know the potential of their system or if it is being used on the adequate time frame or if they are targeting adequate profit and loss values per trade.



After doing this analysis - and having positive results - I continue to develop the system's money management which will be the KEY to the system's long term profitability. Using the previous mathematical expectancy analysis I figure out what exits (as adaptive TP and SL) and what time frame will be the most beneficial to my system, always taking care to use time frames and profit targets to preserve the reliability of the simulations being done. Defining an adaptive lot sizing technique which modifies positions against both balance and volatility is

also vital to ANY trading system's long term success. Many people underestimate the HUGE importance lot sizing has, having a fixed lot size or adapting lot sizes against a fixed percentage of account balance is a death sentence for most trading systems.

The next steps are probably the most important and the ones new traders and most designers never do. You need to do a 10 year backtest and then a TRADE BY TRADE analysis of the results to design adequate internal exit logic mechanisms to increase the profitability of the systems. After you introduce a new trading logic you need to check if the expected payoff (which measures the relationship between profit and draw down) is increased. If it is not, then you need to go back to a TRADE BY TRADE analysis until you come up with a logic that works.

After you find a closing logic that increases the expected payoff you need to optimize variables in an uncorrelated way - one by one - with large steps to prevent any significant curve fitting that may happen (some variables however, like the SL and TP adaptive criteria, may be optimized in a correlated fashion). After this is done you need to evaluate your results and ask yourself if you are satisfied with the draw down and profit targets of your system. If you are, then you are done. If you are not, then you need to go back and analyze TRADE BY TRADE a 10 year backtest to come up with other closing mechanisms to increase profitability.

I believe that this approach, which attempts to increase system profitability through analysis and sound development is incredibly powerful at generating long term profitable systems. Usually people focus way too much on the potential of the trading strategy - the development of entries - when in reality very simple entries have very good potential and only the development of adequate exit mechanisms really guarantees that large profitability levels are achieved. If you see the graph, most of my efforts are around the development of profitability as only the initial mathematical expectancy analysis is devoted to potential.

In the end, profitable system development is NOT easy and requires many hours of hard work and development. Each analysis of a 10 year backtesting result can take me hours - sometimes even days - of work but in the end this analysis is absolutely necessary as it gives me the understanding necessary to implement good exit criteria that will bring my systems to new profitability levels. All this effort that goes into development also allows me to deeply understand my systems and trade them with confidence under very varied market conditions.

The above way of developing systems has allowed me to develop several expert advisors which show success on 10 year backtests and also on live trading accounts, adapting to changes in market conditions and tackling true market inefficiencies.

7.5 Mathematical Expectancy of Entries... A Basic Powerful Concept in System Design and Development

Mathematical expectancy is a very important and useful concept which many people seem to be unfamiliar with. The objective of this article is to talk a little bit about the concept of mathematical expectancy and its usefulness, pointing out why it is such a fundamental and useful tool in the development of long term profitable trading systems and a key step in the evaluation of any given entry logic. I will start the post with the definition and purpose of mathematical expectancy and I will then continue with some examples and concepts which will show you why the analysis of mathematical expectancy is extremely important and a necessary step in the design of any given trading system.

Many of you may have wondered how successful traders come out with a good entry logic for their trading systems, being manual or automated. How can these people know the chances of success of a given entry logic and use it within their system development ? Many people who are new to automated or manual trading usually have an over-focusing - with little analysis - on the entry logic completely neglecting the development of the money management part. Not only does this pave the way towards the development of unprofitable systems but it doesn't help that the way in which the entries are developed is non-systematical and statistically not rigorous. usually you'll find that people develop a given entry logic based on visual observations of a VERY limited number of market situations and then modify the entries in forward/live testing as they fail under current conditions. This speaks about the lack of knowledge of this novice developers and the way in which they view market and long term profitability.

A simple question then arises. Is there a way to systematically evaluate different entries to know which entry is better, which time frame is better and what exit strategies may be more suitable ? The answer comes in the form of mathematical expectancy analysis- an absolutely simple- yet absolutely powerful technique

which allows you to evaluate the POTENTIAL (different from the profitability which comes into play when money management is implemented !!) of a given entry logic. So what is exactly mathematical expectancy and how does it play a role in system development ?

The mathematical expectancy analysis is simply a technique which allows you to know the extent to which the market is bound to move in a certain direction after a given entry is taken. The analysis is fairly simple, you mark every entry for a given logic on a chart and then you mark a set given number of bars into the future. So for example, if you want to evaluate the mathematical expectancy of a moving average cross on a 10 bar period you simply mark each entry and then you mark the tenth bar after the entry. After doing this you determine the high/low of this ten period after the entry. This gives you the maximum the market moved in favor of your entry and against your entry during this period. When you do this over a very large sample size you can determine the average movement in favor and against you and you will be able to tell if the mathematical expectancy of your system is positive or negative. This marks the potential of your entry.

This analysis is very versatile and very important. By changing the number of periods in the analysis you can see if your strategy is better at capturing short or long movements and what timeframe fits your strategy best. For example, some systems may have negative mathematical expectancy on a small number of periods while the mathematical expectancy may be positive under larger periods meaning that the system is better fit at capturing long term movements than short term movements. This analysis also allows you to design appropriate exit techniques for a given entry logic since you know what the average movement against and in favor of your entry is you can calculate an adaptive SL or TP such that in average you will hit the TP and miss the SL.

It is of course terribly difficult to explain all the aspects of mathematical expectancy within a single post reason why I only meant to give a small introduction to the topic within this post so that people interested in system design may know that this technique exists and has a paramount importance in the development of a system's entry logic. Within my website - in Asirikuy- I have made several videos explaining both the theory and practical aspects of evaluating mathematical expectancy over a 10 years period, in addition I have also coded an EA to allow people to evaluate any given entry logic . If you aren't interested in Asirikuy then at least you now know this tool exists and you can either make your own EA to

evaluate this aspect or you can do your own research to find more information on the subject :o).

7.6 Reversing Strategies... It Almost Never Works !

It is curious how many times during the past few years I have read posts from people in forums or people in other websites asking for a "strongly losing" trading system. It seems that many new traders have thought that given the fact that building a long term profitable system is so difficult it might as well be easier to find a system which is "long term unprofitable" and reverse the logic to get the valuable profitable results. Within this post I will tell you the reasons why this logic is inherently faulted and why reversing a trading system's logic almost never leads to a profitable system. You will see why a logic reversal does NOT imply that all trades are triggered in the opposite direction and why it leads, 99% of the time, to another unprofitable trading system.

To understand what happens when you reverse a system, it is vital to understand trading to a good extent. When you have a logic that buys at A with TP at B and SL at C and the SL is hit, then many people tend to think that reversing the logic to sell at A, with TP at C and SL at B will get them a profitable trade. This assumption is wrong. Why ? The problem is that when you buy at A you are buying at an asking price so selling at A won't happen at the same time because a short trade must be entered on a Bid price which will reach A at a different time (or not at all). The same applies for the SL and the TP. The fact that B was reached as a Bid price does not imply that it will be reached as an Ask price. So effectively reversing the logic can cause the system NOT to reach the same SL and TP values, causing the effect of a reversal to be an overall change in logic which may not correspond to a positive change in profitability.

However the Ask/Bid differences only amount to be a part of the problem. The second part, which is the most overlooked by many traders when they are presented with the "long term unprofitable system" (a system with a 10 year down slopping equity curve) is that the losing character of many of these systems which have "smooth losing curves" is caused by the spread. For example, a system may be losing globally because its TP and SL are too close to the market spread and therefore the system loses money independently of the trading logic (something which many coders which attempt to code scalping systems fail to understand), reversing the logic does not cause any improvements in profitability (because the

spread is the same on both entries).

Even if most reversals do not have any positive effect, it is true that the reversal of a long term profitable trading logic will generate a "long term unprofitable" system, however, such systems must be geared so that the above mentioned problems are not important. What people tend not to realize is that coding a "long term unprofitable" system which is NOT so because of the spread and which upon a reversal will not be significantly affected in an unprofitable manner by Bid/Ask differences is JUST as hard as coding a long term profitable system in the first place. Many times people believe they have such a system but they fail to realize that backtesting of a system to see if its equity curve is "smoothly losing" must be done in six month increments (rather than in a straight ten year test) due to the fact that the lowering of equity would cause profitable periods later on in testing to appear insignificant, when the logic reverses, these periods show to be extremely losing. The lot sizing characteristics of a trading system which are made to lower loses and increase profits may indeed make the finding of such a reversible system MUCH more difficult.

I strongly believe that the failure most programmers and traders face when trying to code long term profitable automated systems is mainly because they are NOT approaching the problem in the right way. They almost always fail to understand the indicators they are using, they fail to add adaptability to their systems, adequate money management, etc. The solution is not to attempt desperate things, such as the finding of systems with 10 year smooth losing equity curves but to build an understanding of automated trading and what has to be done to generate long term profitable systems using sound strategies, this of course, comes only as a consequence of gaining an understanding about trading which requires a lot of effort and study.

7.7 The Truth is... There is No Insider Secret

I have seen time and time again that manual and automated forex system sellers always try to push the idea that people’s lack of profitability is not "their fault" and that the problem is that the evil "gurus" and "insiders" are keeping secrets away from the masses so that they won’t be able to ever make a dime in the financial markets. On today’s post I will talk about why there is actually no such insider secret and why the failure of most people to gain profitability in the markets is actually dependent on each individual trader and the way she/he deals with the

world of trading.

The first question we need to ask ourselves is : Is there a secret to profitable trading ? Is there a reason why profitable traders earn consistent profits in the market when the majority of new traders fail ? Is there a "secret" ? Is there something that if you know could bring you all that profit ? The truth is that there is no such insider secret. Talk to successful traders, read interviews from profitable traders, ask anyone who has proficiency in the financial markets and you will get the same answers.

There is no holy grail and no insider secret. What is the reason why most traders fail while these professionals make a profit ? It is hard work, knowledge, confidence and consistency. Do you think that fund managers and profitable traders just got a letter saying "the big secret" and then became profitable ? Obviously this is not the case ! In order to achieve profitability one has to put forward a huge amount of work and effort, profitability does not come by itself and it is a long way to actually be able to get your first profitable year in trading, an extremely hard way which will hold almost no rewards (in profits) till you begin to see the light near the end.

The fact is that if you want to succeed in this area you need to really build all this knowledge for yourself. Truly there is nothing anyone can tell you that may make you profitable from one day to another. You can take seminars, courses and do whatever else you want but in the end you will need to take everything that other traders give you and discover it for yourself.

You need to analyze the markets, practice your trading, come up with your own setups and methodologies, etc. Using the knowledge others can give you is useful but you will not be able to truly achieve profitability until you are able to get all that knowledge and understand it in its fullest through your own personal analysis. Always strive to understand everything you learn to the smallest detail. As I said on yesterday’s post, confidence, not faith, will make you a profitable trader. For example, don’t just learn "a move above the MACD 0 line is bullish", learn what the mathematical basis of the indicator is, what is the cross of the 0 line saying in a mathematical and trading sense, what does this tell you about the market ? Ask as many questions as you can about everything you read and find the answers !

The fact is that most people do hard work in the least productive way, going through an endless search for a holy grail system or strategy when their efforts would be much better spent in learning to develop profitable trading systems by themselves. In my mind I believe that people have the power to decide which way they want to go and it is definitely each person's decisions what determines their final outcome in trading.

7.8 Intelligent Trading : Answering Every "What if"

I believe that the worst characteristic a person can have as a trader is unfounded optimism. When I started trading I possessed this very undesirable character trait and it took me a long time to get rid of this pest that would keep profits away from my account. It is very easy for traders -especially new ones - to get lured into believing simulations or past live testing results and jump into systems with high risks believing that a certain scenario will not happen. I cannot tell you how big a mistake it is to ignore every possibility and to act on faith and hope. Time after time I have seen traders do this and get burned in the process with their hopes in one hand and their empty accounts on the other. On today's post I want to talk to you about the great importance of the "What ifs" of trading and why it is important for you to answer every possible "what if" question you can ask until you are satisfied with every answer.

One of the most vital things when you want to succeed at something in life is definitely preparation and trading is simply not the exception to this rule. Often people will venture into trading manual or automated trading systems with little preparation and without a good plan for every possible outcome that can arise. The truth is that most people who attempt to succeed at trading with expert advisors don't even have a clue of what they do if certain scenarios arise and in the worst cases they consider some scenarios "extremely unlikely" or "impossible to happen".

I remember clearly how a person told me a few years ago that it was "almost impossible" that his Martingale system would get 7 consecutive loses since such a market situation was simply extremely rare and such a case would never appear. I told him that every time a trade is entered the possibility to lose exists but he continued to tell me that it wouldn't and that I was simply "not understanding" the nature of his system. The years passed and his system did trade profitably for a while and after a year or so of trading it took 8 consecutive loses and wiped his

account clean. It was not the fact that the consecutive loses happened what killed my friend's account, it was the obvious lack of preparation for such a scenario.

This happens all the time. People trade systems believing that a certain "what if" question does not deserve an answer because it is simply "extremely unlikely" when the truth is that the mere possibility of it happening should make a trader have a plan against it. If you are trading a system believing that A or B or C won't happen then you are setting up yourself for disaster. Every unanswered "what if" question is a void in your system, a void that will one day be filled, catching you completely unprepared for the consequences.

I always answer any possible question about a trading system - especially losing situations - so that I can avoid having a situation where I am simply caught with no answer. What if system A has 6 consecutive loses ? I will suffer an X draw down and the system will be Y% away from a worst-case scenario. What if a draw down level of X% is reached ? I will stop trading the system since it is below the worst-case scenario which is double the max draw down inferred from reliable simulation results, etc. One of the things I have found helps me keep up with my systems and maintain my success as a trader is to ALWAYS have a plan. The most important part of doing this is to answer EVERY "What if" question you can think about. What if you have 5 consecutive loses ? What if you have a 2 year draw down ? What if... What if ?

As you see, one of the most important parts of success in trading is nothing more than preparation. Knowing the answer to every possible question about your system and having a plan for every possible trading outcome is vital for you to achieve success. There cannot be a lethal "What if" question. If there is any of these questions that ends in "I would lose my account" then there is something inherently wrong with your trading strategy, as a safety every system must be able to give signals of "being too risky and not worth trading" before reaching a wipe out status. For example, a system with a worst-case scenario of 30% will be stopped at this equity level, preserving the other 70%, while a system that wipes the account at 5 consecutive loses simply has no such "time" to warn its user about a problem before it is already to late. Hope for the best. Prepare for the worst.

8 Where can I Learn More ?

If you have liked the material within this ebook and you would like to learn more about automated trading please feel free to visit my blog at fxreviews.blogspot.com, the blog features free daily articles in which I discuss relevant aspects of automated trading in the forex market like the ones you have read within this ebook. There are also many great articles on the blog that didn't make it to the ebook so feel free to visit the blog's archives to get more interesting articles about automated trading and general aspects of the forex market.

If you want access to more content and to a full education in the field of automated trading please consider joining asirikuy.com. Asirikuy is a website I created to teach people how to succeed with automated trading systems in the forex market based on a sound education that teaches people everything from the design to the programming of automated trading systems. The web site also contains more than 25 live accounts showing real money results of all the systems I have created plus more than 24 hours of educational videos and the full source code and video logic explanations of all the systems I have coded with long term profitability in mind. If you would like to get a full education in automated trading and achieve success through adequate learning and understanding then you will definitely enjoy this website (remember that the subscription is only 30.12 USD for the first month and then 7.21 USD for each month after that).

9 Finally...

Thank you very much for reading my free ebook about automated trading :o) Hopefully after reading this ebook you have achieved a higher level of understanding about automated trading and how you too can achieve long term profitability using automated trading systems. Please remember to visit my blog at http://fxreviews.blogspot.com or asirikuy at http://www.asirikuy.com if you would like to have access to more content.