

## The Holy Grail

It seems, that to be a Forex trader also means that one is on a grail quest. Ever since the Forex market was open to limited capital individuals there has been the search for the perfect trading program or system. The problem is that no one knew what the holy grail of Forex trading would look like and the search became isolated on finding the one EA that would do it all.

Likewise, almost every trader has said the words, "I know there is no holy grail but..." Why do we think it prudent to deny our quest? Why have we changed the search for the grail to one of looking for a good EA. In this paper, we will take a different path to uncovering the grail but in doing so we will discover that the grail doesn't look like what we thought it would. Undoubtedly there will be some that will disagree that a system that doesn't ... (fill in the blank) shouldn't be called the holy grail. I will not argue the point but will instead define for the purposes of this paper the quest as being one that looks for a system that will trade without loss.

We also will define an EA (Expert Advisor) as a computer program that does trading, and a system as the rules that is used by the EA or human by which a profit or loss is made when trading. We are drawing a distinction between the Program EA and the system that it uses. While I have a problem with the statement that "there is no holy grail", we do agree that there is no perfect system that a human can use that can't be emulated by a trading program. The problem is in the system. We can therefore ignore the EAs for the moment and focus our attention on the systems.

Up until now, traders, instructors, brokers and so on, always taught that there were only two types of trading systems; the first being built around fundamental analysis and the second one being built using indicators which we call technical analysis. Both of these systems try to forecast the future by using past results. Even the government knows that this can not be done and insist that anyone dealing with trading in their ads include the statement that "past results are no indication of future earnings".

Why is this the case? Because nothing happens in isolation. There are always other circumstances that effect the outcome that can not be taken into consideration when making the prediction. If we are to accept that there are indeed only two methods of trading then there can be no holy grail. Perfection can not be derived from imperfection. No one can predict future events with any clarity. So if the holy grail does exist, it has to be found in a third, here-to-fore undiscovered trading method. This new trading method would have to be built around something perfect. This method would have to be built with mathematical precision and of course the only thing known by man to fit this description would be mathematics itself.

It really doesn't require much for the system to be perfect for our needs. If the system loses money then it isn't perfect. It has to be true for all lengths of time. You could not say that it makes money all the time if time was defined as a fixed length. As an example if you started with \$100 and gained \$300 but then lost \$200 for an end profit of \$100, it wouldn't be perfect because it could have also lost the \$200 first and you would have margined out. Which brings us to the second criteria which is "that it will protect against a margin call". Mathematically written using words instead of symbols, is that the balance  $>$  (is greater than) the sum of all the open trades for all points of time. The balance can change but since the price does change the value of the trades will also change. So long as for every instant of time the Balance remains greater than the sum of the Trades then you won't have a margin call and that part of the criteria for a perfect trading system or "holy grail", would be met.

We take it as granted that the fundamental reason for any trading system is to be able to pull profits from our trading endeavors. If the system in question had losing trades at any time then the you could never count on being able to remove money from the account because those funds may be required to keep the balance-trade equation true. Beyond that we can not set any minimum profit margin as each person is different and has different demands. Therefore it can only be said that it must make a profit and not a loss over some period of time. Now we may prefer a system that makes more than another, however if they both met the criteria established then they could both be called the holy grail. This must be the case because preferences are emotions and emotions are subject to inconsistencies as they differ from person to person. Once we accept this definition then we can quickly see that the holy grail is in the money management aspect and not so much in the different types of trading.

This is why we have been missing it, the holy grail didn't look like what we thought that we were looking for. I suggest that the holy grail looks instead like a money management system.

Next, I will describe the first of such systems based on mathematics instead of prognostication but no doubt there will be others. As this one is the first, it will be the gold standard by which the following systems will be measured against. Therefore, needing a name, I have called it the Gold System.

If we take a graph of any currency and find the high and low then subtract the low from the high, we can find our total range. It's not that the price can not go beyond the historical highs and lows but that it would not make much sense to trade beyond those points. In fact most of the time the price will be within 60 to 75% of the center point. The center point can be either the mean or the average as they should be fairly close to the same point but the mean is more consistent and is certainly easier to calculate. Add the historical high to the historical low and divide by two. This is called the mean but we will refer to it as the center.

We are not fortune tellers and don't know which way the price will go beyond an educated guess. When we open a trade, the profit /loss indicator may go negative. These are not losses, only open trades. The profit loss indicator only tells you what you would gain or lose if you closed the trade at that one point in time. This is how we tell when to close a trade, not anything about the trading system or whether we're making money or not. An open trade is just an open trade but just as it tells us when to close a trade, it also tells the broker when to close the trade. The broker will close the trade when the equity gets lower than the margin. (A quick definition for any who may need it, the equity is the amount that the broker would give you if you closed your account right at that moment. The margin is the amount deducted from your equity when you open a trade that is kept in reserve in case the value of your equity were to drop to a point where you would otherwise owe the broker money.) A margin call is when the broker closes the trades in your account, which is always at a loss to you. To have a perfect system the amount in the balance would only have to be sufficient to keep the equity from going below the marginal reserve (margin).

The Gold system divides the total range that the price has ever visited into smaller tradeable ranges. The rational is that we can certainly calculate what it would cost us if we had bought .01 standard lots at the highest point that the price has ever reached, then closed out the trade at the lowest point that the price ever reached. Plus we would have to add in the cost of the margin and put that amount or more into our balance so that no matter what the price was, the balance would always be greater. Further we could set our pending order to sell .01 lot when the price reached the historical high and close at the historical low and buy at the historical low and sell at the historical high. There would not be many trades opened and closed but unless the economies of the countries whose currencies that you were trading completely crashed, you would not expect to see the price go twice the historical distance.

Situations that would cause that kind of a movement could not happen without somebody knowing about it. The first money management guideline then would be to only trade large stable currencies. Movement we don't care about but crashes, we do. If any of the top 10 currencies were to crash the whole world would follow in time and all trading would just about cease. As I write this, poor banking practices in the US have destabilized the housing sector which in turn has caused the stock markets all over the world to flutter dramatically. This has caused national banks to react and vary the interest that they charge and pay on their money which effects the value of the various currencies on the world market. If any of these major currencies were to collapse there would be a domino effect that would sooner or later effect the entire world. The Gold system is still a trading system and whether or not it should be considered a holy grail should only be judged in the framework of trading and not on a possible geopolitical collapse.

Given that, then we can see that by using only one range that covers the entire spectrum of historical prices plus a little more then we could never have a margin call. As already mentioned there would be very few trades taken but the ones that are taken would be safe. We could increase the number of trades by making the range smaller and centering it on the center of the full spectrum. There would not be as much profit per trade but the number of trades would increase the total profit. But rather than just wait until the price returns to the center, we could have several ranges that butt up against each other to form a trading grid. We would have to treat each range as a separate system and maintain enough in the balance to cover each separate trade that belongs to each range.

To illustrate this let's assume our total range or "full spectrum" of prices was 1000 pips. Definition: a pip is the smallest amount of price change made by a currency pair. Let's also assume that we made 10 sub-"ranges" that opened and closed each its' own trade, laid out so that it covered the full spectrum. To find out how much money would be required in the balance to make sure that it is greater than the accrued cost of each range we would just add all of the trades together. If .01 standard lots changed by \$.10 for every pip then each range would make a 100x \$.10 or \$10. It would also cost \$10 when the price went the other way. We would have each trade do a buy on the lowest price of its range and close at the top then sell at the top so it can close when the price hits the bottom of its' range.

If the price always kept oscillating back and forth across that one range, no one would need any indicators or fundamental analysis they would just set the trades and close them at the other end of the range. And that is exactly what we do even though the price does move beyond the one trading range because when it does, it begins trading in the next range. Every time the price moves through each range we put the profit that we made into our balance. If each range costs \$10 when the price moves 1 range in the other direction and we have 10 ranges then we would need to have \$10x10 ranges or \$100 plus the margin reserve in the balance for each trade. Since there are ten ranges and therefore ten trades then you would have to carry 10x \$100 plus the margins to cover all of the trades. Marginal requirement may change a little from broker to broker so for illustrational purposes we will just use \$4.55 which is what we would expect to pay at FXDD for .01 standard lots. 10 x \$.66 is \$45.50 therefore if we kept 10 x \$100 + \$45.50 or \$1045.50 in our balance then no matter what the price is between the historical high and low, we could never have a margin call and would continually make our profit every time the price passes completely through each range.

In the above example, we both bought at the bottom and sold at the top of every range. But lets break this up for just a minute and say that we only did buys and no sells. Then at the bottom of the full spectrum the profit loss would show 0. We would do our first buy and as the prices increased the buy would shut off for a \$10 profit and a second buy would open. This would continue until the price covered all ten ranges. It would be great if the price would just go one direction like that then turn

around and go back the other way but it doesn't. It moves up and down in small oscillations all the time. To take advantage of these smaller movements we need to do two things; make our ranges small enough that they would open and close trades on these smaller oscillations and also protect against loss when the price goes the other way. When the price is in range 10 and falling we would have one buy. When the price reaches the bottom of range 9 we would open a second buy in case the price went back up again and there would be a minus \$10 in the profit/loss column because of the buy trade from range 10. At the bottom of range 8 we open still another buy and there would be a minus \$30 in the profit/loss column. The -\$10 carried over from before plus two trades at \$10 each. At the bottom of range 7 you would have 3 trades times \$10 plus the \$30 from the previous ranges which equals minus \$60. Range 6 would have a negative profit of \$40 new and \$60 old for a total of minus \$100.

We can see that the further we move from the top the faster our negative profit grows. Each trade costs us \$10 for each range that the price moves through. Range 5 would cost 1+2+3+4+5 or 15 times \$10 for a total deficit of \$150. There is a little formula that can help us so we don't have to add each and every range to find out how much the total ten ranges would come to. When ever adding a sequence of numbers as we are, you can multiply the highest number by the next one up and divide by 2.  $X(X+1)/2$ .

For 10 ranges we would have  $10 \times 11 / 2 = 55$ . Multiply this by the \$10 per range and you would need \$550 to cover the open trades from ten ranges.

Each additional range would have an increasing amount to add to the total so we want to keep the number of ranges small. If the size of the range is too big we won't get many trades but we still need to cover the entire spectrum that the price can realistically be. If we look at doing sells also then it would be the same just upside down. That one would grow smaller as the other grows larger so they would always add up to the same amount no matter where the prices are between the historic high and low.

If we cut the range size in half we would more than double the number of trades for a greater profit but would cut the profit of each range in half and also double the number of ranges to 20. What would that look like?  $20 \times 21 / 2 = 210$  times \$5 per trade = \$1050. With ten ranges at \$10 it cost us \$550 to cover the full spectrum but at 20 ranges it cost us \$1050 to cover the same spectrum. Isn't there some way to cover the full spectrum with smaller ranges without the cover price going through the roof?

Let's look at a visual representation of the spectrum.

#### Ranges

10	B	SSSSSSSSSS	B= number of Buy trades opened when the price is in that range.
9	BB	SSSSSSSSSS	S= number of Sell trades opened when the price is in that range
8	BBB	SSSSSSSSSS	
7	BBBB	SSSSSSSS	Recall that with ten ranges we cover the full spectrum, we had a
6	BBBBB	SSSSSS	profit or loss of \$10 per trade on each range.
5	BBBBBB	SSSSS	
4	BBBBBBB	SSSS	
3	BBBBBBBB	SSS	
2	BBBBBBBBB	SS	
1	BBBBBBBBBB	S	

Now lets rearrange this just a little by moving the Sells on top of the Buys.

20	SSSSSSSSSS	
19	SSSSSSSSSS	
18	SSSSSSSSSS	
17	SSSSSSSS	
16	SSSSSS	Here we covered the the entire spectrum with 20 ranges but only 10 at a
15	SSSSS	time. Because we can use 20 ranges, each range can be half the size and
14	SSSS	each profit or loss would be half as much as before or \$5.
13	SSS	
12	SS	$10 \times 11 / 2 \times \$5 = \$275$ needed to protect the full spectrum of 20 ranges.
11	S	
10	B	
9	BB	
8	BBB	
7	BBBB	
6	BBBBB	
5	BBBBBB	
4	BBBBBBB	
3	BBBBBBBB	
2	BBBBBBBBB	
1	BBBBBBBBBB	

Some one complains that we are only getting half the number of trades this way. This is true, so lets look at the math. Lets assume that we took 30 trades per month under the first example of 20 ranges when both buying and selling. Recall that we needed  $20 \times 21 / 2 \times \$5$  or \$1050 to cover the spectrum and that each trade made \$5. 30 trades per month is  $\$5 \times 30 = \$150$  per month. To find what percentage that is we just need to divide that by the amount needed to protect the spectrum.

$$\$150 / \$1050 = 14.3\% \text{ per month.}$$

Now lets do it for the half trade method which would only do 15 trades per month.  $\$5 \times 15 = \$75$ .

$$\$75 / \$275 = 27.3\% \text{ per month.}$$

Even though we are doing only half of the trades per month, our percentage of return is almost twice as much because our base requirement is so much less. To compare dollar returns  $\$1050 / \$275 = 3.82$ . We could trade 3.82 times more with the half trade method as we did with the first buy and sell method for a profit of  $3.82 \times \$75$  or \$286 per month. In other words the half trade would increase your return by almost 2 times, dollar for dollar, over the buy/sell method.

By keeping this generic, we have demonstrated that there is a mathematical system that can be used to trade any pair with a no loss scenario. Now it's just a matter of optimizing, by finding the best pair to trade. But there are a couple more matters that need to be considered. How far back do we look to calculate the high, low, center and what about the future when the price breaks it's historical boundaries.

Since we have come to the conclusion that there is indeed a third way to trade and that a mathematical system is the only reliable way to trade then we should rely on a logical mathematical approach to all of the component parts of the system. When it comes to determining how far to go back for data to determine the historic highs and lows, we want to keep in mind that bad data is worse than no data.

The Forex market has fundamentally changed after 2001 when under-financed traders entered the market for the first time. Up until then the Forex was considered speculative and traders had to have a rather high net worth to be allowed to trade the Forex. Banks, investment firms, insurance companies etc. were all in the market with professional traders. They were well aware of the market conditions and all worked in a pact. Fundamental analysis was the main way to trade. Indicators were being developed but their use was not nearly as prevalent as it is today. This group mentality had an amplifying effect on the market. The Forex market of today shares the same name as the Forex of the 1900s but that's just about all. Any data from the other system would be worse than meaningless, it could actually skew the results in the wrong direction. What's more any decision as a result of this data would always be in question.

It would be nice to have 50 years of data to work with but we don't. Anything before 2001 would be questionable. The years just preceding 2001 would most likely be similar in make up to the new Forex as it was beginning to change as early as 1999. So using the current century as the model is just about the best that can be accepted. Now we can answer the question of "how far back do we need to go to get our data". As far back as possible until the data becomes questionable, or the year 2000 which ever is later for the currency pair in question.

Now that we have covered the past, lets look at the future. There is only one thing that never changes and that is change itself. The Forex of the future will no doubt change over time. This means that the relationship between countries will change and the value of the various countries will change as well but they are not likely to change dramatically at any one time unless there is a world class event that fundamentally changes the structure of the world, in which case your money would be worthless any way. Currently the US Dollar has been beaten to death by the miserably poor banking practices. Comparing the dollar to the next largest currency in trade, the Euro, would give us an almost catastrophic example to measure against. By calculating the center from the previous highs and lows then measuring the difference from the current extreme to center, we find that the current extreme is 48%, worse than any time in history. Should the current financial situation collapse any further we would have the real probability of a world class event. If we use this as a worse case scenario then we can safely use the statistical results as a good indicator and make our trades to include a possible 50% increase in the historical high or historical low. To compensate, we need only to maintain sufficient additional funds in our balance to maintain the equation that the balance must be greater than the result of our combined trades.

In the example above we had 20 ranges, 10 buys and 10 sells. Each trade generated \$5 per range. Each range was 50 pips. If we want to protect to an extra 50% then we would multiply the current 10 ranges by 50% and add the 5 ranges to the top. We will not be trading in these extended ranges, just buying insurance against the price ever going there. 10 open trades times 5 ranges times \$5 per range equals  $10 \times 5 \times 5$  or \$250. When added to the \$275 needed to protect the full price spectrum we would then need to put \$525 or more into the balance for each unit of trade.

At this we have developed a no **loss** trading system that can be adapted to be used on any currency pair with the expectation of making some profit. Since it does indeed satisfy all the aspects of a holy grail, I submit that the grail is a possibility and the Gold system is one such example. But I am not saying that any one could use this system as described. There is a difference between theory and practical application. Since the return on investment is relatively low compared to the happy guess methods then every opportunity for a trade must be taken advantage of. You have to sleep, eat, go to the store, bath the dog, you get the idea. We have physical limitations to trading the Gold system individually. Therefore we would also need a robotic miner to harvest our gold for us to make the system complete.

With the help of a programmer we have developed a robo-miner to trade the Gold system. The robo-miner is preset to our preferred currency pair, the AUD/NZD. These two countries are in the same part of the world, speak the same language, have the same economical structure, they are even both island countries. They have a history of stability and though not isolated from the rest of the market, they tend to keep a respectful distance from the chaos of the US and Europe. Currently there is just over 2000 pips from the historic high to the historic low. The center is at 1.1444. To cover the full price spectrum at 50 pips per range would require just 40 ranges. Using the half trade method you would need 20 ranges for the spectrum and 10 more to cover 50% more. Each range costs \$4 per .01 standard lots. \$1000 is needed to cover the spectrum and \$800 more would cover the 50% beyond the historical limits.

In addition, the Robo-Miner has a few optimizing options built in and can be tested on demo accounts free of charge so that the theoretical can be verified by the practical.

In conclusion, I believe that I have demonstrated that the holy grail of Forex trading does in fact exist, and proven mathematically. Further more for those that would like to verify it by actual use can do so without reservations. I believe that this concept establishes a third and more reliable type of trading method to the Fundamental and Technical systems available to date. It is our hope that this new concept will be developed by others to refine the Forex Trading methods even further.

Thank you. Bob.

Note: the Gold system was developed by the Forex research group, the *Forex-Assistant*. A copy of this report is available from the Forex-Assistants.

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