The power of money management

One trader lost ($3000) during the course of a year trading one contract of system A. Another trader makes $25,000 trading the same system that year. One trader makes $24,000 trading system B one year while another makes from that same system $79,000, both with the same starting capital. What is the difference between these traders?

MONEY MANAGEMENT - THE MATHEMATICAL PROCESS OF INCREASING AND DECREASING THE NUMBER OF CONTRACTS/SHARES/OPTIONS. THE PURPOSE OF UTILIZING MONEY MANAGEMENT SHOULD BE TO INCREASE THE PROFITABILITY DURING POSITIVE RUNS AND PROTECT THOSE PROFITS DURING DRAWDOWNS OF ANY TRADING SYSTEM OR METHOD.

Money management is what allowed Larry Williams to trade **$10,000 into $1.1 million within one year**. According to Larry, if he had traded ONE CONTRACT on every single trade, profits that year would have been only around $100,000. There were two aspects to Larry's record setting trades: **1)** The system and strategies he used to determine where to enter and exit trades; and **2)** the method he used to increase and decrease the number of contracts to place on any given trade. To put it simply, only 9% of the total profits came from the system and strategies used to determine where to enter and exit trades while 91% of the total profits that year came from the money management strategy he applied. Money management alone increased Williams' return by 1000%!

90% - 95% OF ALL TRADERS LOSE MONEY

This is a statistic that I have heard for years on many different occasions and from a number of reliable sources. In my own experiences hearing from other traders, I could not offer any data to the contrary. Here is another piece of interesting data I think is correlated to this statistic. 90% - 95% of all traders spend hundreds of hours and thousands of dollars trying to figure out where to enter and exit the market while they barely even put a thought towards how much risk to place on each trade and when to increase or decrease that risk. I seriously doubt that these two statistics are the same by coincidence.

I opened the article by comparing two traders trading the same system. The first trader lost $3,000 during the year while another trade made $25,000 taking the same exact signals as the first trader. The difference between these two traders is the simple fact that the second one applied proper money management methods to the trades while the first one did not.

NOT JUST MONEY MANAGEMENT, BUT THE RIGHT MONEY MANAGEMENT

Before we further explore the power of money management, it is important to clarify that not just any money management should be applied to trading, but proper money management.

To drive the point home, we will use the following illustration: Take a coin; toss it in the air 100 times. The ratio of heads to tails landing up should be very close to 50/50. If you were to win $2.00 every time the coin landed heads up and lose $1 every time heads landed face down, you should have won approximately $50 by the end of 100 tosses. This is a positive expectation situation. The odds of you winning are heavily in your favor. We will further say you have $100 to bet with. The question is, what percentage of your money should you risk on each flip of the coin? What would you say is the best percentage to reinvest on each flip? 10% 25% 40% of 51%? This means that if you begin with $100 and choose to risk 10% of your capital on each flip, you begin by risking $10 on the first flip. If the coin lands heads up, you win $20. You would then risk $12 of the new $120 total on the next flip of the coin. If you lose, you lose $12 and if you win, you win $24 and so forth the game goes. Would it make a difference which % you used? If so, how much? Remember, you make twice as much when you win than when you lose. The odds of you winning are 50% every time. The answer may surprise you. By risking 10% of your money on each of the 100 flips (a $10 bet on the first flip) you will turn your $100 into $4,700! Money management increases your return from 50% to a 4700% return! Reinvesting 25% of your money would have turned $100 into $36,100! An increase of just 15% per toss increases your total return from 4700% to 36,100%. It looks like it gets better the more you invest. But wait. Increasing your risk another 15% every flip to a total of 40% being risked on each flip would turn your $100 into $4700. This time by increasing your risk, your return dropped drastically. What if 51% of your money is invested? With this scenario, you actually lose money even though the odds are statistically in your favor. Your $100 decreases to $36. A loss of 64%. The point?

USING THE RIGHT OR WRONG MONEY MANAGEMENT CAN MAKE OR BREAK YOU!

The great thing about money management is the fact that money management is purely a function of math. A hundred years ago, two + two = four. Today, that same equation yields the same answer (unless you were raised in the public school system at which point it would depend on how you feel that day. Therefore, money management IS predictable unlike trading strategies or systems. In the example above, it would not matter in what order heads or tails were achieved. If you flipped 50 tails first and then 50 heads, the outcome would be the same as if you flipped 50 heads first and then suffered the 50 losing tails. You may be skeptical of these numbers at first, but I assure you, the numbers are correct.

STOP *HERE FOR A MOMENT*

Before reading further, the previous illustrations should have left one very big impression about how powerful money management can be. Let's take the time to re-assert a few things before we go on.

1) Money management is more powerful than any trading system that it can be implemented to.

2) Money management is more stable than ANY trading system. It is based on math, and math does not change.

3) It is more logical to implement proper money management to a trading system than to trade that system without it. Money management will take you farther with less.

4) The wrong money management applied to your trading could actually hurt the end result.

Finally before proceeding, we want to convey one more thought and leave you a challenge. You may or may not have noticed that the commodity industry is infatuated with trading systems. Have you ever stopped to ask yourself that if money is to be made through trading systems, why do 90% of individual traders end up losing money? Why don't system vendors know the effect of proper money management? Our challenge is this; Call any system vendor, ANY of them, ask them the following:

"if I were to purchase your system, at what levels should I increase the number of contracts I am trading?"

More than likely, you will get one of the following answers:

1) I don't know.
2) It's really up to you.
3) Increase one contract for every $10,000 in your account.
4) X% of your account on each trade. (this will probably range from about 2% to 10%.)
5) Increase when you double your money.

After receiving one of these answers, read the following and decide for yourself whether you should take their advice or not.

TRADITIONAL FIXED FRACTIONAL MONEY MANAGEMENT

The most widely understood technique of money management, especially among professional money managers, is called the fixed fractional method. This method simply risks X% of your money on each and every trade and is the method used in our coin tossing example. If you expect your largest possible loss to be $1,000 in a $20,000 account and you wanted to risk no more than 5% of your account balance on every trade, you would trade one contract for every $20,000 in your account. ($1,000 / .05 =

$20,000) When the account is built up to $40,000, you would then be able to increase the number of contracts to two. When you reach $60,000, you will increase to three contracts, etc. You would increase or decrease contracts by one for every $20,000 you have in your account. This is the most commonly used method in the industry today. However, there are some problems with this type of method.

PROBLEMS WITH FIXED FRACTIONAL

Fixed fractional trading is an objective process that is fairly simple to implement. But, is it the most practical and logical? The answer is no. Fixed Fractional trading has several drawbacks. For the average trader, a typical account to start trading is about $20,000. Implementing the same scenario of maximum loss per trade of $1,000 and risking no more than 5% on each trade requires you to produce a 100% return before you increase from trading one contract to two contracts. Further, if your largest loss exceeded $1,000 you would be required to break your own rule just to trade one contract. For example, if your largest loss is $1,500 instead of $1,000, you are risking 7.5% of your account balance right off of the bat ($1,500 / $20,000 = 7.5%). You either have to break your own rule or start with $30,000 instead of $20,000 in the account. At this point it would take you $30,000 in profits before you ever increase from one to two contracts.

On any scenario risking X% on each trade would require a 100% return on your original investment before you increase to two contracts. However, to increase trading two contracts to three requires an additional 50% increase of your account balance. Using the $1,000 largest loss and risking 5% on each trade requires an additional $20,000 in profits but computes to only a 33% increase in the account balance to go from three to four contracts. Keep in mind that you are increasing the ability to achieve the higher goals in a far less amount of time. This is true because you are trading more contracts to reach the same amount of additional money each time. Theoretically, if it took you one year to increase from trading one contract to trading two contracts, it should take you another six months to increase to three contracts. This scenario continues on until it is absolutely absurd the rate at which you are increasing contracts. For example, to increase from 1 to 4 contracts requires two years provided that you make on average $20,000 per year per contract. However, over the following two years, your increase skyrockets from 4 contracts to 33 contracts. At that rate, the increase is one contract every 11 days instead of the one-year it took to go from one to two contracts.

This also poses a major problem when you try to compensate for the incredible length of time it takes you to increase from one to two contracts. The only possible way to increase that speed on the front end (which is when it is needed most, especially when you are starting with a smaller account) is to increase the percentage of risk. For example, we will raise the percentage of your account to risk on each trade from 5% to 15%. A single contract for every $6,666 in your account ($1,000 / .5 = $6,666). Therefore, according to this scenario, if you start out with a $20,000 account, you begin trading three contracts before the system even started proving itself. The increase from three to four contracts occurs in only forty days. The next increase comes to pass in thirty days and by the rime you go from ten to eleven contracts, a time span of only twelve days has passed! From twenty to twenty-one contracts would take a little more than five days. To look at this same scenario a little differently, instead of using time, we will use dollars required per contract traded. Remember,

you only need a total additional $6,666.66 to increase contracts. If you are trading 20 contracts, you divide that required amount by the number of contracts you are trading to come up with how much per contract you need to make ($6,666 / 20 = $333). That's right; you need a profitable trade of only $333 to increase another contract. But wait, what if your next trade yielded you a $1,300 profit? You actually skip from trading twenty contracts to twenty-four contracts on ONE TRADE! Well, it doesn't take a rocket scientist to see where we are going with this.

(*Note - The time examples are illustrative only using averages to make the point. Do not read anything more into it**)**

FIXED FRACTIONAL'S MASSIVE DRAWDOWNS

If the method being used in the above scenario to increase from 20 to 24 contracts has average profitable trades in the range of $1,000 to $2,000, this will cause the money management system to skip contracts at higher levels. If you make it up to twenty contracts (which also means your account balance is at least $130,000 ($6,666 x 20) and you have a profitable trade of $1,300 and jump up to twenty-four contracts on your next trade, what happens if a drawdown occurs? Let's say your worst drawdown is only $5,000 (which is far better than most realistic drawdowns). If your worst loss is only $1,000, that means your drawdown has to be spread out between at least five trades. To be conservative, we will say that these five trades occurred consecutively rather than simultaneously (five open positions at the same time at twenty-four contracts a piece).

The first trade occurs and you have twenty-four contracts. Your loss is ($1,000) per contract. Your account goes from at least $160,000 (24 contracts x $6,666) to $136,000 in one trade ($1,000 loss x 24 contracts). As a result, the next trade you only put on twenty contracts $136,000 / $6,666 = 20. The loss of ($1,000) comes and your account goes down to $116,000. The next trade you have seventeen contracts and you move down to $99,000 in account equity. Remember, this is only a $3,000 drawdown per contract so far. Next trade comes, you have fourteen contracts on and your loss takes you down to $85,000. Your final trade you have cut your contracts in half to where you're now only trading twelve and the loss brings your account balance to $73,000.

Your small $5,000 drawdown, which was only a 25% drawdown if you were only trading one contract with a $20,000 account, has now turned into an $87,000 drawdown and 54% of your total account balance. Really bad news if your drawdown exceeds $5,000 per contract. Remember, we were also being conservative. If you had put on all five of those losing trades at relatively the same time with the full twenty-four contracts, your account would have gone from $160,000 to only $40,000!!!!! Totally Unacceptable. Further, if the $5,000 drawdown continues, the $73,000 dwindles to only $34,000. A $10,000 drawdown dropped the account by $126,000!

ONE CONTRACT FOR EVERY $10,000 IN YOUR ACCOUNT

This is actually just a different way of saying X% risked on every trade. In the previous example using a $1,000 largest loss, one contract for every $10,000 would come out to 10% being risked on each trade ($1,000 / .10 = $10,000). Therefore, the ridiculous

discrepancy in time between increasing from one to two contracts and nine to ten contracts is still the same. The drawdown risks are the same with any fixed percentage being risked on each trade. BIG. The only difference is HOW big.

These are the things most everyone else is telling you to do. As you can see, breaking these methods down strips any logical argument for utilizing them in your own trading.

RISKING 2% ON EACH TRADE

It amazes me how many vendors in the industry push this money management method. This may be good for managed funds with millions of dollars, but it is totally impractical for individual traders with average accounts. I need only make one illustration to prove my point. If you have a $20,000 account, you cannot trade unless the risk on each trade is at or less than $400. If you have a $50,000 account, you cannot take a trade with a risk of more than $1,000. Further, if your maximum risk is only $1,000 with a $50,000 account, you cannot increase contracts until the account increases to $100,000! You cannot increase to 3 contracts until the account reaches $150,000.

You might be saying to yourself about now that this is simply a more conservative method of money management and that someone may not want to risk more than this. Don't entertain that thought because it is totally and completely 100% false. I hear all the time how traders want to say money management is simply a matter of preference and that it is going to be different for every trader. To some degree, this is true. But if you take the same account size with the same risk tolerance and the same profit goals, there is only one "best" money management application for that set of circumstances. In geometry, the definition of a line is the shortest distance between two points. There are other ways to get from point A to point B, but there is only one way that is most efficient to achieve the same results. That is the same way with money management. It is only a matter of preference is one trader doesn't want to reach point B in the most efficient manner. If that is the case, you should probably hang up your trading shoes. There is a "best" way and it is not a matter of preference. It is a matter of mathematics. Keep that in mind as we continue on.

THE SOLUTION - FIXED RATIO*tm* MONEY MANAGEMENT

Back when I was researching all of the different type of money management and getting frustrated at the various pros and cons, I ended up scrapping everything there was and developing my own. The method I developed is called Fixed Ratio Trading. Before I get into the logic of Fixed Ratio, let me review a few examples of what the Fixed Ratio money management method can do for systems like the ones you trade right now.

An S&P Daytrading System.
Results trading just one contract were as follows:

Trades 123
#Winners 67
#Losers 56
%Profitable 54%
Total net Profit $25,830
Avg. Trade $210
Largest DD 19%

As you can see, not the Holy Grail. But, apply the Fixed Ratio method to these results and over the same 123 trades, the increase is spectacular:

#Winners 67
#Losers 56
%Profitable 54%
Total Net Profit $204,000
Avg. trade $1,658
Largest DD 22%

A better than sevenfold increase in profits while only increasing the total drawdown by 3%!

How about a position trading system in the Bonds?

#Trades 183
#Winners 115
#Losers 68
%Profitable 63%
Total net Profit $44,652
Avg. Trade $244
Largest DD 14%
With our fixed Ratio money management applied to the same 183 trades starting with one contract, results were as follows:

#Trades 183
#Winners 115
#Losers 68
%Profitable 63%
Total Net Profit $462,787
Avg. Trade $2,528
Largest DD 19%

A better than **TEN FOLD** increase in profits while only increasing the drawdown by 5%! Is this something you should apply to your trading?

THE LOGIC BEHIND THE FIXED RATIO METHOD

I realize some of you may be saying that a fixed fraction and a fixed ratio are the same thing. But, in fact, they are referring to two different subject matters and that is the difference. The fixed fractional method is referring to what percentage of your capital should you risk on the next trade, and every trade thereafter. The Fixed Ratio method is referring to difference between each increase and decrease. This is the key.

You will recall earlier in the article that I gave examples using average times to increase as well as average dollars to increase. Using the fixed fractional method, the time needed to increase at the beginning was far slower than the time needed to increase further into trading. The dollars required to increase contracts at the beginning was far more than the dollars required to increase contracts at higher levels. In all of the research, this was the flaw in the method, the fly in the ointment if you will. Fixed ratio corrected this flaw by simply making these differences **EQUAL** or **FIXED.**

For example, if it took an average of 10 trades to increase from one to two contracts, it will take an average of 10 trades to increase from 19 to 20 contracts. If it takes an average of $10,000 WITH THE FIRST CONTRACT to increase from 1 to 2 contracts, then it will take $10,000 PER CONTRACT to increase from 19 to 20 contracts. In other words, there is a Fixed Ratio of contracts traded to dollars required to increase.

It goes like this. I call the ratio between contracts traded to dollars required the **"delta".** This simply means "change". Depending on how aggressive or conservative you want to be, you simply change the delta in the following formula accordingly. A smaller delta is more aggressive while a larger delta is more conservative.

Current Balance + (#contracts * Delta) = next increase in contracts.

A $20,000 starting balance using a $5,000 delta would increase from 1 to 2 contracts once the account reached $25,000. To increase from 2 to 3 contracts, you would apply the same formula:

Current Balance = $25,000 + (2 contracts * $5,000) = $35,000. You would increase to 3 contracts once the account hit $35,000. This continues throughout your increases.

This article barely scratches the surface of my research into the powerful topic of money management. For a more thorough and in depth study on everything in this article and so much more, I suggest buying my book **"The Trading Game, Playing by the Numbers to Make Millions".** In the meantime, let me make one illustration to prove my next statement. If you believe that money management is a matter of preference, or that it is just my opinion that my Fixed Ratio method is better than any fixed fraction, then I challenge you to prove me wrong. Give me any system, any set of positive results (and in many cases, negative end results) and I guarantee that taking into account both risk levels and profit potential, there is no fixed fractional method out there that will beat the Fixed Ratio method. There are a lot of opinions out there, but I will back mine up. I will do it hypothetically if you wish or real time, real trades and real money. You can choose the method. You use a fixed fraction, any fixed fraction you want, and I'll use my Fixed Ratio. We will start with 1 contract and

the first one to reach a predetermined profit level without violating a certain percentage of the account at any given time will win. Further, both money management plans have to be fully disclosed and stuck with prior to the start of trading. This is a standing offer to anyone at anytime using whatever trading system and/or market they want to use.

Now for the illustration:

An S&P Trading method made $39,500 based on a single contract from January 1st through the end of April. The worst drawdown hit $12,500. Using a delta of $5,000, profits were increased to $104,000 trading 6 contracts. This means that with a $2,000 single contract loss, the drawdown would be $12,000 or 11.5% of the profits. This, by the way, is not "the best" ratio to use in this scenario if you are looking for profitability.

Using the fixed fractional method, I optimized to find the **VERY BEST** fixed fraction to trade on this data set. If you will recall in the coin flipping illustration, risking 25% produced more profits than risking 10% or risking 40%. In fact, for that particular situation, risking 25% produced **THE MOST** profits of any fixed fraction. This is called **"Optimal f".** I used Optimal f with this illustration. The **VERY BEST** fixed fraction could only produce a total of $71,250 and it was trading 9 contracts at the end of that scenario. This means that a $2,000 loss per contract would result in an $18,000 drop, or 25% drawdown.

This means that the very best fixed fraction produced $32,000 less profits and was risking 13% more of those fewer profits with a single loss of $2,000. By the way, the best was 12% based on a $1,000 possible loss. 12% produced more profits than 11% and more profits than 13%.

Remember what I said about using a smaller fixed fraction was just being more conservative, and how that thought process was false. Try this on for size risking 2% based on a $1,000 largest loss would have never increased contracts. This means that after a $10,000 drawdown using the "more conservative" money management, total profits would be at only $29,500 for the year. After the same $10,000 drawdown using a $5,000 delta, the account would still be over $50,000.

APPLYING MONEY MANAGEMENT TO YOUR TRADING:

The purpose of this article was more to open your eyes to the power of proper money management and encourage you to look further into the subject. Don't take my word for it, do your own research and see if the principles outlined in this article are not true. Having not even begun to scratch the surface, money management is the most powerful aspect of trading when it comes to your bottom line**. It could mean the difference between your ultimate success and failure in trading.**