

Fixed Fractional & Fixed Ratio Combined Money Management

Fixed ratio money management is a great tool to grow your account quickly and reduce risk as you grow. What this method lacks later on is the ability to grow fast enough. This however can be improved if you are a streaker and can access micro lots.

The idea is to combine fixed ratio money management with fixed fractional money management on a trade by trade basis. The general idea of this type of money management is to lower position size when you lose and increase position size when you win. This type of money management however doesn't increase position size to an extent which, over time, becomes chaotic, it increases position size only by a little so the benefits are apparent but doesn't get out of hand either.

Before we get into the specifics of the combination of these two types of money management we first need to understand the basics behind each different type of money management.

Fixed Fractional Money Management:

The fixed fractional money management is the simplest (besides the no money management at all strategy) technique of money management. The basic principles of this type of money management are simple and very easy to understand, that is why nearly all traders use this type of money management. It however is very hard to implement at the beginning of a trading career (when money management is most important) and it gets out of hand later on in the trading career if it is not managed properly. Also there is no real protection against drawdown.

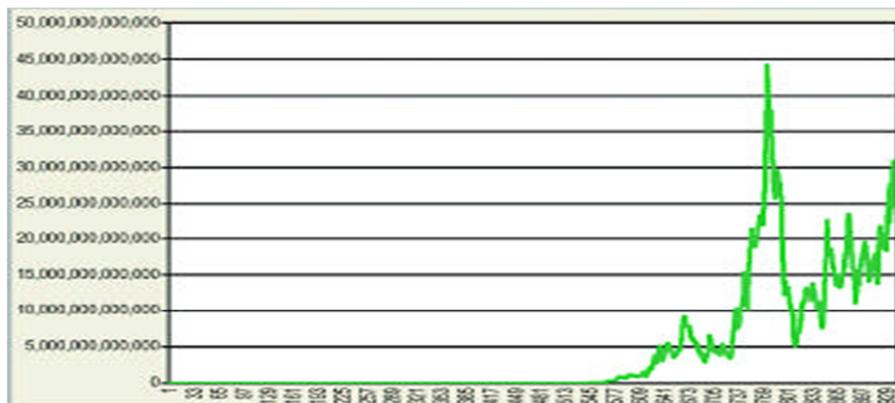
The basic principle of this type of money management is that for every X amount of gain in the account you increase contract size by 1 or 0.1 depending on the market and starting balance. This basically means that you risk Y% of your account no matter how much equity your account has. In all my examples I will be using the Forex market. For example you have a starting account of \$10,000, a starting position size of 0.1 lots, you trade 2 positions per trade and your average loser is 100 pips per position (total of 200 pips per loss, or \$200 when trading 0.1 lots), which means on every transaction you risk 2% of your total account. For every additional \$10,000 in your account you increase your lot size by 0.1. So when you reach account equity of \$20,000 you trade 0.2 lots, at \$30,000 you trade 0.3... at 100,000 you trade 1.0 lot and so on.

The main problem with fixed fractional money management is, as I have stated above, the slow growth rate in position size at the lower end and the exaggerated growth in position size at the higher end. We will start at the beginning and work our way towards the end with this the example. So let's take the starting account, stated above, of \$10,000 and a starting position size of 0.1 lots, with the afferent risk of 2%. In this example to increase your position size to 0.2 lots you need to double your account. Talking in number of pips, with a 0.1 lot position size per trade and a \$1 per pip, for every pip won, to double your account you need to make 10,000 pips... (That's a lot of pips!!!). After reaching the \$20,000 mark and increasing your lot size to 0.2, things start to get a little easier, you only need 5000 pips to increase in lot size again to 0.3, and this is due to the fact that you

now make \$2 per pip because of the 0.2 lot size. At the \$30,000 and 0.3 lot size, you only need to make 3333.33 pips to increase your account size to \$40,000 and 0.4 lots. All these increases are shown in the table below.

Stage No.	Account Equity	Position Size (Lot)	\$ Until Next Increase	\$ / Pip	Pips Until Next Increase
1	\$10,000	0.10	\$10,000	\$1	10000
2	\$20,000	0.20	\$10,000	\$2	5000
3	\$30,000	0.30	\$10,000	\$3	3333
4	\$40,000	0.40	\$10,000	\$4	2500
5	\$50,000	0.50	\$10,000	\$5	2000
6	\$60,000	0.60	\$10,000	\$6	1667
7	\$70,000	0.70	\$10,000	\$7	1429
8	\$80,000	0.80	\$10,000	\$8	1250
9	\$90,000	0.90	\$10,000	\$9	1111
10	\$100,000	1.00	\$10,000	\$10	1000
11	\$110,000	1.10	\$10,000	\$11	909
12	\$120,000	1.20	\$10,000	\$12	833
13	\$130,000	1.30	\$10,000	\$13	769
14	\$140,000	1.40	\$10,000	\$14	714
15	\$150,000	1.50	\$10,000	\$15	667
...					
45	\$450,000	4.50	\$10,000	\$45	222
46	\$460,000	4.60	\$10,000	\$46	217
47	\$470,000	4.70	\$10,000	\$47	213
48	\$480,000	4.80	\$10,000	\$48	208
49	\$490,000	4.90	\$10,000	\$49	204
50	\$500,000	5.00	\$10,000	\$50	200

As you can see from the data above at the beginning of the trader's account history the growth is painfully slow, while towards the end it gets extremely quick and easy to increase in position size. 200 pips, if you're trading a higher time frame, these can be made or lost from one good trade. So you can imagine when a drawdown comes, and drawdowns will always come, what happens to account equity, it bounces around like a yo-yo as shown in the graph below.



The graph is from "t2U_fxpro_200101_smoothed_ratio_money_management.pdf". Great read by the way.

Now we will go on to the next type of money management:

Fixed Ratio Money Management

The fixed ratio money management technique in my opinion is the best, basic money management technique out there. This type of money management takes into account the fact that a new trader needs to grow account equity at the beginning as fast as possible but also needs growth to slow down gradually as the account equity grows so the position size and growth don't get out of hand. Also this type of money management starts off with a higher risk % of total account and the risk gradually decreases as the no. of contracts traded and account equity increases.

The basic idea behind this type of money management is quite easy to understand as well (a little more complex than the previous type of money management but easy none the less). Fixed ratio money management, to explain it in layman's terms, is a fixed fractional money management applied to the number of pips needed to increase from one contract size to the next. For example, if you have a starting account balance of \$10,000 and you trade a 0.1 lot size (which means you get \$1 for every pip) and you choose your increment of growth to be, let's say, 3000 pips then, to be able to trade 0.2 lots you only need your account to grow to \$13,000 to be able to make this change. Now here comes the real power of this type of money management, if you want to increase from 0.2 lots to 0.3 lots your account equity needs to grow by \$6000 (3000 pips multiplied by \$2 per pip), so to be able to trade 0.3 lots you need to have an account equity of \$19,000 (\$6,000 added to previous \$13,000). To increase from 0.3 lots to 0.4 lots your account equity needs to grow by \$9000 (3000 pips multiplied by \$3 per pip), so to be able to trade 0.4 lots you need to have an account equity of \$28,000 (\$9,000 added to the previous \$19,000), and so on. So the basics are easy to understand and implement, same fixed fractional money management except implemented in a different place which makes account growth a lot more sustainable throughout its lifetime.

Now the hard part of this type of money management is choosing the right Delta, the increment of pips needed to increase in position size, so as not to risk too much of your account at the beginning but still have sufficient equity and position size growth to still make using this type of money management worth it. When choosing the Delta, there are a few key things you need to take into account. First of all, and most importantly, you need to back test your strategy and extract from that information your average loser, to do this you need to divide the total amount of pips lost by the amount of losing trades. Once you have that number you need to go back and see what your maximum drawdown was, historically. With this information you need to find out roughly how many losing trades you will have on average during this drawdown. To do this you need to divide the total money lost, during your largest drawdown by the average loser and you will get the maximum trades you will lose, roughly, in your biggest drawdown. Now you need to take into account the maximum margin requirements of your broker (all brokers provide this information for free), this means that when you enter a trade a broker blocks a certain amount of money from your account that you cannot trade with so they can have a safety net in case your trade goes against you. Now the important thing you need to think about is how much of your account you are willing to lose at any one point in time due to draw down, because when you get to trade more than 0.1 lots the

maximum drawdown that you calculated earlier will be multiplied by the amount of times that you trade above the 0.1 mark. So if you trade 0.2 lots your maximum drawdown, in monetary value, will be multiplied by 2, if you trade 0.3 lots then your maximum drawdown will be multiplied by 3, and so on. Also you have to think long and hard about the percent of account equity you are willing to risk at one time, the more you are willing to risk the greater the account growth you are willing to promote, it's a tradeoff but you need to find the middle ground that is most comfortable for yourself. One last thing you need to think about is the percentage of your total account you are willing to risk per trade, this percentage should, in my opinion, range from 2% to 3.5% at the beginning as not to stagnate growth, but this again depends on your starting balance and your risk tolerance. Any more than 3.5% in my opinion gets too out of hand if the drawdown occurs. The beautiful thing about this type of money management is, as I have stated above, that the risk decreases as account equity increases past a certain point. Also when getting to trade 1 lot per position you need to have a look of the risk per trade as well, this in my opinion should range from 1% to 1.5%. Any lower than 1% is too slow of a growth, and any higher than 1.5% might be detrimental to your sanity when drawdown occurs. These last two ranges that I have put in, are relative to a starting account of \$10,000 and of course are dependent on each different trader and their tolerance for risk, so it's not set in stone this is just my opinion. If you drop down for example to a \$5,000 account and 0.1 lots traded the risk per trade increases dramatically and the risk tolerance should shift to ranges between 4% and 5% of total account. The only ratio that stays constant is the ratio when trading 1 lot per position which remains between 1% and 1.5%.

Let's put this in an example to understand it better. You have a starting account balance of \$10,000, your strategy uses 2 positions per trade with 0.1 lots per position with a leverage of 50:1 (the leverage is important in this calculation), so every time you enter a trade \$400 are taken out of your account. Your average loser is 100 pips per position, with 2 positions per trade you stand to lose 200 pips per trade, and your maximum drawdown is, let's say, 3,000 pips which means that your maximum losing trades in a row will be 15. Now for the margin requirement, your broker blocks \$300 for every position when trading 0.1 lots, since you trade a 2 position strategy, your broker will block \$1,000 total from your account. Now to get total amount blocked from your account per trade we just use the margin, of \$1,000. To see how many trades we can have open at once we divide the total account balance, of \$10,000, by the total amount needed to place a trade, of \$1,000, and we get the amount of 10 trades open at once. Now 16 trades open at once is too much unless you have a huge portfolio, so let's say that you only have 6 trades open, at the most, at any one time. Now let's say that you want to lose at most 40% of your total account due to drawdown. This number was chosen so that if you hit your maximum drawdown right from the beginning then you don't stop trading, since your maximum drawdown is 30% of your total starting account. The 10% extra was chosen to account for variations in the drawdown at the further stages of money management.

In the next 8 tables different Deltas of money management are shown along with: minimum account equity needed for the next increase, the increments needed to increase in position from one to the other, the maximum number of positions you can have open at each increment's beginning, the lot sizes afferent to each level and the maximum account risked per losing trade.

Increments of 5000 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	5000	10	0.1	2.00%
\$15,000	\$5,000	5000	7	0.2	2.67%
\$25,000	\$10,000	5000	8	0.3	2.40%
\$40,000	\$15,000	5000	10	0.4	2.00%
\$60,000	\$20,000	5000	12	0.5	1.67%
\$85,000	\$25,000	5000	14	0.6	1.41%
\$115,000	\$30,000	5000	16	0.7	1.22%
\$150,000	\$35,000	5000	18	0.8	1.07%
\$190,000	\$40,000	5000	21	0.9	0.95%
\$235,000	\$45,000	5000	23	1	0.85%

Increments of 4500 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	4500	10	0.1	2.00%
\$14,500	\$4,500	4500	7	0.2	2.76%
\$23,500	\$9,000	4500	7	0.3	2.55%
\$37,000	\$13,500	4500	9	0.4	2.16%
\$55,000	\$18,000	4500	11	0.5	1.82%
\$77,500	\$22,500	4500	12	0.6	1.55%
\$104,500	\$27,000	4500	14	0.7	1.34%
\$136,000	\$31,500	4500	17	0.8	1.18%
\$172,000	\$36,000	4500	19	0.9	1.05%
\$212,500	\$40,500	4500	21	1	0.94%

Increments of 4000 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	4000	10	0.1	2.00%
\$14,000	\$4,000	4000	7	0.2	2.86%
\$22,000	\$8,000	4000	7	0.3	2.73%
\$34,000	\$12,000	4000	8	0.4	2.35%
\$50,000	\$16,000	4000	10	0.5	2.00%
\$70,000	\$20,000	4000	11	0.6	1.71%
\$94,000	\$24,000	4000	13	0.7	1.49%
\$122,000	\$28,000	4000	15	0.8	1.31%
\$154,000	\$32,000	4000	17	0.9	1.17%

\$190,000	\$36,000	4000	19	1	1.05%
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Increments of 3500 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	3500	10	0.1	2.00%
\$13,500	\$3,500	3500	6	0.2	2.96%
\$20,500	\$7,000	3500	6	0.3	2.93%
\$31,000	\$10,500	3500	7	0.4	2.58%
\$45,000	\$14,000	3500	9	0.5	2.22%
\$62,500	\$17,500	3500	10	0.6	1.92%
\$83,500	\$21,000	3500	11	0.7	1.68%
\$108,000	\$24,500	3500	13	0.8	1.48%
\$136,000	\$28,000	3500	15	0.9	1.32%
\$167,500	\$31,500	3500	16	1	1.19%

Increments of 3000 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	3000	10	0.1	2.00%
\$13,000	\$3,000	3000	6	0.2	3.08%
\$19,000	\$6,000	3000	6	0.3	3.16%
\$28,000	\$9,000	3000	7	0.4	2.86%
\$40,000	\$12,000	3000	8	0.5	2.50%
\$55,000	\$15,000	3000	9	0.6	2.18%
\$73,000	\$18,000	3000	10	0.7	1.92%
\$94,000	\$21,000	3000	11	0.8	1.70%
\$118,000	\$24,000	3000	13	0.9	1.53%
\$145,000	\$27,000	3000	14	1	1.38%

Increments of 2500 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	2500	10	0.1	2.00%
\$12,500	\$2,500	2500	6	0.2	3.20%
\$17,500	\$5,000	2500	5	0.3	3.43%
\$25,000	\$7,500	2500	6	0.4	3.20%
\$35,000	\$10,000	2500	7	0.5	2.86%
\$47,500	\$12,500	2500	7	0.6	2.53%
\$62,500	\$15,000	2500	8	0.7	2.24%

\$80,000	\$17,500	2500	10	0.8	2.00%
\$100,000	\$20,000	2500	11	0.9	1.80%
\$122,500	\$22,500	2500	12	1	1.63%

Increments of 2000 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	2000	10	0.1	2.00%
\$12,000	\$2,000	2000	6	0.2	3.33%
\$16,000	\$4,000	2000	5	0.3	3.75%
\$22,000	\$6,000	2000	6	0.4	3.64%
\$30,000	\$8,000	2000	6	0.5	3.33%
\$40,000	\$10,000	2000	7	0.6	3.00%
\$52,000	\$12,000	2000	7	0.7	2.69%
\$66,000	\$14,000	2000	8	0.8	2.42%
\$82,000	\$16,000	2000	9	0.9	2.20%
\$100,000	\$18,000	2000	10	1	2.00%

Increments of 1500 pips					
account equity	increments of money management	Delta	no. positions open at once	lot	account risked per trade
\$10,000	\$0	1500	10	0.1	2.00%
\$11,500	\$1,500	1500	6	0.2	3.48%
\$14,500	\$3,000	1500	5	0.3	4.14%
\$19,000	\$4,500	1500	5	0.4	4.21%
\$25,000	\$6,000	1500	5	0.5	4.00%
\$32,500	\$7,500	1500	5	0.6	3.69%
\$41,500	\$9,000	1500	6	0.7	3.37%
\$52,000	\$10,500	1500	7	0.8	3.08%
\$64,000	\$12,000	1500	7	0.9	2.81%
\$77,500	\$13,500	1500	8	1	2.58%

Let's start by analyzing the data in the tables above to better understand it. As you can notice right at the beginning, when trading 0.1 lots, the risk per transaction is 2% for all the increments of pips. When trading 0.2 lots the risk increases, this is why I said above you should have a risk, at maximum, of 3.5%. This is normal to happen if you want to promote growth at the beginning of your trading career, if you want to have a risk under 2% then you have to have an increment of 10,000 pips with which you would be better off using fixed fractional money management and I wouldn't recommend using this (for reasons see above chapter).

Now for the individual assessment, starting with the 5,000 pip increment and work our way down. For all increments of pips we will start when trading 0.2 lots because when trading 0.1 lots all increments are exactly the same. Now when trading 0.2 lots we first of all notice that we can have a maximum of 7 open transactions at once, we only need a maximum of 6, so were safe here. The risk per trade at trading 0.2 is 2.67% which is also in the range we have worked out. At 0.3 lots we can see that our number of positions increases to 8 and our risk per trade decreases to 2.40% which is still in the range we picked out. From 0.3 onwards our number of possible open trades at once increases and our risk decreases. Also when getting to the point of trading 1 lot per position you can notice that the risk per trade is extremely low, at 0.85% of total account, which also doesn't fit in our range that we picked out. So from all the analysis above we can conclude that this is not the increment we are looking for. Now let's have a look at the 4,500 pip increment.

For the 4,500 pip increment when trading at 0.2 lots we notice that the number of trades open at once is exactly the same as the 5,000 pip increment, the only change here is the risk per trade which jumps a bit to 2.76% per trade. This still is within the range we have picked out. When trading 0.3 lots however our maximum open positions at once remains at 7, which is still more than our maximum of 6, and the risk decreases to 2.55% which is still acceptable. This increment of money management is better than the 5,000 pip one because it promotes faster growth while increasing risk only a little bit (0.09% at the 0.2 lot mark and 0.15% at the 0.3 lot mark). When getting to the 1.00 lot per position traded, we notice that the risk per trade is 0.94% which is close to the bottom of our range but still doesn't get there. So from all the analysis above we can conclude that this is not the increment we are looking for either.

Now let's analyze the 4,000 pip increment. When trading 0.2 and 0.3 lots we notice that we can have a maximum number of positions open at once of 7 and 7 respectively and a risk per trade of 2.86% and 2.73% respectively. When looking at the 1.00 lots per open position traded we notice that we have a risk per trade of 1.05%. All the criteria that we have set are met so we put a tick next to it and move on to the next increment.

For 3,500 pip increment we notice that, for 0.2 and 0.3 lots per position, our maximum number of positions open at once drop to 6 which is right on with what we have determined we need to have open at any one time. However the risk increases yet again by 0.10% and 0.20% for 0.2 lots and 0.3 lots respectively. We also notice that our risk when trading 1 lot per position increases by 0.14%. These risks are still within our ranges that we have picked out. Since all the conditions are met we put a tick next to this one as well and move further on.

For increments of 3,000 pips we notice one main difference from the other increments we have looked at. We can notice that the risk per trade increases when moving from 0.2 lots to 0.3 lots per position while for all the other increments the risk per trade decreased when going from 0.2 to 0.3 lots traded. The risk per trade for this increment only starts to decrease when moving from 0.3 lots to 0.4 lots traded, and onwards. As we can notice though the maximum risk per trade still fits within the parameters we have set, also when we look at 1 lot per position traded we notice that, while being higher than the rest, it still doesn't get above the 1.5% mark that we have set as our maximum limit. So we now have three different increments that we can analyze and choose which is right for us.

For the increments of 2,500 pips and down we notice that at the 0.3 lots per position traded our number of positions open at once decreases to 5, which is unacceptable because we need a total of 6 not 5. Also if you look further down the chart you notice that our account risked per trade, when trading 1 lot per position, increases above the 1.5% mark, which is not within our comfort range.

Now only the increments of 4,000, 3,500 and 3,000 pips remain to choose from. All of these are great choices, but you need to choose which is best suited for your style of trading and your comfort level. For example if you're a more conservative trader at heart then you might be more inclined toward 4,000 pip increments, but if you're more aggressive as a person you might be more inclined toward the 3,000 pip increment and if you can't decide whether you are aggressive or conservative then you might choose the middle path of 3,500 pips per increment. Either way whichever increment you chose you have to stick with it for quite a while, so choose wisely.

There are a few more things to discuss related to account management, while you start suffering a drawdown. When you start suffering a drawdown with all types of money management you adjust your position size down when your account equity goes below a certain level. For the example, let's say you chose the conservative route of money management of 4,000 pips per increment. Your current account equity is at \$23,000 and your trading 0.3 lots right now, and you start having a major drawdown of 5,000 pips (this is a massive number of pips to have a drawdown but just bear with this for example sake). We know that once we get underneath the \$22,000 mark we need to scale down to trading only 0.2 lots per position, and when we get underneath the \$14,000 mark we need to scale down to 0.1 lots per position. Ok now let's calculate how much we have lost in cash not in pips. So to scale back from 0.3 lots to 0.2 lots per position we need to lose a total of \$1,000 (to get from \$23,000 to \$22,000), which in pips translates to $\$1,000/\$3=334$ pips (the \$3 came from trading 0.3 lots which translates to \$3 per pip won/lost), now we have 5,000 pips - 334 pips = 4,666 pips left of drawdown. Now we know that to go back from 0.2 lots to 0.1 lots we need a total of 4,000 pips, which translates into, 4,000 pips multiplied by \$2 a pip = \$8,000, now we only have 4,666 pips - 4,000 pips = 666 pips left of the draw down. When trading 0.1 lots per position 666 pips translates to \$666, since for 0.1 lots it is \$1 per pip. Now for the total amount of money we have lost during this 5000 pip drawdown, $\$1,000 + \$8,000 + \$666 = \$9,666$ of total account equity lost (quite a lot right?).

There is one thing you can do to minimize the impact on your account equity that this drawdown can have. The trick is that when going back from 0.2 lots per position to 0.1 lots per position, you don't wait to lose all 4,000 pips to be able to scale down in position size, you scale back half way at 2,000 pips lost. Let's calculate with the example from above with a starting account balance of \$23,000 and trading 0.3 lots per position. As above when going from 0.3 lots to 0.2 lots per position we lose \$1000 and lower our drawdown to 4,666 pips. Now when changing from 0.2 lots to 0.1 lots per position we only lose 2,000 pips which gives us a total of \$4,000 lost and a remaining drawdown amount of 2,666 pips which is traded at 0.1 lots per position and amounts to a \$2,666 loss. Adding all the losses together we get $\$1,000 + \$4,000 + \$2,666 = \$7,666$ loss, which is \$2,000 less than the previous calculated drawdown. Now after the drawdown is finished to increase from 0.1 lots to 0.2 lots per position we need to use the same increments we have used when going down. So to get back to trading 0.2 lots per position we need to gain a total of 2,666 pips and to increase from 0.2 lots to 0.3 lots we need to gain back 2,000 pips, after which we start increasing account size normally. This really doesn't have any effect on lowering the amount of pips needed to be gained

back to reach the point where you were at the beginning of the draw down, it only has the psychological effect of losing less money in a drawdown.