

A Formula for Investing

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Most new investors want to know a quick, sure-fire formula for making money in the markets. Such a formula, of course, cannot exist. If it did, any business school purporting to teach such a formula would charge infinitely high tuition fees. Also, if enough people use the formula, it becomes worthless. Why? Because if everyone in the world is 6ft tall, no one is tall, everyone is simply average. If enough people have a supposed “edge”, that “edge” disappears by the very fact of its commonness.

While a formula for making easy money in the markets does not exist, a formula for sizing positions in a portfolio does. It is called the Kelly formula.

Named after the physicist John Kelly, the Kelly formula is used, explicitly or implicitly, by some of the world's best investors – Ed Thorp (quantitative investor), Warren Buffett (value investor), Seth Klarman (value investor), Bill Gross (fixed income investor), Jim Simmons (quantitative investor), Paul Tudor Jones (momentum investor) and Ray Dalio (global macro investor).

So what exactly is the Kelly formula? It is expressed as:

$$2P - 1 = X$$

Where P is the probability of a favourable outcome and X is the percentage of one's assets that should be invested in that outcome. If an investment has a 50% or lower probability of success, no amount of money should be invested. Naturally, this excludes almost every game in a casino, where the odds of winning are often just below 50%.

Such a simple formula hasn't won academic awards and Nobel prizes, probably because it is not complex enough. However, complexity should not be confused with accuracy. Long Term Capital Management, the hedge fund that collapsed in the late 90's used much more complex formulas created by an army of PhD's and Nobel laureates.

Most of the successful investors mentioned above probably use a fractional Kelly approach. For example, the formula states that if an investment opportunity has an 80% chance of success, you should bet 60% of your portfolio. A half Kelly would cut this down to 30% while a quarter Kelly cuts it down to 15%. The principle remains the same – holdings in a portfolio should be sized based on a conservative estimate of the probability of success.

At Tacit, we do not explicitly use the Kelly formula in making investment decisions. After all, we are not a quantitative investment manager with an army of physicists operating supercomputers. An exact application of the Kelly formula also requires the knowledge of precise probabilities and payoffs, which does not exist in the investment world.

However, we implicitly apply the principles of the Kelly formula when sizing positions. This means we will occasionally have large exposures to a particular market when the opportunity presents itself – like the UK market after the Brexit vote. This also means that we will occasionally increase the amount of cash in the portfolios when opportunities are rare.

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