

# Investing

by Chuan Chang, Aug. 6, 2018

I've been investing in stock markets since 1969 and below is a summary of what I have learned. I am not a financial advisor, and have not taken any courses in investing.

## Topics

- (I) Do you need a financial advisor?
- (II) Index Funds & ETFs
- (III) Making trades: the “uptick-buy rule”, or BUDS system
- (IV) Dividend Stocks
- (V) Bonds
- (VI) Annual and general stock behavior
- (VII) Portfolios
- (VIII) Investing Principles
- (IX) Conclusions

### **(I) Do You Need a Financial Advisor?**

**In the long run, no one can make money for you better than yourself.** That means hiring a financial advisor is, except for a few lucky exceptions, not the optimum thing to do; you must get involved and learn to invest. If you have never invested before, you may need some help for the first year or two; but my opinion is that you should try to become an independent investor as soon as you can (self-directed investing). This is because investing is a balancing act between risk and reward, and no financial advisor is brave enough to take enough risks to optimize YOUR portfolio or even to just keep an eye on your specific portfolio which is different from all his other 40+ customers' portfolios; besides, it's not his money! If you can't keep track of your own portfolio, how is a financial advisor going to keep track of the 40+ of his customers? Balancing risk does not mean taking risks; it means reducing it without losing all the opportunities; it means creating a portfolio that, statistically, will provide the best returns in the long run. Therefore, defining and managing risk is an important topic below. Although most financial advisors should agree that the information below is optimal, most will argue that each individual is different and needs a different portfolio; this is not a valid argument because you will never have the time to explain ALL the details of your situation, and if you tried, HE will not have the time to assimilate and retain all that information that is constantly changing.

Most advisors make commissions from sales and will try to sell you those products. We will see below that you don't need them.

Financial advisors tend to estimate the performance of his recommended portfolio in a dishonest way. The most common trick is to show you the past performance of his portfolio over a certain number of years with, say, an average yield of 7%. They argue that since yields compound annually, they apply this compound yield to your expected annual investments and show that, in 50 years with achievable annual investments, you will be a multi-millionaire! Note that compounded annual yield grows exponentially, but the reality is that short term real yields grow exponentially but long term yields are closer to linear. What gives? What happens is that the market crashes every 5 to 15 years, so the exponential growth gets interrupted. Since the financial advisor cannot predict crashes, he assumes no crashes, and comes up with an unrealistically high portfolio performance.

Conclusion: history has shown that financial advisors can not make money for you – if you are

lucky, he might, but if unlucky, you can easily lose money. This can be best understood if you are familiar with statistics and distributions, treated in section (II.2).

## **(II) Index Funds & ETFs**

**(II.1) The most powerful method for avoiding losses is to diversify, and the easiest way to diversify is the use of ETFs** (Exchange Traded Funds) especially in the beginning when your funds are insufficient to buy enough stocks for diversification. ETFs are not called Index Funds because many are not, and there are good and bad ETFs; the bad ones do not perform as expected, because how they are created and maintained is often so complex that most analysts don't even understand them. **The best ETFs are the "true" index funds: DIA (Dow Jones Index), SPY (S&P 500), QQQ (Nasdaq 100), and IWN (Russel 2,000, also IWM).** A few sector ETFs such as XLF (financial), XBI (Pharmaceutical, also IBB), FXI (China 25), etc., are worth considering; these have long track records of behaving as expected and pay decent dividends that are important because, over 30 years, dividends can double your investment if re-invested. Thus comparing the performances of dividend paying ETFs with high-flying stocks that pay no dividend is misleading because that greatly under-estimates the performance of the ETFs. **It is important to distinguish between index funds and ETFs because most ETFs are more like modified mutual funds.**

With more experience, you can consider funds that double the performance of their base ETFs, see below. For major market crashes, it is generally possible to predict when the market bottoms and starts the recovery. That is a good time to use these "ultra ETFs". Thus you don't have to "time the market" and sell on the way down (usually this happens so quickly that you can't catch them, and most bear markets produce "bear traps" on their way down), but at the appropriate time, you can trade the ETFs for their Ultras. Once the recovery is over and the risk of a downturn increases, you switch back to the ETFs.

There are now hundreds of ETFs; some are just re-named mutual funds - such as "intelligent ETFs". So be careful and check their cost structure, because some of them can be downright dangerous. The average of all mutual funds cannot beat the indexes because of the following:

### **disadvantages of mutual funds:**

- (1) cost is higher (typical turnover is 100%/yr)
- (2) the fund must pay capital gains tax even if you don't sell them, even when your account is non-taxable
- (3) inadequate diversification, usually inadequate transparency
- (4) human error, risk aversion, inadequate data, sector rotation, etc., can result in poor performance
- (5) liquidity issues: most investors buy mutual funds at the peak of a bubble (when the funds end up buying high) and withdraw at the bottom of a crash (when the funds are forced to sell low)
- (6) funds that liquidate because of poor performance are not in the average performance, so the average over-estimates performance
- (7) non-performing funds can go bankrupt or liquidate and can go to zero.

### **ETFs have the following advantages:**

- (1) instant diversification, maximum transparency
- (2) never goes down to zero, minimum cost
- (3) reflects the research results of the biggest investors since they control the markets (ETFs give you the best research free!)
- (4) especially useful for small portfolios

- (5) indices automatically delete poor performing stocks and add good performers over time
- (6) requires a minimum of monitoring/trading
- (7) they catch all the large stock moves (both up and down) within the index; but the downside of each stock is limited to 100% whereas the upside has no limit, thus favoring the upside
- (8) they reflect all of the effects of complex world political and financial factors on each stock in real time, something no individual investor or financial planner can keep up with; this greatly simplifies the investment process
- (9) ETFs pay no capital gains taxes because they never sell shares and you pay none until they are sold (none if your account is non-taxable)
- (10) many pay decent dividends
- (11) the largest ETFs are immune to sector rotation because they contain all sectors.

Of course, almost half of the mutual funds will outperform the index in any year, but nobody has found a way to identify these ahead of time. In fact, most funds that perform well for several years tend to underperform in subsequent years because of bubbles and sector rotation. This is why, since 2010, most giant portfolios such as CALPERS have been 80% ETFs; even the Saudi and Kuwaiti funds, in the \$billions, have been shooting for 40-60% ETFs because they didn't previously, and had fallen behind. We discuss below, ETFs that behave well; that doesn't mean they will not fall when markets tank; it only means that they behave as expected/advertised.

ETFs started as the Vanguard S&P500 Index fund and became popular because it outperformed practically everything else in the long run (30 years). Many beginning investors make the mistake of not diversifying. Whether the portfolio is \$3,000 or \$3 Billion, diversification is important. In fact, a \$3,000 portfolio crashing to \$30 is a total loss, whereas a \$3B crashing to \$30M (same percentage) still has a chance of recovering and may not destroy the lifestyle of its owner; therefore, smaller portfolios are more difficult to manage and ETFs become more essential.

That is, there is a critical savings amount required for sustainable retirement funding. Let's assume that a family needs \$100,000/yr in retirement: how much do they need to save, in order to retire without depleting their retirement savings (assuming no other income, such as Social Security)? Investments typically yield about 7%/yr, so that a \$1M account will yield only \$70,000, which is not sustainable; they need to save at least \$1.4M.

ETFs are evolving constantly; one interesting development is the ultra ETFs, that double the swings on both the short and long sides. Imagine what you can do by holding the ultra-longs on the way up and the ultra-shorts on the way down! Unfortunately, this is as impossible as choosing the best mutual fund or market timing or stock picking; that is the main reason why those methods can't beat ETFs in the long run. The Ultras are more volatile and volatility is a net negative in the long run for active traders (volatility has very little effect on passive, long term investors). The costs of ultras are higher, so if the market fluctuates but goes nowhere, the ultras lose big time. Below are some important ETFs and their ultras:

| <b>Short</b> | <b>ETF, Div. (2018)</b> | <b>Index</b> | <b>Ultra</b> | <b>Ultra-ultra</b> |
|--------------|-------------------------|--------------|--------------|--------------------|
| DXD          | DIA, 1.98%              | Dow 30       | DDM          |                    |
| SDS          | SPY, 1.73%              | S&P 500      | SSO          |                    |
| QID          | QQQ, 0.72%              | Nasdaq 100   | QLD          | TQQQ               |

|           |               |                |          |      |
|-----------|---------------|----------------|----------|------|
| TWM       | IWN(M), 1.65% | Russel 2000    | UVU, UWM |      |
| SKF       | XLF, 1.6%     | Financial (60) | UYG      |      |
|           | MCHI, 1.9%    | China          |          |      |
| FXP, YANG | FXI, 3.57%    | China 25, 50   | XPP      | YINN |

Other ETFs of interest are EEM, XLE, MDY, TAN, FAN, EEB, GDX, GLD, GLNG, OIH, DBA, MOO, COW (no kidding!), RDX, GXC, IFN, etc. However, most US investors will need only the top four in the above table, and perhaps have fun with the rest using “play money” to take advantage of unusual opportunities. **Only the top four should be considered true index funds.**

If you buy individual stocks, be prepared to have to do a lot of work for very little or no advantage in the long run, compared to ETFs. There are a few high flying stocks that look so tempting, but in real life, your chances of hitting them are slim and trying to catch them usually involve risks that can reduce your long term gains. Take an average high flyer like Ebay, which IPOed in 1998. Anyone who bought in the first three years made tremendous gains. However, most of those who bought after 2001 lost money, some by huge amounts, compared to buying DIA. There are also very few stocks like Apple whose buyers made huge profits if they had bought at any time between 2002 and 2012. However, for twenty years between its IPO in 1981 till 2001, it went practically nowhere, often trading below \$1, and those who bought after 2012 lost money compared to DIA. Thus ETFs like DIA beat inflation by just a little. This might seem meager compared some short term gains by high flying stocks. In reality, the ETF performance is hard to beat especially if the dividends are re-invested, which can double the ETF performance in 20 years, whereas high flyers rarely pay dividends. You also have the possibility of enhancing the ETF performance even more by judicious use of the ultra ETFs during the recovery after major market declines. **Ultras will frequently match the performance of high flyers at lower risk.** Brokerages rarely advertise ETFs and fund managers often pan ETFs unjustifiably because ETFs depress their earnings. ETFs are good investments because they are long term holdings, not quick trades that cannibalize stocks for quick profits with no benefits to the companies they represent.

**Conclusion: The largest component of your portfolio should be ETFs. This will greatly simplify the investing and, in the long run, give you better results than anything else.**

## (II.2) Statistics and Distributions.

Statistics and distributions are key concepts in investing. Statistics is important because it is always 100% correct, and anything that is 100% certain is very valuable in investing. The most important idea about statistics is that any investor has the highest probability to be in the majority. Thus, if you decide to be contrarian and go against the crowd, by the time the statistics are compiled a month or two later, you find that the majority of people had decided to be contrarian. Statistics alone is useless without some procedure for taking advantage of it, and the most important vehicle is the principle of efficient markets -- that the over-all market always takes everything into account and is always fair valued. The statistical chance that you are significantly ahead of the market is negligibly small. Thus if you find any inefficiency in a particular stock or sector, there is a good chance of making bigger profits. We examine statistics, distributions and market efficiency to try to understand why Rockefeller got so rich, whether humans can beat a bunch of chimps, why buying the best mutual funds don't make you rich, and why there is such a fuss about ETFs now. Moreover, there are some "new" funds that use the "130-30" principle to beat everyone else -- do these work? Also, what are some fundamental investing principles? I'm writing this partly to keep these ideas in my file. Finally, I will

report on the latest market reactions to the sudden rise in interest rates, the Chinese market, and the outlook for the rest of 07.

Are markets efficient enough to use the efficiency principle? People have time and again found special information that indicated that a certain stock is undervalued, only to find out that the market was right after all. But the most important consequence of efficient markets is that the markets are therefore event driven -- it is mainly the unforeseen events that drive markets, not the inefficiency; that is, even if you exploited all the inefficiencies, you are still at the mercy of unforeseen events because the markets are sufficiently efficient. This explains why the market can suddenly get very volatile when new news comes out.

To discuss how to use statistics and market efficiency, we have to know what distributions are. The graph of a distribution is a plot of some measurement against its parameter, such as number of people investing versus their profits. The measurement (number of people) is the vertical axis and the parameter (profits) is the horizontal. Most distributions of interest here are bell-shaped: there are few people who take huge losses, the maximum number of investors make a small profit, and there are very few who make huge profits. So the peak of the distribution may be at +7%, and the distribution tapers out to zero around -10,000% and +10,000%, in the real market place. If you now plot how mutual funds perform over 5, 10, or 20 yrs, you will get a similar distributions, but the distributions will be narrower for longer years because the probability of any fund performing well for more years is lower. The peaks of these distributions will still be near 7% per yr because the underlying stocks comprise the original distribution. They will probably be below 7% because they charge a fee. **This explains why ETFs do better than mutual funds.**

Now if you take a completely random set of hypothetical funds with random performance, they will also produce similar distributions. Therefore, the fact that a mutual fund performed well for 5 yrs does not mean that they will do well in the next 5 yrs. In fact, sector rotation would indicate that they may underperform when the sector rotates out, because funds that outperform were generally in the right sectors. **Therefore, I think it is silly to say that Rockefeller was a good investor because he got rich -- statistically, someone HAD to be at the head of the distribution regardless.**

How would a bunch of chimps do if they threw darts at a list of stocks and invested that way? They should produce a distribution very much like the human one if the market is efficient and event driven. Therefore, as long as you diversify, you will be well represented by the main distribution. **This chimp example explains why anyone can make money in a rising market and why everyone (including the best experts) lose during a crash.** Shorts make money during a crash, but a crash is a "rising market" for a short. I started investing at the top of the market in 1970, picked the 5 best performing mutual funds, and by 1975, had lost more than half my investment in spite of my regular additions every year because of the 1975 crash. I wised up and started other investments and by 1978, had recovered my losses (but the mutual funds were still underwater), and by 1980, I was making profits. Practically every advice I took from the brokerage lost money, and at least 80% of my own decisions were profitable.

### **(III) Making Trades: the "uptick-buy" rule**

It is useful, and sometime critical, to have rules on how you buy and sell shares. **The best rule seems to be: buy on upticks and sell on downticks.** I call this the **Buy-Uptick and Sell Downtick or BUSD** rule. Thus, if you want to sell, but the stock is rising, there is no need to sell. This rule simplifies the decision making process. But deciding whether the price is falling or rising is not easy. If a stock has fallen 2%, but it had fallen 4% earlier and has risen 2% since, has it fallen or is it rising? Thus in

general you need more info, such as long term trends and stock fundamentals, to determine the up or down trend. You must also decide whether to trade at market (generally best) or at limit price (if the spread is too large or the price behavior is abnormal). No financial advisor can make such real-time decisions for you and will almost always trade without the BUSD rule and at market price.

The main advantage of the BUSD rule is that it catches all the stocks that keep rising, and gets rid of all those that keep falling and can get you out of a market crash before it is too late. If the market rises and falls on alternate days, this rule guarantees that you lose money. If, however, the market rises for two days in a row and falls for two days in a row on average, you break even. Statistically, by following this rule, you might lose a little in the long run for each trade, but the advantages between trades outweigh the disadvantages for example, by catching stocks that double or more in price.

Especially with ETF portfolios, there is minimum need to trade. For most investors, active trading generally results in smaller profits. Thus volatility is the investor's enemy, creating fear and whip-sawing the investor into buying high and selling low. However, there is no question that the bottom of market crashes is the best opportunity to invest and trade. **It is of utmost importance to not despair during a crash but to look for opportunities in it, see below, (VI.2).**

#### **(IV) Dividend Stocks**

Dividend paying stocks belong in a portfolio because they provide a steady income regardless of market conditions. However, it is a mistake to think that dividends will protect the stock price in a market downturn, because they can be more volatile than ETFs and their capital losses can wipe out their dividends (and more!) during a market decline. As with any investment, buying them at the bottom of market crashes can literally pay outsize dividends; for example, stocks paying a 5% dividend can effectively pay over 10% (a 100% increase!) at the bottom of a 50% market crash. In addition, when markets finally recover, you gain another 100% of capital gains. Thus buying dividend stocks at the bottom of crashes is one of the most profitable investment opportunities. However, in order to execute such a scheme you must familiarize yourself with dividend stocks that behave well, and the only way to do that is to invest in some all the time.

Poorly performing dividend stocks, for which dividends evaporate during a market crash, will not perform well in the long run, so look for dividend stocks that keep their dividends constant during a market downturn. **Preferred stocks** often have higher dividends than utility stocks and are worth considering as long term investments.

#### **(V) Bonds**

I have not invested in bonds because bonds are too difficult to manage on your own – you generally need help from a broker, and I believe that only you can make money for you. But if you already have a financial advisor who recommends bonds, here are some bits of info that can be useful. Bonds are different from bond funds. If interest rates rise, bond funds will decline and you may never recover your principal, but bonds will always return your principal if you hold them to maturity. For this to work, you need to “ladder” the bonds (purchase bonds that mature at different times), so that you always have some bonds you can sell without losses, in emergencies that require cash or the bottom of market crashes that provide outsize opportunities to invest. Shorter term bonds do not fluctuate in value as much as long term bonds because they are always closer to maturity and will return their principal soon, but their dividends are lower.

#### **(VI) Annual & General Stock Behavior**

Because markets are basically efficient, they are mainly controlled by unforeseen events which

makes it impossible to predict market behavior. However, there are some general forces that operate consistently every year.

(1) January-February: there is selling pressure from those who had planned to sell, but postponed it until the new year in order to delay paying taxes on profits by one year. This puts pressure on stocks that rose in the previous year. But there is pressure to buy from investors putting their IRAs and 401Ks to work. This creates demand for stocks in tax-free accounts. This can create a great January in optimistic years when stocks are expected to appreciate.

March-April: tax refunds become cash looking for investments, which helps to lift markets.

May: the famous market rule is: “Sell in May and go away”. This may be caused by the “summer doldrums” (June-August) with people going on vacations while the schools are out.

September- October are the scary months during which some of the major crashes have occurred. Funds sell stocks with losses, so that they can report the losses in time for their clients to claim them for the tax year ending in December.

November-December is the time for a “Santa-Claus rally”, with markets rising most years. One reason is “window dressing” buying by funds to make them look better. The exception is stocks that declined during the year, that are sold by individuals for tax loss selling.

(2) Stocks generally form bubbles and then crash every about ten years. Most small investors are whip-sawed out of the market during crashes and then compound the mistake by waiting until the next bubble to invest. Investors sell at the bottom out of necessity; everyone has a minimum portfolio below which further losses will lead to major lifestyle changes they cannot tolerate, and they cash out to protect themselves. Such disasters can be prevented by advanced planning and/or risk tolerance based on understanding the markets. Doing the right thing doesn’t always save you; for example, during the 2000 tech bubble, many hedge funds went bankrupt because they shorted the bubble stocks, but those stocks kept rising until the funds went belly up. **Every major market crash has been “investment opportunities of a life-time”**. It is time to exchange the ETFs for ultra ETFs and/or dividend funds whose dividend percentages have skyrocketed.

## **(VII) Portfolios**

History has proven that, especially for individual investors (and also for a majority of professionals) market timing and stock picking does not work in the long run. This information was not available until recently because it was not widely disseminated and is the reason for the growing popularity of ETFs especially among professionals. Thus the largest component of a portfolio should be ETFs; the next two should be cash and dividend paying stocks. Finally, you should learn the ropes of investing by experimenting with trading high-beta stocks using a small portion of the portfolio that is sufficiently small that if you lost most of it, it will not materially limit your lifestyle. Statistically, 90% of high beta stocks lose money, but the 10% that succeed can be extremely rewarding and can grow in size to become larger than the portfolio’s major ETFs.

Small portfolios are harder to manage than larger ones because they are difficult to diversify. A loss in a small portfolio does not appear to be as painful as the same percentage loss in a large one; however, such losses can set the portfolio back for a long time. Therefore, it

is important to treat small portfolios like a large one: imagine that you have a \$1 million portfolio, configure it optimally, and then create a small portfolio with the same percentage of components; otherwise, small portfolios will not perform as well as larger ones. Don't model a huge portfolio (>\$10M), because such portfolios can have a much larger cash component to reduce risk – it is more important for large portfolios to reduce risk than to gamble for higher gains.

### **(VIII) Investing Principles**

(1) One of the most important and usually overlooked principle of investing is that of market efficiency; **in an efficient market, to every rule, there is an equal and opposite rule**, very similarly to physics, where to every action, there is an equal and opposite reaction. This is one major reason why investing is so difficult; it tells us that doing the right thing doesn't necessarily make you rich. For example, one investment rule says to let your profits run; on the other hand, you must re-balance your portfolio periodically. Another says that you must diversify to be successful; on the other hand, the only way to really beat the market is to become a good stock picker, etc., etc. Therefore every time you decide on an action, it is prudent to ask what the opposite action is. Understanding this principle can help you understand those geillions of mysteries in the marketplace, such as “why can't you beat the markets by buying the best performing mutual funds?”.

(2) Even with a low risk approach, you can still lose money; therefore, optimizing the portfolio is a process of avoiding losses. Even cash can lose money by inflation, in addition to lagging behind better investments; most retirees do not have sufficient cash to last them through their retirement. Therefore, risk is a necessary component of investing. Portfolios designed with too much safety will not perform well – insurance always comes with added costs; therefore, you should buy insurance only when absolutely necessary, or if you can't afford the potential huge losses. The rich almost never need insurance, and come out ahead without it.

(3) Leading and lagging indicators, and accurate indicators, are extremely important in investing. Statistics are almost 100% accurate but they can't predict the markets because statistics are lagging indicators; they are compiled after the fact. For example, you might decide to be contrarian and go against market trends; when the statistics become available later on, you may find that the majority of investors went contrarian! The markets themselves are leading indicators because markets look ahead about six months. Employment and earnings are also leading indicators.

(4) **The BUSD (buy uptick) rule can feed market bubbles and accelerate crashes by turning everybody into momo (momentum) players. My opinion is that the FED, charged with monitoring inflation, deflation, and employment, should also be charged with monitoring market bubbles.** This can be accomplished by stress testing the economy, just as the banks were stress tested after the 2008 market crash. Before Greenspan, the general consensus was that the FED had no power to influence the markets. Since then, starting with Bernanke, the FED has become a major force in controlling the markets; therefore, they are already involved in monitoring the markets by necessity and this fact should be made official. Bubbles form not because of human greed or government policies, etc.; they form because of what I call the “competition trap”. If everybody is making money using certain methods (legal, fiscally correct, or not), competition compels everybody to use those methods; otherwise, they fall behind and go out of business. Even rating agencies fall into this trap because one of the criteria for good investments is that they make money; so as long as the bubble makes money, it is rated a good investment. Therefore part of stress testing should include rating agencies. Stress testing the economy could have prevented the 2008 housing bubble and crash.



ETFs can be a great antidote against bubbles because ETF owners are long term investors and the major ETFs are too large to be manipulated.

### **(IX) Conclusions**

Everyone needs a financial advisor to get started for the first year or two. However, historical financial statistics are such that, for the majority of investors, financial advisors cannot make money for you (meaning keeping up with the average performance of the markets) in the long run, even if you assume that you keep the same advisor all your life. Everyone must learn to invest for himself; i.e., **become a stock entrepreneur**, not just an investor. However, that is an impossible task for the majority of investors with a full time job. **ETFs can simplify and make this task feasible**; more importantly, statistically, the performance of your portfolio should, on average, beat those of financial advisors in the long run unless they also use ETFs, which they are increasingly doing.