The Bogleheads' Guide to Investing

Chapter 1 - Choose a Sound Financial Lifestyle
- Invest 10% of net income
- Before investing
    - No paycheck mentality
    - No credit card / high interest debts
    - Emergency fund
- Focus on net worth, not net income
- Emergency fund should be ~6 months worth of income and liquid (savings account, credit union account, money market mutual fund)

Chapter 2 - Start Early and Invest Regularly
- Rule of 72: Investments double in 72 divided by the annual rate of return
- Invest early and regularly because of compound interest - exponential growth
- Save 20 cents per dollar
- Saving is the largest determining factor for late life wealth
- Save ~10% of each paycheck
- Saving more money is cheaper than earning more money due to taxes
- Max out Roth IRA every year (tax free, high rate ~8.5%, annual limits, must have income to do but not too much)
- Low interest debt to boost earning potential can often be reasonable. For example on a low rate mortgage or loan under the average rate of return for an index fund, it'd be better to not pay it off and invest the money instead because of the higher rates of return.

Chapter 3 - Know What You're Buying: Part One: Stocks and Bonds
- Stocks represent an ownership interest in a corporation and can be traded via exchanges. The price is what others are willing to pay.
- A bond is essentially you giving someone else money on the promise that you'll get back money and then some determined by the yield at some maturity date. It's an IOU with interest
- The safest bonds are treasury issues. These include Bills, Notes, Bonds, TIPS, EE Bonds, and I Bonds. Interest is exempt from federal taxes.
- T Bills are especially short term ones. (Less than a year). 2-10 years are T Notes. 10 years plus is T Bonds. They are basically just called Treasuries.
- TIPS means Inflation-Indexed/Protected Securities. They offer some protection against inflation.
- There are Savings Bonds - I Bonds and EE Bonds. They need to be healed at least a year and often more to avoid any (minor) penalty. Yields can often change and are periodically announced. The two differ in the

way yields are set.

- Nowadays when EE Bonds are sold they have a fixed rate using a hidden formula, but the rate is fixed once bought.
- EE Bonds have a minimum guaranteed yield of 3.526% if held for 20 years.
- Savings Bonds can be tax-deferred for up to 30 years. Generally free from taxes.
- These bonds are sold at regularly scheduled auctions.
- They can be purchased for you or directly at treasury direct.
- Mortgage Backed Securities are made up of a variety of mortgages grouped together. Values can fluctuate, but are backed often by government agencies and thus are fairly reliable. They are very susceptible to interest rates and their changes. They are often best when interest rates are steady for long periods of time. GNMA ones are the most protected, others have a slightly higher degree of risk as they are not fully 100% US backed, but just by departments.
- Corporate bonds are issued by corporations with returns based on creditworthiness of the corp, current yields, demand, and the call feature.
- Municipal bonds are on the state and local level. They are often free from federal taxation and local/state taxes. They can make sense for people in higher tax brackets because of this. Be careful to check if the AMT applies. They are often insured, but that insurance is only as good as the insurance company. A bit more risk.
- While bonds have a maturity date, bond mutual funds don’t since they are constantly rebuying as items in the fund mature. These often instead of a duration as a kind of average to see what you should expect. The duration is directly proportional to the volatility in an environment with a changing interest rate.
- Bond and bond fund values move in the opposite direction of interest rates. Interest rates going up 1 percent corresponds to a bond value decrease of 4.3 percent for a 4.3 year duration. That being said, an increased interest rate will technically increase the yield in the long term making up for things a bit.
- Invest in bonds that match your time horizon
- Don’t try and time interest rate rises
- The longer the duration the riskier
- Bonds are often not correlated with stock risk and can thus be used to diversify against stocks
- Effective theory: Own X Percent in bonds that matches your age with the rest in stocks.
- Owning Individual Bonds

    - Advantages:
        - Guaranteed the return of principal
        - No ongoing expenses once purchased
    - Disadvantages
        - Non-treasury bonds require a broker and thus fees
        - High minimums could be a barrier to entry
        - You can't reinvest dividends and have to manage that yourself
- Owning Bond Mutual Funds
    - Advantages:
        - No costs for buying or selling
        - Inherently diversified
        - Allow check writing
        - Automatic reinvestments
        - Small minimums
        - Professional management
    - Disadvantages:
        - Costs and expenses
        - You technically can't be assured of getting principal back since there's no maturity date
        - Bond managers can pick wrong

Chapter 4 - Know What You're Buying: Part Two: Mutual Funds, Funds of Funds, Annuities, and ETFs

- Mutual funds pool money to buy many stocks, bonds, etc. You essentially end up owning a fraction of everything managed by the fund managers
- Official mutual funds are governed by the Investment Company Act of 1940. Different funds invest in different things and with different strategies (aggressive, conservative, etc)
- They are generally described on a high-level in duration for bonds:
    - Short = 1-4 years
    - Intermediate = 4-10 years
    - Long = 10+ years
- Some funds are "balanced" and invest in equities and bonds
- The two major mutual fund management styles are active management and indexing.
- with indexing a benchmark (such as the S&P500) is replicated as closely as possible and that's what makes up the funds
- Active management is when the contents of the fund is intentionally setup to try and beat a benchmark. Note that it's very difficult to outperform index funds overtime; very few have.
- Mutual Funds have a Prospectus that explicitly chart out their objectives, costs, past performance, etc. It should always be read.

- Mutual Funds Advantages:
  - Diversification (because they are made up of multiple things)
  - Professional management
  - Low minimums (minimums start around 1k)
  - No loads or commissions (no broker)
  - Liquidity
  - Automatic reinvestment of gains
  - Convenience
  - Customer service support
  - Communications and record keeping
  - Variety
- Mutual Funds are strongly suggested by book
- There are also Funds of Funds (they invest in a variety of funds so you don't even need to pick that out) — a higher level of abstraction on investment strategy services. They basically start with a ratio of bonds and stocks and go from there.
- Annuities are an investment with an insurance wrapper.
- Fixed annuities pay you a specific rate of return for a specified time before switching back to market rates.
- Annuities often offer a higher rate upfront before falling to a lower one. And withdrawing early can have strict penalties that can make it not worth leaving, can be left trapt.
- Annuities often have high expense rates as well compared to index funds.
- Variable annuities can often be safer because the invested money is segregated from company operating funds.
- Both are tax-deferred
- It seems annuities are generally a bad idea
- Exchanged-Traded Funds (ETFs) are mutual funds that trade like stocks on an exchange. They are generally low cost.
- ETF's thus have prices that change constantly unlike a mutual fund that has a daily net asset value (NAV)
- ETF's often have commissions though. They can cost slightly more due to premiums (but this is often minor). ETF's are plentiful though and can cover niche's for advanced investors.

Chapter 5 - Preserve Your Buying Power with Inflation-Protected Bonds

- Inflation is insidious because it eats away at future buying power
- Conventional wisdom says equities are best for beating inflation - but this isn't always the case
- With high-inflation ultra safe T-Bills can actually lead to negative investment (or at least a bad one)
- I-Bonds are protected against inflation based on how it's yield is done.

Specifically:
    - They have their typical real/fixed rate
    - A twice annual inflation variable adjustment rate
- The one way the above can go wrong is getting a bad rate and then selling in a high tax bracket. But this can generally be avoided by deferring them for up to 30 years when you are in a lower tax bracket
- You want to minimize tax bracket, maximize fixed rate, and maximize holding period
- Another option is TIPS. They can be bought at treasury auctions, secondary markets, or a TIPS fund. A fund can be nice and flexible, but if you're going to hold a long time then just buy them at the auction for least risk and least expenses. - Unless you like the ease/flexibility. Not a. big deal either way.
- TIPS are best in a tax-deferred account. It could still be worth it in a taxable account if your tax bracket is slow and the difference between it's rate (generally higher) and I bond rate is large enough. The main issue is needing to pay taxes on something you won't receive for a long time. State taxes can be tricky for this. Be careful of taxes as they can bite you for TIPS in a high income tax bracket.
- It's best to do calculations for TIPS and I-Bonds to see which works best for you

Chapter 6 - How Much Do You Need to Save

- Factors to consider:
    - Amount saved
    - Current age
    - Retirement age
        - Good default for uncertainty is when you'll be eligible for full Social Security benefits
    - Life years after retirement age
        - Good number nowadays is 30 years
    - If you want to leave an estate
        - Put yourself first
    - Rate of return on investments
        - Their are expected future averages like portfoliosolutions.com based on high-level categories
        - Do this as even a high-level idea is good
    - Inflation
    - Possible inheritance (for yourself)
        - Don't plan on this
    - Other retirement income sources such as pensions, Social Security, reverse mortgage, etc.

Chapter 7 - Keep It Simple: Make Index Funds the Core, or All, of Your Portfolio

- Passive simple (index) investing over 20 years generally beats 90% of actively managed funds
- Anti-Investment Principles:
    - Don't settle for average.
    - Listen to your gut.
    - If you don't know how to do something, ask.
    - You get what you pay for.
    - If there's a crisis take action.
    - History repeats itself.
- Long term yields are consistent but short term are volatile, so being passive can pay
- Indexing is effective because:
    - It's cheap - this cost adds up drastically as compounding effects it too (reinvestment)
    - Tax efficient
    - No need to hire a money manager, but has a solid basis
    - Inherently diversified
    - Easy to use
- Index funds should inherently be cheap so expect expense ratios of 0.5% max

Chapter 8 - Asset Allocation: The Cornerstone of Successful Investing

- Efficient Market Theory argues you can't beat the market generally because all information is already priced in. It's largely true.
- Modern Portfolio Theory argues that by investing in non correlated securities one could create a portfolio with lower volatility and higher return than investing in any specific security.
- Studies have shown that portfolio ratios (asset allocation) enter mines the majority of the performance of an investor. Active management often costs.
- Questions to ask
    - What are your goals?
    - What is your time frame?
    - What is your risk tolerance?
        - You can deduce this by thinking about when you would sell in a bear market as a gauge - don't go to this point .. it's unsuitable then
        - You should not worry during the day about your investments - if you are the risk tolerance likely isn't right

        - Consider adding 10 to 20 % more bonds than you think you need for safety if you've ever experienced a bad bear market
    - What is your situation?
- You can answer this by
    - Using the bonds equal age rule
    - Look at ratios and their results in a table
    - Online questionnaire tools, such as Vanguards
- You should also diversify on the sub portfolio - such as which stock funds you own; avoid focusing on arbitrary sector funds. Try not to go over 10% in any one area if you.
- There are also Real Estate Investment Trusts that behave differently than stocks and can be a good non-correlation. Try not to exceed 10% though.
- International stocks are a good form of diversification as well. Consider 20 to 40% allocation.
- A single diversified bond fund can be enough such as a Total Bond Market index fund. Often intermediate term.
- Generally avoid junk bonds as bonds are best meant for safety not risk. Stocks can be more efficient. They are also correlated with stocks meaning they aren't as safe.
- Consider VTAPX as well, a TIPS fund
- See high-level suggestions on page 103

Chapter 9 - Costs Matter Keep Them Low

- Read the prospectus to determine fees
- Sales Charge on Purchases
    - Discounts at high purchases
    - Often this is not reflected in return rate calculations, so this has to be applied to your input
- Deferred Sales Charge
    - This is essentially a charge to sell. But if you hold long it's generally 0. But there can still be a 12b-1 fee.
- Avoid load funds ^
- No load funds have no commission but they do have expenses.
    - Purchase fees
        - To account for the buying ; discourages market timing
    - Exchange feeds
        - To discourage market timing and administrative costs ; discourages market timing
    - Account fees
        - Usually used as a minimum ; discourages market timing
    - Redemption fees
        - A selling fee essentially; discourages market timing

    - Management fees
    - 12b-1 fees
        - Paid to cover expenses of fund
- Use expense ratio as a summary
- There are other fees not covered:
    - There is a cost every time something is bought or sold, so turnover of funds can cause expenses. Often you want to minimize for turnover.
    - Many of these details are marketplace internals involved in trading, supporting the above point.
- These fees are significant because they factor into compounding.
- So focus significantly on these and optimize with index funds; in fact stats show low cost correlates with performance

Chapter 10 - Taxes: Part One: Mutual Fund Taxation

- Taxes, much like cost, can drastically affect investments
- Two sources of mutual fund income are subject to tax: capital gains and dividends
- Dividends are more impactful than you think, supplying 35% of total return on average over a long time. Most stocks in the S&P500 pay them.
- Nowadays qualified dividends (which are most) have new tax laws, specifically the maximum rate of tax was:
    - 0% if it would otherwise be taxed at 10 or 15 %
    - 15% of any amount that otherwise would be taxed at rates greater than 15% and < 39.6%
    - 20% for above
- The low rates on dividends increases the tax efficiency of stocks compared to bonds that don't have dividends where the yield is regular income tax
- For the above reason (and because tax is low for capital gains), stocks are best in taxable accounts and bonds in tax-advantaged accounts
- For the above reason check that your mutual fund is mostly qualified dividends
- Note that international stocks funds are eligible for a foreign tax credit
- A capital gain occurs when a stock or bond is sold for profit. It's the difference between the purchase cost of the asset and the sale price
- If a fund has a net profit the capital gains are passed onto fund shareholders via the 1099-DIV. Losses are carried forward.
- Be careful to check a prospectus to see the amount of a funds unrealized gains or losses. You want low turnover naturally
- Short term gain is under a year and long term is over. Short term are taxed at income rate while long term is max 15% (approx half)
- So:

    - Favor funds with qualified dividends
    - Favor funds with low turnover
    - Favor tax efficient index funds and tax managed funds
- Because of tax considerations you want to hold these funds when in a taxable account. As such, active funds are likely bad because if you ever want to switch you pay a high price. Managers often change every 5 to 10 years so chances are you'll want to.
- Why to use tax managed funds and how they do it
    - Low turnover - less changes, less gains, less taxes
    - HIFO accounting - sell highest cost first to minimize capital gains and thus tax
    - Tax-loss harvesting - accumulate tax losses to offset capital gains from winning stocks
    - Selecting low dividend paying stocks - because dividends pay fund expenses first and the remainder is passed on
    - Holding securities for long-term gains - Try and hold longer than one year
    - Use redemption fees - discourages shareholders from selling resulting in capital gains and trading costs
- Key strategies:
    - Keep turnover low; hold funds forever
    - Use tax-efficient funds when in taxable accounts (low-turnover / tax-managed)
    - Avoid short term gains taxes.
    - Buy fund shares after the distribution date - So you can wait as long as possible before taxes come
    - Sell funds just because the distribution date
    - Sell profitable shares after the new year so it can be reported a year later
    - Harvest tax losses
        - Note when doing this you have to wait 31 days before repurchasing your losing fund (if you want to)
- Municipal bond bund invests in mostly federal tax empty bonds. They can be a good option if you have a high income tax. But can't fit bonds in your tax deferred accounts
- If you have to put a bond in a taxable account then S and I bonds are good because of 30 year tax deferrability

Chapter 11 - Taxes: Part Two: Managing Your Portfolio for Maximum Tax Efficiency

- Tax advantage of IRS tax-favored retirements plans (401K, 403b, IRA, etc)

- 401k lets you devote wages to a plan on a pretax basis. The contribution limit is 17500. At age 50 you can do an additional 5500 on top of that. Employee contributions are not counted as income (but are a wage subject to Sociality Security, Medicare, and unemployment taxes)
- Some 401k advantages (generally):
  - You can have other retirement plans too
  - Automatic withholding
  - Flexibility in contribution amounts
  - True vest
  - Most plans offer employer matching contributions
  - Can contribute more to a 401k than IRA
  - Choice of investment options (mutual funds)
  - Can get a withdrawal loan
  - You can roll over 401k into an IRA or a new employer's 401K (it's portable)
  - There is a protection from claims of creditors
- Some 401k disadvantages:
  - Administrative and investments costs are high
  - Limited investment options
  - Limited advice and info
  - Capital gains are converted into ordinary income
  - Access to money is restricted
- The worst part is often obscure fees, namely:
  - Plan administration fee (customer service, record keeping, etc)
  - Investment fees are the largest fees and they come from management
  - Individual service fees for taking special actions such as a loan from the plan
  - Sales commissions can eat a lot at cost
- You can find hidden fees by
  - The prospectus
  - Yearly account statements (red flag if getting this is hard)
  - Aim for employers that pay the administrative expenses
- If your company plan isn't great:
  - Invest up to the match
  - Invest in an IRA up to the maximum
  - Contribute to the 401k up to the maximum
  - Additional funds should go in tax efficient mutual funds
- 403b's are like 401k's but for non-profit entities
- The problem with 403b's is high cost annuities - which aren't helpful in an already tax advantaged account. Likewise for commissioned options, which are inherently not great.

- IRA is a personal savings plan that givers you tax advantages while saving for retirement. Contributions are generally tax deductible
- IRA contributions max at 5500 and 6500 over 50.
- All withdrawals are taxable at the marginal income tax rate. There is a 10% penalty prior to age 59.5. There are exceptions for medical cases, etc.
- There are non-deductible IRA's, they are generally bad
- There is a tool for high income individuals that can't contribute to a Roth IRA to do a back-door one. They can use a non-deductible and then convert.
- Roth IRA's are a bit different than traditional IRA's (TIRA's). They are like an IRA in reverse. The contributions are not deductible, but the withdrawals are not taxed at all (they are partially for nondeductible IRA's)
- It can be difficult to choose amongst IRA's
- TIRA reasons:
    - Income is too high for a Roth
    - Income in retirement to be less than now
    - Future tax rate will be lower
    - Need tax deduction now
    - May provide better protection from creditors
- RIRA reasons:
    - Higher future tax rates
    - Roth IRA savings are worth more (after tax is better than pre tax because investments generally grow)
    - No penalty on early withdrawal of contributions
    - Don't affect social security for AGI
    - Can keep past 70
    - No tax for heirs
- Place your most tax-inefficient funds into tax deferred and put what's left in taxable; look at guides to help classify
- Key points:
    - Use tax advantaged accounts
    - Buy funds after the distribution date
    - Place tax-inefficient funds in tax advantaged accounts and visa-versa
    - Avoid balanced funds in taxable accounts
    - Keep taxable fund turnover low to avoid capital gains
    - Avoid short term gains by holding for over 12 months
    - Sell losing shares before year end (tax loss harvest)
    - Sell profitable shares after the new year (to delay tax payment) to invest more sooner
    - Consider municipal bonds and US Savings bonds for taxable accounts

  - Consider converting to a Roth for years of low income

Chapter 12 - Diversification
- Diversification is essentially hedging your bet; not putting all your eggs in one basket; etc
- Not only can it make your investment less riskier it can result in making more
- Some research suggests 20 stocks isn't enough, even 200 might not be enough (optimally). Buying all might be optimal, but this often isn't practical and can result in high fees.
- For the above reason, mutual funds can be ideal
- Don't just diversify stocks, diversify on a higher level and own bonds too (because they and bonds don't correlate too well historically)
- You can look up correlation coefficient tables to see how well your different investments are correlated (less correlated = more diversified, so optimize for this, a low R value)

Chapter 13 - Performance Chasing and Market Timing Are Hazardous to Your Wealth
- Historically past performance does not predict future performance (despite this ~75% of investors engage in behavior based on this)
- Index funds may not do particularly well over time, but they do in the long term.
- Even using past performance to pick out mutual funds has gone well.
- Avoid trying to time the market (predicting short term / upcoming changes), same reason as above.
- For the same reason above most newsletters and tv shows about this don't work as well
- Even in studies with just experts they failed to time the market even over longer durations
- Most say the same lessons apply to the bond market - in fact even more so due
- For this reason, stick to your plan if it makes sense - i.e. invest long term

Chapter 14 - Saavy Ways to Invest for College
- Skipped

Chapter 15 - How to Manage a Windfall Successfully
- Skipped

Chapter 16 - I Helped Put Two Children Through Harvard — Broker's Children
- Brokers, Financial Advisors, etc, can generally be a bad idea due to more

limited offerings (ones they prefer in some cases), misaligned incentives, costs eating the power of compounding interest, and that much high-level advice can be gotten through simpler and cheaper means
- If you do use an advisor, make sure they are FINRA compliant/registered
- CFA's and CFP's are even better because they are analysts and/or have gone throug ha fairly rigorous education, but still see point 1. These are ideal if you do go this route.
- Don't go with people that make comissions, including fee-based. And beware of costs.
- One time fee and hourly are often ideal, albeit a bit more expensive in the short term. Some places offer this.

Chapter 17 - Track Your Progress and Rebalance When Necessary
- Rebalancing is bringing the portfolio back to the target asset allocation after it naturally changes overtime due to market force or life events causing you to want to change those asset allocation percentages
- You generally naturally have to do this at some point because of market forces. You will naturally sell high and buy low if you do those because successful investments will dominate and be the ones you need to sell off. This may seem counterintuitive to sell something doing well, but it hedges against risk. Plus performance can't be predicted.
- Historically rebalanced portfolios did better
- It's important to have an asset allocation plan so you can detect when you need to rebalance. Remember this can be on multiple levels due to sub-allocations
- There are trackers to help with this (online)
- Consider costs and taxes when rebalancing (realizing capital gains, fees from trading, etc).
- Studies show 18 month rebalancing can be ideal
- Another technique is based on percent difference calculations between current and target asset allocations. It can be a fixed number or variable.
- You can rebalance by:
    - Withdrawing (but maybe not ideal)
    - Investing new funds
    - Rather than have distributions reinvested you can redirect them to rebalance
    - Some services offer this
- Rebalance tax deferred account first and whenever possible due to no tax consequences
- Factor in tax loss harvesting as part of rebalancing

Chapter 18 - Turns Out the "Noise": It's Almost Always Wrong

- Most day to day investor articles/newsletters and programs are not helpful (a corollary of past performance doesn't predict future). Use the strategies given earlier in the book and an end result is you really have no reason to engage with this media - so don't give them your money - same for complicated "investing classes" etc

Chapter 19 - Master your Investments Means Mastering Your Emotions
- Avoid any emotion driven activity - ask yourself if it plays a component before making a decision; always be rational. The plans put forward in this book don't require much active engagement so you shouldn't be engaging your emotions much
- See chapter for more strategies

Chapter 20 - Making Your Money Last Longer Than You Do
- Skipped

Chapter 21 - Protect Your Assets By Being Well Insured
- Insurance should be considered as part of your portfolio to protect against risk (think about all forms, life, health, property, etc)
- Focus on insuring critical things first
- Don't ignore insurance just because something is very unlikely, that's exactly why we have insurance. Try to have a bit for everything to diversify against risk
- Get broad coverage insurance, avoid specific circumstance insurance as those products are often purchased emotionally and thus priced emotionally
- Insure against the big catastrophes that you cna't afford to pay for out of pocket
- Carry the largest deductible you can afford (reduce premium)
- Only buy insurance from the highest/best rated companies
- When buying life insurance by term insurance, other options are basically investments that would be more efficient in the stock market (don't mix the two). Buy for the longest term that you can afford
- Don't buy life insurance if you don't have any serious dependents and thus don't need it; it's not really cheaper to buy it earlier in life
- Seriously consider disability coverage. Make sure it covers your inability to work in your own occupation, short waiting period, it covers partial disability, it lasts until retirement. There's a 20% chance that a 35 year old will be disabled by 65.
- Buy house or renters insurance and make sure to cover all cases (some types are excluded, cover them too if at all reasonable)
- Consider keeping a list of everything in your house - pictures are even

better
- Consider getting blanket legal liability protection for 1 million or net worth. It's often cheap.
- Due to high nursing costs nowadays consider insurance for long-term care. This is when you have assets of between 200k and 2mil that you should consider this. Look for inflation protection when buying. Make sure there aren't exclusions for specific diseases.
- Look for high rated insurance companies and individuals that come highly recommended

Chapter 22 - Passing It On When You Pass
- You need to make ~>6 million to have to pay "rich" estate taxes
- You should have a will. Things in there generally have to go through a probate, a lengthy process where the executor does all of the executing. Some of this can be bypassed with a trust or special distributions / beneficiaries for certain accounts (though there will still be taxes).
- A living trust avoids probate but is generally more expensive and complicated to setup and maintain. You must transfer all assets there, but by being the primary trustee you still essentially control it.
- It's important to put everything in writing.
- You can technically avoid capital gains by passing them down in theory (only in taxable accounts)
- You can give a gift of ~15k per year; medical expenses and tuition have no limit