



WANNA BUY A YACHT?: SAVING FOR RETIREMENT 101 (DISCLOSURE: THIS IS NOT FINANCIAL ADVICE)

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OVERVIEW

Principles of Saving

Common questions

My step-by-step plan

Get philosophical about markets

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GET
FREE
MONEY



BE

CHEAP



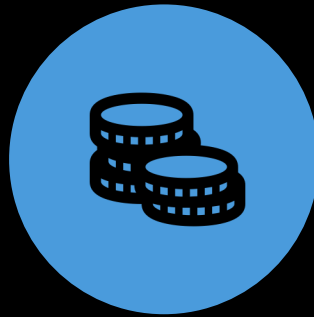
START

A\$AP

PRINCIPLES OF SAVING



GET FREE
MONEY



BE CHEAP



START ASAP

GET FREE MONEY



Maximize employer matching

5% matching is a 5% raise

GET FREE MONEY



Maximize employer matching

5% matching is a 5% raise



Use tax advantaged accounts

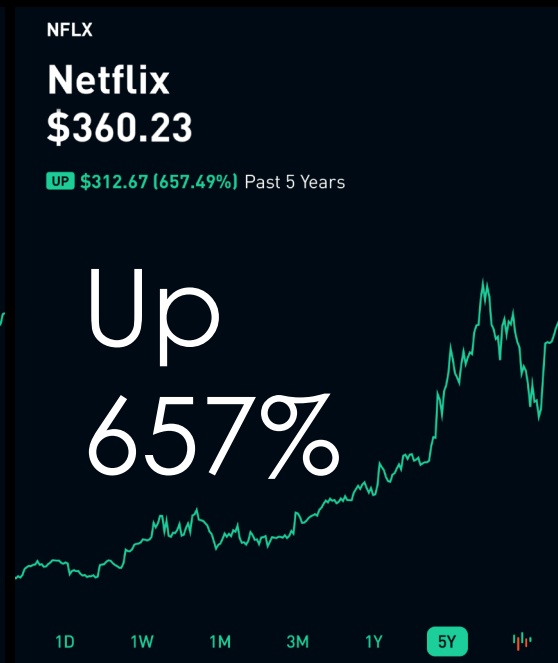
Lower your taxable income

Grow tax free

Allows moving funds around without
being taxed

BE CHEAP

- Leading question: Who typically makes investors more money?
 - **Active funds** that try to pick winners and avoid losers
 - **Passive funds** that buy a little of everything



Vs.



PASSIVE FUNDS WIN!

- Passive funds routinely beat actively traded funds after taking into account fees.
- In 2015, Morningstar found that the cheapest-quintile funds were 3 times as likely to beat the median-priced fund as the priciest quintile.

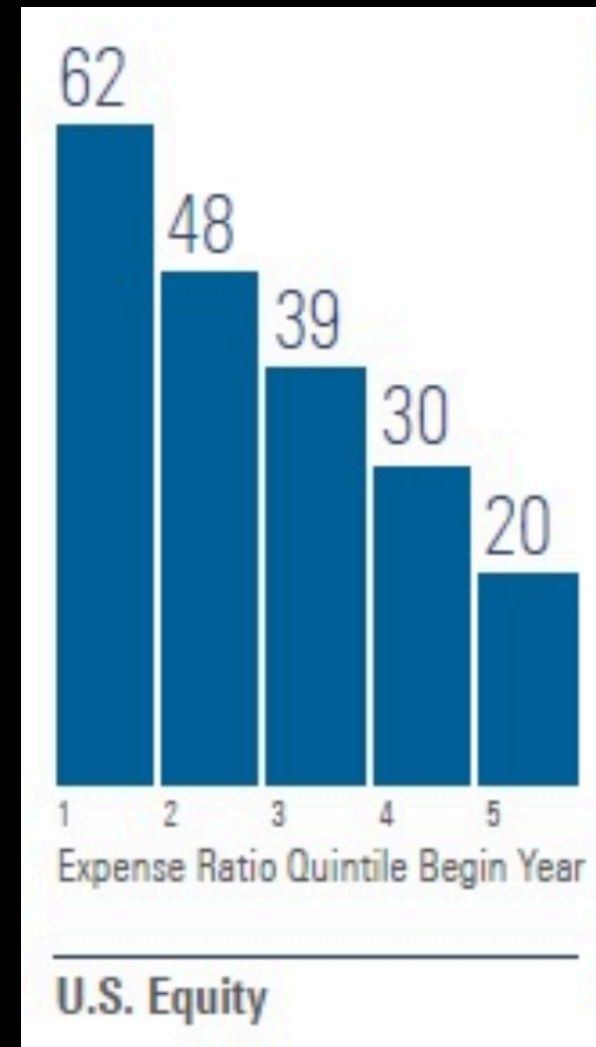
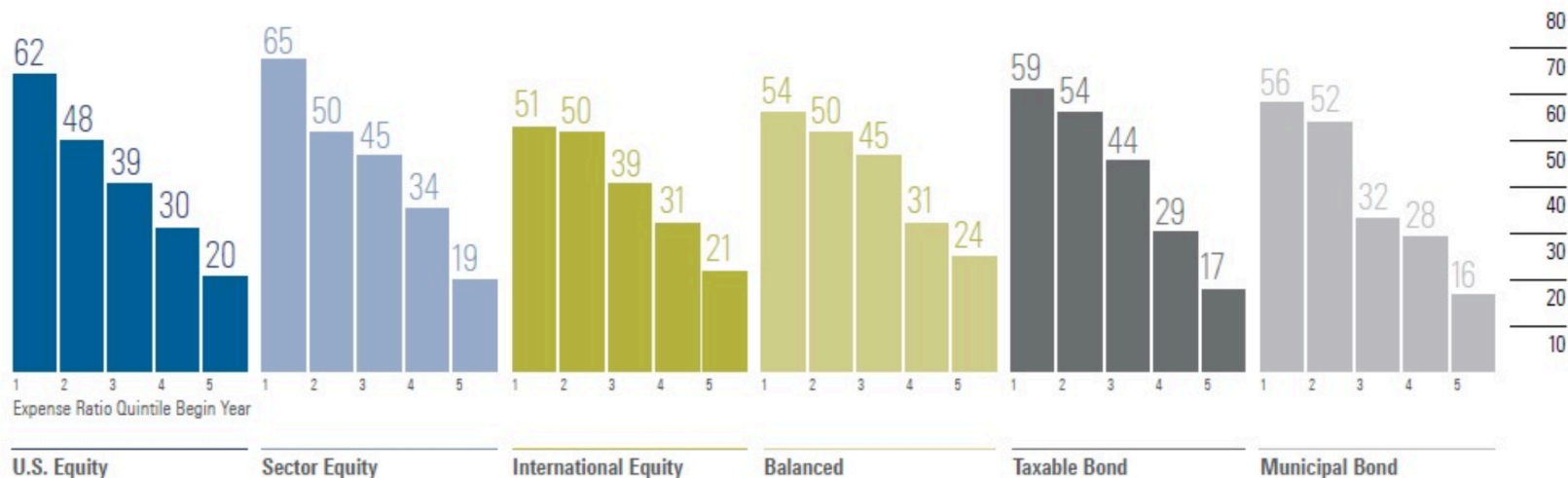


Exhibit 1 Low Costs Are the Path to Success—Subsequent Total Return Success Ratio



FEE SIZE PREDICTS SUCCESS IN ALL ASSET CLASSES

Source: [Morningstar Report - Fund Fees Predict Future Success or Failure](#)

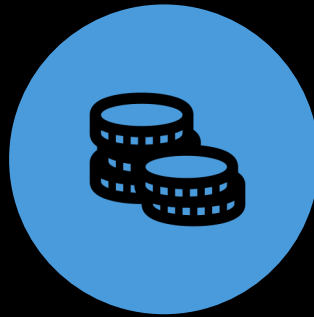
START ASAP

- Annual Return – Doubling time:
 - 4% ~ 18 yrs
 - 5% ~ 14 yrs
 - 6% ~ 12 yrs
 - 7% ~ 10 yrs
 - 8% ~ 9 yrs
- Caveat I: Don't kill yourself when you're making peanuts if you expect to a large salary in the future.
 - \$500 of \$24k is ~2%.
 - To check up in 12 years time, \$1000 of \$100K is ~1%.
- Caveat II: (in a couple slides)

PRINCIPLES OF SAVING



GET FREE
MONEY



BE CHEAP



START ASAP

COMMON QUESTIONS

- What accounts should I have?
- How do I compare fund fees?
- Ok, mister expert, how will you save for retirement?
- What are my options if I don't want to be bothered with any of this?

WHAT ACCOUNTS SHOULD I HAVE?

- Short answer: 401 (k) and IRA
- “Tax-qualified, define-contribution pension account”
 - 401 (k), 403 (b), or 457 (b)
 - Pros:
 - Some employers offer matching
 - Contributions lower taxable income
 - Withdrawals are taxed as income
 - Cons:
 - Yearly contribution limits (\$19k for 401 (k) in 2019)
 - 10% tax penalty if you withdraw funds before age 59 ½.
 - May offer only a few index or mutual funds.
- Talk to employer on contribution matching.

401 (k) general info: [https://en.wikipedia.org/wiki/401\(k\)](https://en.wikipedia.org/wiki/401(k))

WHAT ACCOUNTS SHOULD I HAVE?

- Individual Retirement account (IRA)
 - Traditional (taxed going out) and Roth (taxed upfront)
 - Pros:
 - More freedom in funds. (Can roll over 401(k).)
 - Cons:
 - Yearly contribution limits (\$6k for 2019)
 - 10% tax penalty if you withdraw funds before age 59 ½.

IRA FAQs: <https://www.wellsfargo.com/help/investing-and-retirement/ira-faqs/>

IRA Roth vs Traditional:

<https://thecollegeinvestor.com/11951/ultimate-guide-traditional-ira-roth-ira-contributions/>

HOW DO I COMPARE FUND FEES?

- Short answer: Expense Ratio
- Ratio of total expenses to total value of assets in fund.
- If expense ratio is 0.04% and you invest \$1000 in a fund, you pay \$0.40 a year.

Account summary

Goals

Actions

Resources

Products

COMPARE

PERFORMANCE: [MONTHLY](#) | [QUARTERLY](#)
AVERAGE ANNUAL RETURNS (%)¹

INVESTMENT NAME (TICKER) ⁻	ASSET CLASS	PRODUCT TYPE / SHARE CLASS	GROSS / NET EXPENSE RATIO	DAILY YEAR TO DATE RETURN (%)	PERFORMANCE				SINCE INCEPTION ²	AS OF DATE	Status
					1 YR	3 YR	5 YR	10 YR			
<input type="checkbox"/> American Funds EuroPacific Growth Fund - R6 (RERGX)	Equities	Mutual Fund / Retirement	0.49% / 0.49%	16.51%	-4.66%	9.33%	4.27%	--	8.87%	3/31/2019	
<input type="checkbox"/> Artisan Mid Cap Fund Institutional Class (APHMX)	Equities	Mutual Fund / Inst	0.96% / 0.96%	22.72%	12.59%	14.15%	8.26%	17.01%	8.34%	3/31/2019	
<input type="checkbox"/> Artisan Mid Cap Growth Trust (AMC1#)	Equities	Other Investment /	0.85% / 0.85%	--	12.79%	--	--	--	15.58%	3/31/2019	
<input type="checkbox"/> BlackRock Equity Index Fund J (BREJ#)	Equities	Other Investment /	0.01% / 0.01%	--	9.56%	--	--	--	11.37%	3/31/2019	
<input type="checkbox"/> BlackRock Mid Capitalization Equity Index Fund M (BRC2#)	Equities	Other Investment /	0.04% / 0.04%	--	2.62%	11.28%	8.33%	--	11.38%	3/31/2019	

MY FAVORITE LOW-COST INDEX FUNDS

- Commission-free trades of low-cost Exchange-traded funds (ETFs)

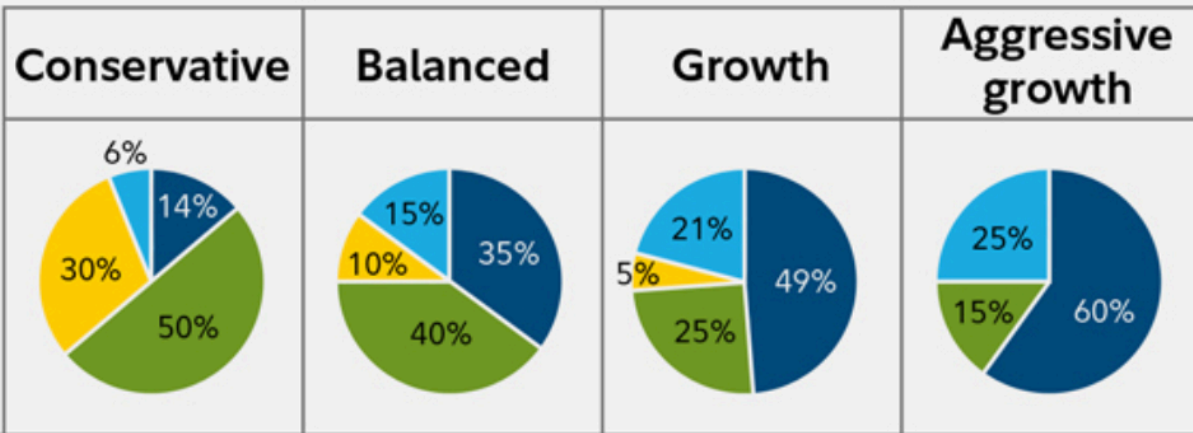


Name ▾	Ticker ▾	Asset class ▾	Expense ratio ▾	Price as of 04/18/2019		SEC yield	As of	Average annual returns as of 03/31/2019				
				Price ▾	Change		04/18/2019	YTD ▾	1-yr. ▾	5-yr. ▾	10-yr. ▾	Since inception ▾
<input checked="" type="checkbox"/> s Total Bond Market ETF	BND	Bond - Inter-term Treasury	0.05%	\$80.58	\$0.10 ↑	0.12% ↑	2.94% A 30 day 4/16/2019	2.46%	4.54%	2.68%	3.61%	3.99% (04/03/2007)
<input type="checkbox"/> s Total International Bond ETF	BNDX	International	0.09%	\$55.61	\$0.16 ↑	0.29% ↑	0.77% A 30 day 4/16/2019	2.81%	5.08%	4.09%	—	3.92% (05/31/2013)
<input type="checkbox"/> s Total International Stock ETF	VXUS	International	0.09%	\$53.52	-\$0.04 ↓	-0.07% ↓	—	13.80%	-5.50%	2.76%	—	3.45% (01/26/2011)
<input checked="" type="checkbox"/> s Total Stock Market ETF	VTI	Stock - Large-Cap Blend	0.04%	\$148.25	\$0.18 ↑	0.12% ↑	1.89% B 30 day 3/30/2019	16.85%	8.78%	10.34%	16.08%	7.11% (05/24/2001)

HOW DO I PLAN TO SAVE?: MY STEP-BY-STEP PLAN.

1. Save 6 months of expenses in online savings account.
2. Max 401(k) contribution matched by employer
3. To save for a house down payment, put remainder of savings into a online savings account (or bonds ETF if I'm feeling risky).
4. After buying a house, put new savings into 401(k) or open an IRA with Vanguard if 401(k) funds suck. (Roth/Traditional)
5. Any extra goes into non-tax advantaged Vanguard account (free ETF trades)
6. In these accounts, buy low cost index funds: 90% in stocks (VTI), 10% in bonds (BND).
7. Actively trade ~10% in Commission-Free Robinhood App for funzies
8. Set up automatic contributions.
9. Move 10% of stock ETF to bond ETF every ~5 years.
10. Use online savings account for large expenses within 3-5 years.
11. Vote to keep Social Security maintained.

Choose an investment mix you are comfortable with



Annual return %

Average annual return	5.96%	7.96%	8.97%	9.65%
Best 12-month return	31.06%	76.57%	109.55%	136.07%
Worst 12-month return	-17.67%	-40.64%	-52.92%	-60.78%
Best 30-year return (annualized)	9.51%	11.64%	12.78%	13.62%
Worst 30-year return (annualized)	3.67%	5.84%	6.84%	7.44%

Data source: Ibbotson Associates, 2018 (1926-2017). **Past performance is no guarantee of future results.** Returns include the reinvestment of dividends and other earnings. This chart is for illustrative purposes only. It is not possible to invest directly in an index. Time periods for best and worst returns are based on calendar year. For information on the indexes used to construct this table, see footnote 1. The purpose of the target asset mixes is to show how target asset mixes may be created with different risk and return characteristics to help meet an investor's goals. You should choose your own investments based on your particular objectives and situation. Be sure to review your decisions periodically to make sure they are still consistent with your goals.

WHAT ARE MY OPTIONS IF I DON'T WANT TO BE BOTHERED WITH ANY OF THIS?

- Pay others to do this for you.
 - Get a financial advisor who is a fiduciary (works in your best interest).
 - Do they receive commissions or fee-based pay?
 - Do they have an official designations like:
 - Registered investment advisors (RIAs)
 - Certified Financial Planner (CFP)
- Use a robo-advisors:
 - Set it and forget it.
 - Does the maintenance steps for you for a small fee (~0.25-0.5%).

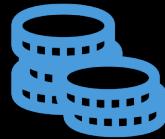
SUMMARY



Get free money

Maximize employer matching

Use tax advantaged accounts



Be cheap

Buy low-cost index funds



Start ASAP

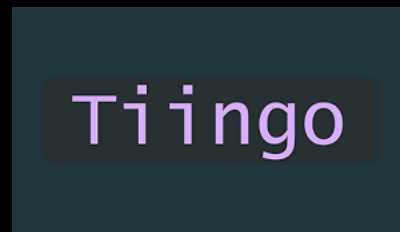
Compound interest is your friend

RECOMMENDED MEDIA

- Coffee Break - The Monkey On Wall Street - Watch BEFORE You Invest
https://www.youtube.com/watch?v=_vdB7gphtyo
- Benjamin Graham- Intelligent Investor
- Burton G. Malkiel - A Random Walk Down Wall Street

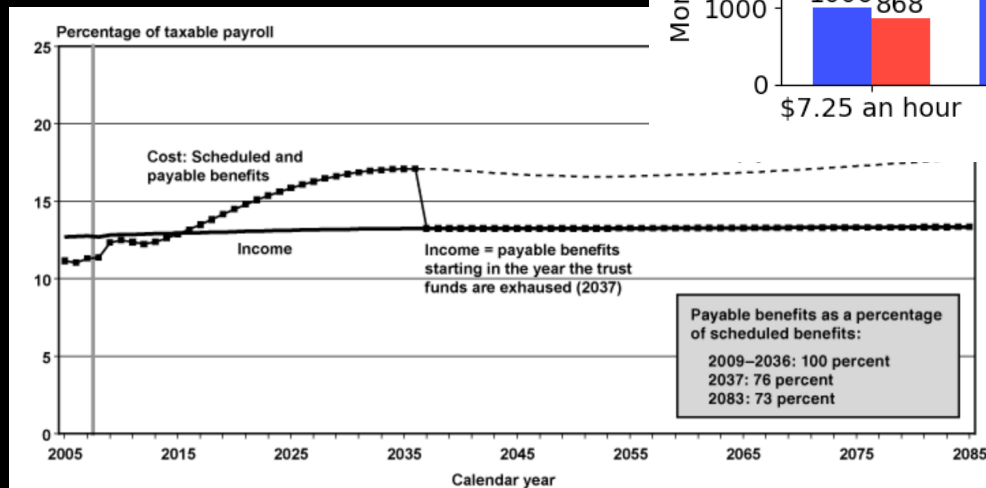
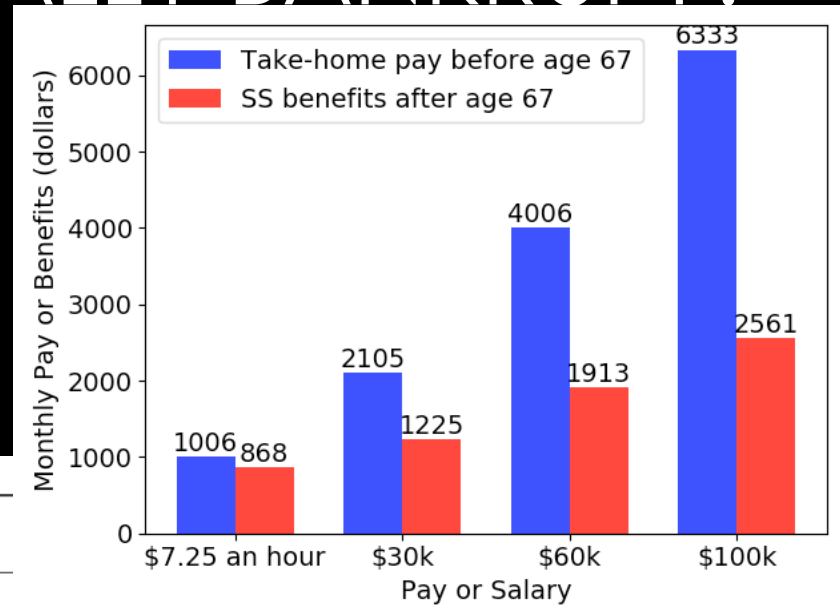
MY TOOLS FOR ACTIVELY TRADING

- Basics: Find a company or sector that is under valued
- Commission free trades in Robinhood.
- Python API to market data from Tiingo.
- Advanced back-testing capabilities in thinkorswim.



I PAY A LOT OF PAYROLL TAX, IS SOCIAL SECURITY REALLY BANKRUPT?

- A trust established in 1935 by the US Government
- Funded by payroll tax (~13%)
- Noncitizens can be eligible



DEFINITION OF PONZI SCHEME

- Promise of profit on investment
- Promoted enterprise doesn't exist
- First investors are paid with later investors' money



IS THE STOCK MARKET A PONZI SCHEME?

- PAST PERFORMANCE IS NO GUARANTEE OF FUTURE PERFORMANCE.
- The stock market has always gone up...

