Best of LessWrong: February 2017

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Get Rich Slowly

On the last day of my MBA's finance class, the professor admitted that very few us are ever going to use the formula for return-on-debt in our lives. Instead, for that class he gave us a single sheet of paper titled "Bill's simple and suboptimal personal investment guide" and explained his simple and suboptimal personal investment strategy.

In the years since, I have not once used the formula for return-on-debt. I did, however, use Bill's guide to set up my own investment account, and then one for my dad, and for my girlfriend, and for a couple of friends… and now I'm going to do the same for you.

A few disclaimers before we start:

1. I am not a certified investment advisor. In fact, I'm not a certified anything at all. Don't sue me.
2. This guide is *suboptimal*. You can open your own brokerage account and replicate the ETF structures to avoid the 0.15% Vanguard fees, but I'm not going to tell how to do that because see point #1 above.
3. This guide is *simple*. A lot of people I know don't invest their money at all because they think they entire universe of finance is beyond the grasp of mere mortals. I am going to start with some very basic concepts, which it turns out are all that is needed because investment isn't actually that complicated. If you're familiar with the basics and agree that diversified index funds are the way to go, you can skip the "Investment Basics" section and get to the second part where I detail my personal investment strategy.
4. Personal gain disclaimer: Wealthfront is the main platform, along with Schwab, that I use for investing my money. I'll explain the reasons for this choice later in the post. Wealthfront isn't paying me for the endorsement (nor are they aware of Putanumonit's existence) but the link is my own personal referral link. Clicking it gives *you* a fee waiver for $15,000 and *me* a waiver for $5,000. Wealthfront's fees are 0.25%, so if you use my link I get $12.5 (and a warm fuzzy feeling).
5. Both the platforms and investment types (e.g. a Roth IRA) I mention here are specific to the United States. My global readers may be interested in the general overview and the retirement spreadsheet, but they wouldn't be able to apply the investment details.

Enough disclaiming. Let's get to the FAQing investments part, starting from square one.

Investment Basics

Q: I don't get "investing". Why would anyone give me money just because I already have some money?

The first rule of money is that **a dollar today is worth more than a dollar tomorrow**. That's because some people have ideas about taking a dollar today and doing something profitable with it. For example: a company could take your dollar, buy an apple, polish it, and sell it for two dollars. If the company doesn't have the original $1 to get the apple-polishing industry rolling, they will be willing to borrow it from you for a share of profits (i.e. stock) or a return of your $1 plus interest later (i.e. bonds).

If you use your dollars to buy stocks and bonds, you're investing. If your dollars sit in your checking account earning no interest, they're worth-less.

Q: Giving someone else my money sounds risky, what's up with that?

The second rule of money is that **a safe dollar is worth more than a risky dollar**. This means that you get *paid extra* if someone wants to take your safe dollars and do *risky* stuff with them. Germany pays 0.3% interest on 10 year bonds because there's a low risk of them defaulting on their debt or hyperinflating the Euro. Nigeria pays 16% because Nigeria is riskier. If they offered any less people would buy other countries' bonds and not risk their cash there.

For stocks, the extra return on risk is *implicit*. Putanumonit Inc, an apple-polishing conglomerate, has 100 shares outstanding so each share entitles you to 1% of the company's profits. If Putanumonit is expected to earn an average profit of $50,000, you'd think that a share should be worth $500. But unlike cash, the profit isn't guaranteed: it could be a lot more or a lot less. Every rationally risk-averse person would prefer to own $500 in cash (safe) rather than 1% of the company (risky). To sell shares, Putanumonit Inc would have to offer them at a discount – perhaps $400 each. If you buy the share and wait for the actual profit to accrue, it will end up worth $500 on average and you'll earn a 25% return for tolerating the risk.

The rationality of risk-aversion is an important assumption for the risk-return tradeoff. There are many reasons for it, like the benefits of predictability and psychological risk aversion. The assumption doesn't hold all the time: people are willing to hold the riskiest possible investment, a lottery ticket, for a whopping return of *negative 50%*. But risk-aversion holds enough that on average, as investments are bought and sold getting a high return usually requires accepting higher volatility and risk.

Q: Cool, so I can just do something crazy and risky with my money and it will make a huge return?

Nope, risk in itself doesn't generate high returns, only risk that someone is *willing to pay you for*, and someone will only pay you to hold risk that is otherwise unavoidable. If you invest in Putanumonit Inc, you face many sources of risk: volatility in the price of apples, the demand for polished fruit, the value of American dollars vs. other currencies etc. The way to avoid specific risk is through **diversification**.

For example, you could buy stock in an apple orchard to protect against surges in the price of apples, or convert some of your dollars to World of Warcraft gold to hedge against currency fluctuations. By investing in more things that don't go up and down in step with Putanumonit Inc, you face less volatility than if you just held a single stock.

Some risk is impossible to diversify: when the financial crisis hit in 2007-8 stocks and bonds fell in every country and every category. Since smart investors will diversify away the diversifiable risk, the remaining return on stocks and bonds should compensate people for the unavoidable.

When the risks and returns of various investment portfolios are plotted on a chart, there's an "efficient frontier" beyond which portfolios can't improve. The frontier represents the lowest possible risk for a given expected return, or the highest return for a fixed level of risk:

Q: Most investment portfolios are probably pretty close to the efficient frontier, right?

No, because people are stupid and don't diversify *nearly* enough. What a lot of people don't realize is that your brokerage account isn't your only asset. Everything you own is an investment, and so are your life and career. Many people also hold stock in the company or sector they work in, because that's what they feel familiar with. But if you're a programmer and you own tech stocks, your risk is doubled: when a tech crash happens you lose your investments *and* your job.

The most common example of underdiversification is home country bias: people tend to buy stocks from their own country. If I live and work in the US my livelihood already depends on the American economy doing well. If American companies tank and Chinese companies flourish, I'm not going to be able to learn Mandarin and get a job in Chengdu. The most I can hope for is to be holding some Chinese stocks when that happens.

Home country bias should be easier to avoid in 2017. Perhaps you thought it's safe to invest in America: it's a stable democracy whose citizens prosper because free trade allows them to specialize in high value jobs (like blogging) and talented immigrants from around the world that keep the American economy vibrant and innovative. Then America elects a crazy person who threatens democracy and the rule of law, wants to dismantle free trade so Americans can go back to manufacturing t-shirts and growing avocados, and who harasses and bans immigrants.

Now those Brazilian mining stocks don't sound so risky after all, do they?

It used to be prohibitively expensive to buy the stocks of thousands of companies in every industry and corner of the world. Today it's practically free, with index funds. Instead of having to personally track down each individual stock, a behemoth like Vanguard does it just once (but with hundreds of billions) and you buy a piece of the pie from Vanguard. The funds are cheap because the company creating them doesn't make any decisions or analysis, they just buy a little bit of *everything*, which is what you're looking for anyway.

People are investing more and more in index funds in recent years. What's unclear is why some still don't.

Q: But owning a tiny piece of everything on the globe is boring!

Excitement while investing is usually a sign that you're losing money. Boring is good. *Average* is good.

This is one of my absolute favorite quotes:

Same goes for investing. If we only wished to make the average market return, this could be easily accomplished. But we wish to earn an above average return, and that's impossible because of the efficient market hypothesis.

Q: But that's just a hypothesis. Can't I earn better than market returns by picking the best stocks?

No, you're not smart enough.

Q: Can't I earn better than market returns by picking a good fund?

No. Not only does the average mutual fund underperform the market in a given year, the majority of them usually do. These mutual funds are run by guys and gals with MBAs, and we're just not that smart. Even if you were super smart, you can't predict which fund will do better or worse unless you have perfect information about their investment strategies, which they'll never give you.

Did the people in nice suits show you a strategy that beat the market by 50% last year? That's because they didn't show you the other one they tried, the one that lost by 55%. Did they beat the market 10 years in a row? They're probably running a "reverse lottery strategy", one that has a high chance of a low positive return traded off against a risk of complete annihilation. This is commonly known as picking pennies in front of a steamroller, you can guess how those strategies end. Are they investing based on the 17th monthly industrial lag?

There are *very few* hedge funds who consistently beat the market, but you can't invest in them. These opportunities are rare and limited in scope, so only a limited amount of money can be invested in them. It's easier to deal with a single investor than a thousand, so the best funds usually accept only big sums from multi-millionaires. It's even easier to have zero investors: the very best funds usually just trade the founders' and employees' own money.

Having mad math skillz might be enough to get you hired into one of those, but they're nowhere near enough to evaluate them from the outside. By the way: if my readers know of a company in NYC that's looking for people with mad math skillz, holla at your man.

Q: OK, can I earn worse than market returns?

Yes, people do it all the time! Mainly, by paying **investment fees** and taxes. Unlike death, paying some tax is generally unavoidable. Investments fees, however, are simply people stealing your money. Fortunately, robots aren't as greedy as people are and will invest your money without stealing any of it. That's the main reason why I invest with robo-advisors like Wealthfront and Schwab: they use simple robotic algorithms to invest your money in broad index funds. Because they don't have to pay the robots a salary, they don't charge you (significant) fees.

The goal of the investment strategy I'll outline below is to achieve the average returns of a maximally diversified portfolio while paying less taxes and as little fees as possible. Point by point, this is what I actually do with my own money.

Get Rich Slowly – The Putanumonit Way

I make a middle-class American salary, and save more than a third of it.

There are two basic goals I want to accomplish by investing:

1. In the short term, have a bit more money whenever I need it than I would have had if I left it in cash.
2. For the long term, never to run out of money until I die.

It may seem impossible to figure out how much money I'll use up for the rest of my life, but we can put a num on it using this incredible spreadsheet that I put together in half an hour. The spreadsheet simulates investing part of your income until retirement (which then compounds), then drawing down from the investment after retirement.

Here's how to use it:

1. The spreadsheet has two tabs: "Fixed" and "Editable". In the second one the values in the green cells can be changed to try out different assumptions. In the first one they can't, so you can still see a reasonable worked example after people mess up the second tab.
2. It's just a single Google doc and I have more than a single reader (hopefully), so it's likely that several people will be playing with the editable tab at once. You should be able to copy the sheet to your own Google doc or Excel and play with the numbers privately.
3. All numbers are net of inflation, i.e. they're in 2017 dollars.
4. The goal of the game is to have a positive number in the "balance when you die" cell. If the number is slightly high, your kids and loved ones get a nice inheritance. If the number is negative, at some point in the future you'll be: A – alive, B – broke, C – cursing the day you didn't heed the advice of my Google doc. You have been warned.

The assumptions I made in the first tab skew young and pessimistic, like I am. Two of the cells are retirement year and years of life after retirement. With Social Security running out but medicine improving, I would urge people to err high on both: assume you'll retire at 75 and die at 115. Historically, US inflation has been around 3.3% and stock market returns have been 7% for a net return of 3.7%. My assumption of 3.5% could be pessimistic (if other countries will achieve high returns by catching up to the US) or optimistic (if we're headed for a global stagnation), but it's the best I could come up with. An inflation adjusted wage growth of 2.5% is also conservative.

Under those assumptions, you can see that even a person who starts saving 45 years before they retire will need to put aside 30% of their salary. To simplify the model I made the saving percentage constant, but a better idea is to save a large percent of every **increase in income**. Thus – **getting rich slowly**.

I save most of my raises, and try to fight lifestyle inflation.

My family moved to Israel with $16. After a long while, we were able to afford a car that was a decade older than me. After another long while we got such luxuries as a TV. The funny thing is, I never felt growing up that we were poor. In fact, I felt just the opposite. I felt rich because each year we were *slightly* but *consistently* richer than the previous year. As long as you're not *"http://putanumonit.com/2016/04/27/more-power-less-poverty/">actually poor, the key to financial happiness is to get richer slowly and steadily.*

*In simpler terms: **Happiness = Reality – Expectations**, and your brain's money-expectation is exactly whatever you just spent last year. Spending a tiny bit more this year than last year feels like living in luxury.*

When we came to the US for business school, two of my Israeli classmates bought new sports cars. I bought a bicycle for $150. They didn't live beyond their means: both are talented and successful people who can afford any car they want. It's just that when you've had a Z5 it's hard to downgrade. When I got an internship and *traded my bike for a third-hand Toyota Yaris, I was as happy with the upgrade as my classmates were with theirs.*

Yes, even when it fell flat

I'm doing well in an absolute sense, and a lifestyle increase of a mere 1-2% is more than enough to feel really rich. Since my salary has been going up by a lot more than that, I'm happy to invest most of my raises and by now I'm putting away roughly 35%-40% of the total salary.

I keep just enough in my checking account to cover ongoing expenses, and invest the rest.

The investment platforms I mentioned can convert your index funds into cash and send it to your bank account in 4-5 days, so you don't need to hold more cash than you'd need on a 4 day notice. I keep about 50% more than my average monthly credit card bill, so I can pay my cards on time with autopay. Any huge unexpected expense can go on the credit card too, since I have at least 30 days to pay that back and have more than enough time to withdraw the invested money if I need to.

If you expect a 7% return on stocks, you're losing $700 a year for every extra $10,000 you're keeping in a bank account.

Savings accounts are a scam

A "high yield" savings account gives you 1% interest, except that your money is usually less flexible than if you invested it in a fund. Every $10,000 you keep in a savings account costs you $600 a year in lost yield, plus a headache. That $600 goes to your bank, since it immediately turns around and invests your money for its own profits, at high yields.

I have a Roth IRA at Wealthfront, a 401k at a mutual fund, and personal accounts at Wealthfront and Schwab

Let's break down the platforms and the account types. Investment funds / brokers lie on a scale from actively managed funds that pick and choose specific instruments to automated robo-advisors that buy broad indices. The more selective a fund is, the less it's diversified, which increases your risk. Since increasing your risk takes work, the active funds charge you fees for the pleasure.

The three large robo-advisors in the USA are Wealthfront, Schwab and Betterment.

Betterment

- ***Con:*** *0.25%-0.5% fees, otherwise same as the other ones.*

Wealthfront

- ***Pro:*** *Can allocate >50% to international instruments and emerging markets.*
- ***Pro:*** *Over 10% in municipal bonds, which are a good diversification and aren't taxed in the US.*
- ***Pro:*** *Convenient dashboard that can show all your other investments in one place.*
- ***Con:*** *0.25% fees above your first $15,000, this cap can be lifted by inviting friends.*

Schwab

- ***Pro**: 0% fees.*
- ***Con:** <40% international, <5% municipal bonds.*
- ***Con:** 7-20% of your investment is held as cash.*

*The percent held in cash is the main reason I prefer Wealthfront to Schwab for all my accounts except one. Cash holding is a hidden fee – if 10% of your investment is in cash and you miss out on 7% returns while inflation eats away at it, you're paying 10%*7%=0.7% fees.*

As for the portfolio allocation, I prefer to diversify away from the US but otherwise it's hard to evaluate who gives you better deal. This decision can come down to personal needs. For example, the high-yield portfolio at Wealthfront holds 16% in real estate vs. 6% at Schwab. If you own a house, you already have too much of your net worth tied in real estate and should prefer to diversify away from it. When you set up a portfolio on either site they ask you a bunch of questions, such as whether you own on rent a place to live, and adjust your allocation accordingly.

As for the different investment accounts, they mainly differ in the time horizon and the taxes you pay on them:

Roth IRA

- *Pay income tax when you earn the money today, but no tax when you withdraw it in the future.*
- *Can withdraw after age 59.5, or for some non-discretionary spending (house, medical bills, your kids' college).*
- *Can invest only up to $5,500 per year.*

401k

- *Pay income tax when you withdraw the money, but no tax when you earn it.*
- *A bit less flexible that Roth for non-discretionary emergencies, and also must start withdrawing at age 70.*

Personal investment

- *Pay income tax when you earn it, capital gains tax (currently 15%) when you withdraw.*
- *Use it whenever on whatever.*

We'll get to each one in turn.

On January 1st, I put $5,500 in a Roth IRA account at the highest yield portfolio at Wealthfront.

Let's break this down.

Why January 1st?

This is my highest-yield retirement investment, so I want to put the money in as early as possible each year to accumulate the greatest return.

Why $5,500?

That's all I'm allowed.

Why a Roth IRA?

A choice between Roth IRA and a 401k mainly depends on whether you expect to pay higher marginal income tax right now or when you're old. I expect my income tax to increase over the next decades for personal reasons (I expect my income to grow) and for Wagner's Law reasons: taxes seem to grow inexorably in every advanced economy. All the macroeconomic trends I see (aging population, increasing welfare, automation of jobs) point to increasing income taxes as well.

I think it's good to have both types of accounts, so you have the flexibility of using 401k money in low-spending low-tax years and Roth IRA money when you finally buy the ticket to Mars.

Why high-yield?

I don't plan on using this money for the next 30 years, so I hold it in the highest-yield / highest-risk portfolio available to me: 90% stocks, a third of which are in emerging markets which are riskier and more lucrative. The long time horizon lets the high yields compound, while the high risks smooth out over time in accordance with the law of large numbers.

Why Wealthfront?

Schwab holds a high percentage of cash, which can be overcome just by investing a bit more and keeping less in your checking account. But since the Roth IRA has a hard contribution limit, that's not an option. Since the IRA is high-yield, Every dollar of cash in your IRA costs you a lot in forgone returns.

I put almost my entire bonus in my employer's 401k, and little else otherwise.

Our 401k is with a mutual fund that charges an average of 1.6% fees, and we have no choice about it. I swallow the fees because the spreadsheet tells me that the $5,500 in the IRA are nowhere near enough for a happy retirement. Of course, if your employer matches 401k contributions you should max those out – that's free money.

I draw the 401k from my bonus for tax reasons. I pay income tax every two weeks based on that period's prorated income. On the salary period when my bonus arrives my income tax hits the highest bracket – around 20% more than my average income tax. It takes more than a year to get that tax refunded, so if I paid the tax I would be lending 20% of my money to Donald Trump at no interest, instead of making 7% return on it myself.

Keeping my hard earned cash away from the clutches of Donaeld the Unready is both a duty and a privilege.

Once a month after I pay my credit card bills I invest the extra remaining cash in personal accounts.

I have personal accounts at both Schwab and Wealthfront. The former is lower yield (only 60% in stocks, mostly large cap) and holds 9% in cash, so it's the first one I would draw on for near-term expenses. The Wealthfront account is riskier since it's for the medium term (~10 years) but a little more conservative than the Roth IRA.

The riskiness of the personal accounts should depend on your overall financial situation. I'm in good health, have no kids and a stable job. Whenever one of those things changes, I will switch the portfolio to a lower risk allocation like 30% stocks – 70% bonds..

So there you have it. Some are people are unsatisfied with the average, and in seeking to outsmart the average end up doing much worse. Others feel rich and happy with their lot, and they let time and compound interest make them even richer. And while you ponder the philosophical implications of that, there's still time to book your Wealthfront Roth IRA investment for the 2016 tax year and keep your 2017 allowance.

Getting rich slowly takes time, best get started now.