Investment Literacy for College Students, Page 1

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Being wealthy in one's later years MUST begin in a young adult's life when s/he is in the early 20s. To use the power of COMPOUND INTEREST to grow investments, one must start at (or BEFORE) one's graduation from college.

-- Suppose every student was aware that a monthly investment of $800 upon graduation (which is definitely doable at most graduates' starting salary) at 11% from age 22 until age 65 will make him/her a millionaire. See for yourself. Go to this website:

http://www.math.com/students/calculators/source/compound.htm

Type in 43 years (age 22 to age 65), 11% yield, Initial balance = 0, Monthly contribution = $800. Be astounded at how much you'll have at 65! (over $9.5 million!!!) [Even if one does "only" $500/month at 8% over 40 years, one still amasses $1.7 million!] There is a "textbook" for teaching students this concept. It explains how returns of 8% to 11% are achievable. It's title is "Learn to Earn" by Peter Lynch. The book makes a powerful case for investing in the stock marked via an index fund LONG TERM, explaining how the long term returns from stocks beat the returns from almost ALL other investments. Note the following website, comparing other investments to stocks:

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/histretSP.html

-- Play with the top website above. Key in different percents, different monthly contributions, different numbers of years. Decide how many millions you'd like to have at what age.

-- The bottom line: the KEY to future wealth is to start investing in the stock market in your early 20s - or sooner! But read "Learn to Earn" first. It's the guide for how to do this successfully - and also presents some strangely appealing strategies NOT to use.

-- But before one can invest money, one must EARN it. Here is the famous graph from *The Economist* showing that STEM majors have a much better chance at good earnings than Arts/Humanities majors:

http://www.economist.com/news/united-states/21646220-it-depends-what-you-study-not-where

-- The bottom line: Start investing SOME AMOUNT (no matter how small) NOW, every month, in an index fund that mirrors one of the stock markets (DOW-Jones, S&P 500, NASDAQ, etc.). Do this monthly for at least 20 years no matter how the market fluctuates. Legendary investor **Warren Buffett** advocates this approach (ignore the first 25 seconds of the video; copy & paste: this is not a hyperlink):

https://www.youtube.com/watch?v=rEX81lGhMwM

-- As examples, here are some index funds to start thinking about which follow the S&P 500 stock market:

http://www.businessinsider.com/35-index-mutual-funds-2012-5

-- You can also go online & find Index Funds that follow the **Dow-Jones** and the **NASDAQ** markets.

-- Two more **highly rated** books that teach how to build wealth are:
The Millionaire Next Door by T. J. Stanley & W.D. Danko
Rich Dad Poor Dad by Robert T. Kiyosaki

BEWARE of the cost of Mutual Funds that your 401k automatically enrolls you in!

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(An article from "The Motley Fools":

https://www.fool.com/investing/general/2014/03/17/fees.aspx)

This is how the entire money management industry works. Most mutual-fund revenue is received based on a simple calculation: At the end of each day, an annual management fee is divided by 365, and multiplied by the amount of assets under management. That amount -- its daily fee -- is deduced from the fund. It's automatic. Customers are charged (big) fees for each day they invest in their funds, but no one pays -- or even sees -- an actual bill.
There's nothing sinister about this. Mutual funds are upfront about their fees and are required to clearly disclose annual management fees in annual investor reports.

But I can think of no other industry where customers can pay literally tens of thousands of dollars per year and not even realize it. Since fees are disclosed as a percentage of assets, rather than a dollar amount, they're harder for lay investors to put into context. And since they're deducted automatically, rather than billed directly, they're out of sight, out of mind.

I began thinking about this last year when talking to a family member who, after digging through his 401(k), realized he was paying $350 a month for the privilege of investing in a mutual fund that had underperformed its benchmark for a decade. That blew him away. He's a penny-pincher who will walk a mile to avoid paying a $5 parking fee. But he was paying 70 times that amount each month for his mutual fund. The fees he paid on his fund were enough to cover a great vacation each year for the 15 years he owned the fund. Literally, 15 trips to Europe.

The worst part is that he didn't even realize he was paying that much. Sure, he could have looked at the fund's prospectus and discovered his 1% management fee. But like most of us, he didn't. And it took him more than a decade before he did the simple calculation that showed a 1% management fee on his $420,000 account came out to a staggering $350 a month -- again, for a poorly managed fund.

I imagine there are tens of millions investors in the same position. The same people who are appalled at paying $5 a month for their checking account service fee could easily be paying 20, 50, or 100 times that amount for their 401(k) without even knowing it.

What if this were different? What if mutual funds and money managers had to charge fees like all other businesses: a monthly bill sent directly to customers? You can guarantee one thing: There would be an investor revolution.

Imagine if every month, while paying your mortgage, your power bill, and your cell phone bill, you had to write a check to your mutual fund manager for $200. You wrote another check to your 401(k) plan administer for $75, and perhaps another check to a custodian bank for $25.

You would instantly become keenly aware of fees. You'd probably become obsessed with them. You wouldn't put up with a high-fee investment manager who chronically underperforms his benchmark. You'd shop around to see who offered the lowest costs, and you'd relentlessly harass your H.R. department to find a retirement-fund administrator with lower fees.

Very little of that behavior is happening right now.

Two years ago, the Department of Labor created a new rule mandating that 401(k) accounts disclose all the fees participants are being charged each year. This is a step in the right direction, but only a small one. According to a study by industry researcher LIMRA, 22% of 401(k) participants think they don't pay any fees or expenses, up from 38% before the new disclosures went out. That's progress, but still appalling: One-in-five Americans is likely paying hundreds of dollars a year in fees *while thinking they're not paying a penny.* Fully half of investors in LIMRA's survey said they still didn't know how much they were

paying in fees, and most of those who said they knew were wrong, often by an order of magnitude. Until investors actually have to write a check themselves, they are going to be oblivious to the fees they're paying. That promises more bad investing decisions, and a wealth transfer from workers to Wall Street based solely on a lack of understanding.
According to Demos, the average two-earner couple will pay $155,000 in 401(k) fees over their lifetime. That's enough to buy two-thirds of an average American house. Is it asking too much to bring a little light to these fees by making customers pay them directly? I don't expect any mutual funds to do this -- it'd be a logistical nightmare, and the current system works wonders at maximizing revenue. But I know customers would make better decisions if they would.

In addition, here is a SUPERB documentary that gives more details about the above analysis:

https://www.youtube.com/watch?v=A3htnbwFgoM

An analysis by a successful Tech alum of the cost of Mutual Funds that your 401k automatically enrolls you in!

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I hope that this information will help future Georgia Tech students understand the basics of investing and managing their money so that it won't be wasted on hidden fees traps of ineffective mutual funds and will eventually grow along with the US economy. The alumni's wealth is vital to the success of Georgia Tech on the world stage as evidenced by the donations by Ernest Scheller and countless other alumni who not only became successful in their careers but also effectively managed their wealth.

That being said, I would like to elaborate on my understanding of retirement accounts (such as 401k, IRA, etc.), investing, and tax that I was able to accumulate through books, work at the Investment Committee, and countless number of hours watching documentaries.

Before we go further, here's a list of books and links that are excellent sources for information on money managing and retirement finance.

Websites:
1. http://jasonzweig.com/
2. https://www.caniretireyet.com/
3. http://squaredawayblog.bc.edu/
4. https://obliviousinvestor.com/
5. https://www.bogleheads.org/
6. https://www.daveramsey.com/blog/are-mutual-fund-fees-destroying-my-retirement

Books:
1. Any books by John Bogle, the founder of Vanguard and father of low-cost index investing. I'd recommend starting with "The little book of common sense investing" and "John Bogle on Mutual Funds"
2. "The Retirement Myth" by Craig Karpel
2. "The four pillars of investing" by William J. Bernstein
3. Peter Lynch's books for people who want to invest a percentage of their portfolio (recommend 30% max) into individual companies
4. "Where Are the Customers' Yachts?" by Fred Schwed

1. How to invest in 401(k) and what is the expected return?

Now, we move on to the best part. Let say I just graduate from Georgia Tech and land myself an exciting job at an engineering firm making $70,000/year (the average Georgia Tech undergraduate salary). The employer offers me a 401(k) account with Fidelity (or Vanguard or any other reputable investment adviser) and promises to put into my 401(k) the exact same amount that I contribute each year or 5% of my before-tax salary (whichever is less). Let's say I need to pay my student loans and save money to buy a house, so I'll only invest 5% of my before-tax salary to my 401(k).

Do a quick math here: $70,000 * (0.05) * 2 = $7000 is the amount in my 401(k) the first year, employer's contribution included. Notice here that I gain an extra $3500 tax-free from my employer, so in effect my portfolio is guaranteed to gain the same amount (or 5% of my salary) I contribute annually regardless of market performance.

Also, since I contribute 5% of my before-tax salary, when I do my tax at the end of the year, I get a $3750 deduction and $1500 in tax return (this amount varies depending on your tax situation).

We can use the information above to project my 401(k) after a couple of decades using this tool (https://www.calcxml.com/calculators/interest-calculator?skn=#results). Assuming my salary increases by 2% annually (the average annual inflation rate), my annual 401(k) contribution (employer's matching included) increases by the same percentage. I decide to invest all my money into an index fund that tracks the S&P 500 and has a negligible expense ratio between 0.01 and 0.06 (the expected expense ratios for low-cost index funds). The annual historical return of S&P 500 is 8% (without dividends) and 10% (with dividends reinvested) so let's say my portfolio varies between 8% and 10% return annually. My 401(k) after every decade is:

After 10 years: lowest ($118,431), highest ($132,319)
After 20 years: lowest ($400,052), highest ($504,500)
After 30 years: lowest ($1,039,664), highest ($1,505,162)
After 40 years: lowest ($2,459,077), highest ($4,143,680)
After 50 years: lowest ($5,570,463), highest ($11,039,804)

Let's say I'm now 25 years old and want to retire at 65 so I decide to withdraw my 401(k) after 40 years. Since the expense ratio is negligible and 401(k) doesn't require me to pay capital gain tax, I get every single dollar of the amount that falls between $2,459,077 and $4,143,680. If I feel like working another 10 years and retire at 75, I'll get between $5,570,463 and $11,039,804. Pretty impressive returns considering minimal investment, no research required, no selling or buying, no enormous fees paid to fund managers delivering more promises than returns, no need to read the Wall Street Journal daily or worry about the price of chicken feathers relative to livestock's life expenctancy. And I didn't even mention the tax deduction and return I get every year for my contribution.

The S&P 500 or any index fund is like any other stocks, it can go down and will go down. But what sets it and index funds apart from individual stocks is that they capture the entire stock market and industries. The US economy, with all its ups and downs, tends to go up over the long-run and will continue to go up since we have more people born every year, thus more consumers expanding economy. These index funds, moving along side the US economy, tend to go up over a long period of time. If you can combine this fact with patience & diligence, minimal understanding of the power of compound interest, and awareness of the marketing ploys by mutual funds industry, you can rest assured that you capture your fair share of the economy you work hard and contribute to, and that you are entitled to all of the capital gain

2. My local financial adviser is selling an actively-managed fund that promises 11% annual return with 2% expense ratio. My adviser calls the fund "Income Guaranteed Fund" and promises that some returns will be delivered regardless of market performance. This sounds too good to be true. What should I do?

If something is too good to be true in finance, it is likely too good to be true. Before you do anything, ask your adviser if he/she is a fiduciary, a technical term for someone who is required by law to act in your best interest. The title 'Financial Adviser' is not regulated by any organizations or institutions so literally anyone can bestow the title on themselves by printing out a stack of business cards. If your so-called financial adviser says he/she is not a fiduciary, ask them if they are willing to sign a document stating that they are acting in your best interest. That's the best way to know if someone is really taking care of you or just trying to sell you bogus products for commission money.

Now consider the fees. Fees are notorious in the mutual funds industry because though tiny they seem, they create some of the greatest wealth on Wall Street. The book "Where Are the Customers' Yachts?" by Fred Schwed greatly illustrates the devastating effects of fees and hidden fees on American retirement accounts and how they transfer a vast amount of wealth from avarage workers to the pockets of already wealthy men who will surely stash it away in tax-free accounts in the Bahamas and Cayman Island, paying no taxes to the US government.

The 2% expense ratio mentioned by your adviser is just the tip of the iceberg. It is the front cost, hiding the other fees such as administrative fees, stocks transaction fees, withdraw fees, and sometimes fee for the privilege of paying fees to these suckers (mutual funds of hedge funds). So when you combine all these fees, you can look at between 4 - 5% total expense ratio. That will erode your return down to 6 - 7% if the fund manager, in the most favorable bull-run and extreme luck, can deliver 11% year after year for more than 20 years. Research after research done by some of the most brilliant mathematicians and economists have shown that over a period of more than 20 years, 92% of fund managers fail to beat the S&P 500 and that a group of monkeys throwing darts at a board with stock symbols on it can produce the same average return as these managers with their fancy Ivy League degrees.

It's not to say these fund managers aren't smart. They really are. That's why they got to where they are. But the underlying problem is that there is a finite number of stocks on the market. When you aim for the best performing stocks (those with great balance sheet, good business model, and consistent growth), the number of available stocks is even smaller so everyone ends up buying pretty much the same thing. This combines with the need to diversify results in a vast majority of fund managers owning a portfolio that is essentially the same index that they are trying to beat. That's why many fund managers are closet indexers, who invest clients' money trading individual stocks but invest their own money in index funds. When the fund managers trail the indexes and charge you high fees, your return is a bismal 3 - 4 % compared to the 8 - 10% investing in indexes (such as S&P 500) with negligible expense ratio of 0.01 - 0.05 for 30 or 40 years. That's the difference between retiring to a nice neighborhood in Florida and having to work part-time at Publix to supplement your social security check.

The term 'guaranteed return' virtually amounts to nothing other than a fancy bait-and-switch term to lure the customers in. The mutual funds industry spend billions of dollars in Washington to make sure that it is loosely regulated, allowing these funds to change contracts and terms at will and without having to notify you. So you basically put up 100% of the capital and take 100% of the risk while fund managers put up 0 capital but take a sizable chunk of the profits as they see fit.

The above information makes 3 points worth remembering:

1. A 401K can BE an index fund.
2. If a novice investor chooses "just any ole mutual fund " for his 401K, special attention must be paid to the management fees, as is dramatically emphasized in the following video:

   https://www.youtube.com/watch?v=A3htnbwFgoM

3. 79% of the managed mutual funds do not perform as well as the overall stock market.

One thing I need to point out though is that a 401(k) includes many options for index funds so they are not mutually exclusive. 401(k) as you know is simply a tax deferral device, allowing investor to cash in free of capital gain tax upon retiring at 65. My 401(k) with Fidelity for example has a stock called Large Cap Stocks (OJFK) that tracks the S&P 500 and has an expense ratio of 0.01 (the lowest you can get anywhere since IBM picks up the administrative fees). With 401(k), employers also matches 5% (depending on the employer) of the employee's salary or the employee's annual contribution (whichever is less) at the end of the year. So someone who makes $100000 at Tesla and contributes $5001 (more than 5% of the wage), the employer will put another $5000 in that person's 401(k) tax-free. That's why employees (especially new grads) are highly encouraged to contribute at least the percent of salary that employer is willing to match.

NOTE: It's important to stress the impact of fees and the fact that the vast majority of actively-managed funds trail index funds in the long-run.