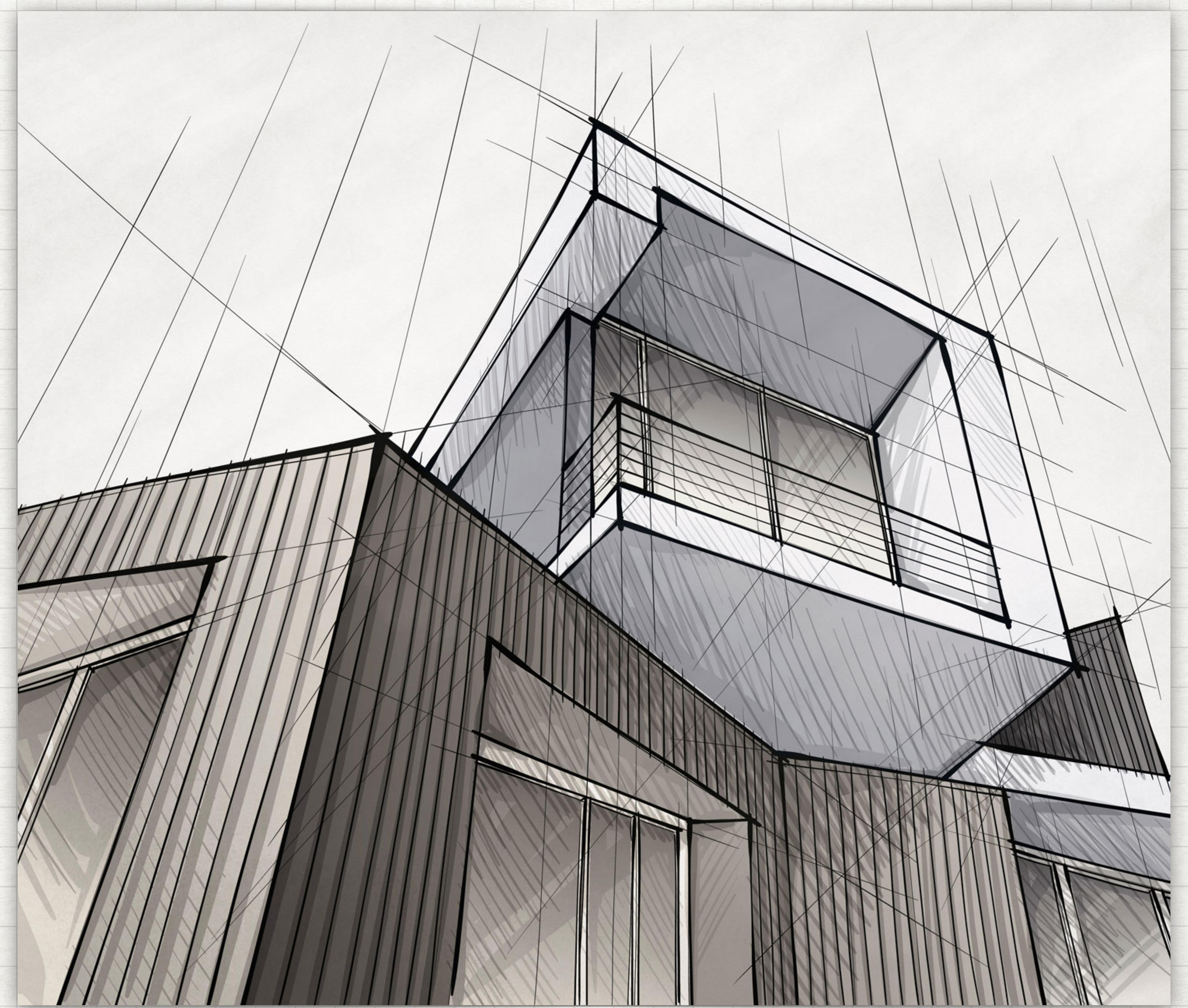
CS 007: SESSION 3

PERSONAL FINANCE FOR ENGINEERS



NOBEL PRIZE IN ECONOMICS FOR 2017

- Richard Thaler (@R_Thaler)
- Professor @ University of Chicago, "Nudge"
- **Key insights:**
    - Mental Accounting
    - Endowment Effect
- **Nice write-ups on NYT & Vox:**
    - https://www.nytimes.com/2017/10/09/business/nobel-economics-richard-thaler.html
    - https://www.vox.com/policy-and-politics/2017/10/9/16447752/richard-thaler-nobel-explained-economics

CS 007

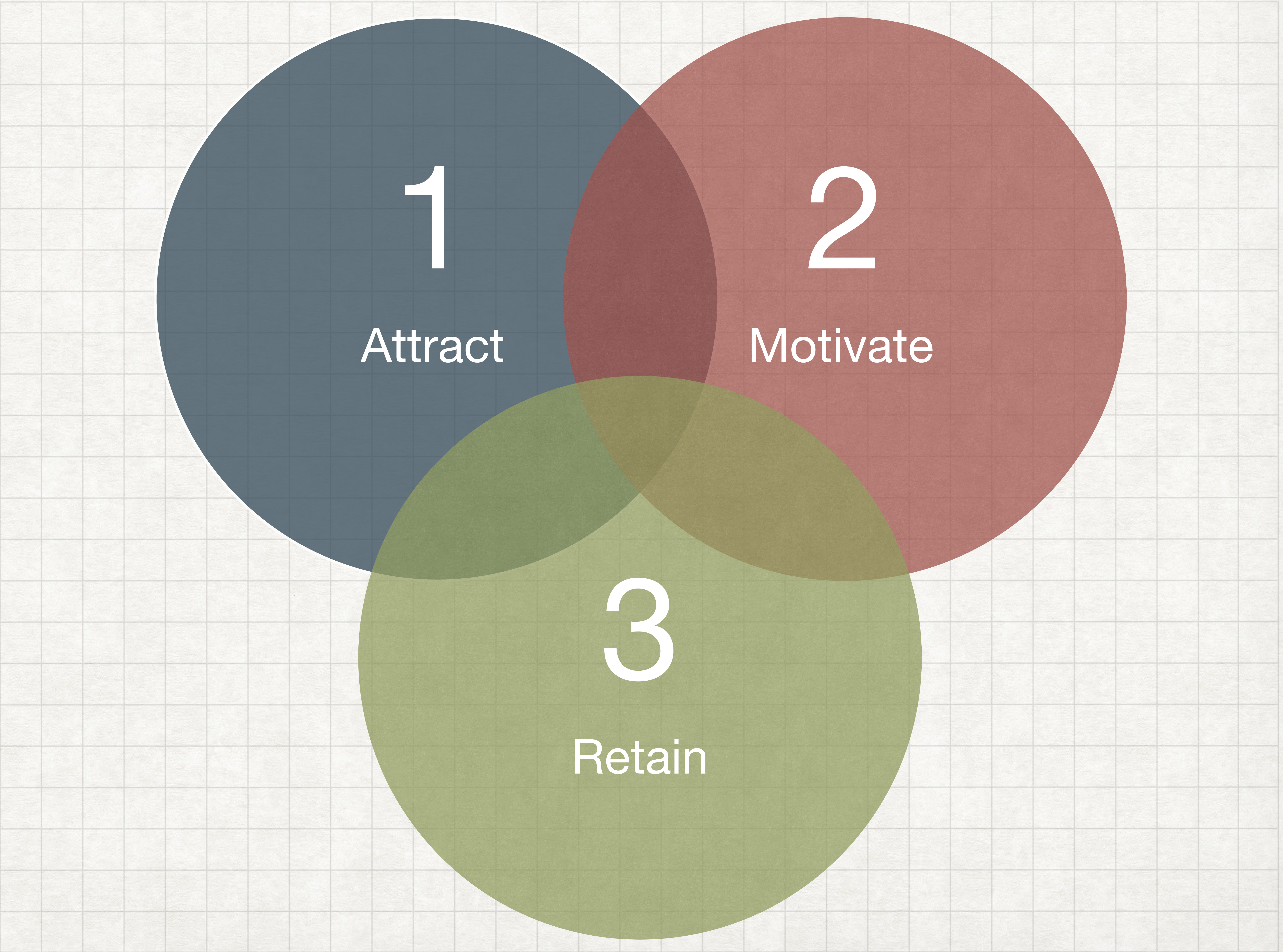
GETTING PAID

COMPENSATION

Understanding how people are paid

COMPENSATION

- **Attract talent to your company**, by rewarding capability with competitive market-based pay.
- **Motivate employees** by rewarding performance aligned with company strategy & objectives.
- **Retain employees** by fairly matching their contribution to the company
- Compensation is only one part of culture, but it is a critical part.



COMPONENTS

- Base Pay
- Relocation / Signing Bonus
- Annual Bonus
- Equity Compensation
- Financial Benefits
- Perks

COMPONENTS: BASE PAY

- **Key factors:** Level, Function, Geography
- **Market data** easily accessible by companies, increasingly available to individuals.
- **Adjustments** are most commonly made due to annual inflation, internal audit, market competitiveness, promotion.

COMPONENTS: BONUS

- **Signing Bonus / Relocation:** Money paid up-front, at first pay period, to help with move / relocation or to improve offer without affecting base salary.
  Be careful: usually has a clawback.

- **Annual / Quarterly Performance Bonus:** Typically a company wide program, fixed potential % based on level, based on both individual & company results.

- **Spot Bonus:** Less common, but managers occasionally are empowered to give one-off bonus to teams / individuals to reward results.

COMPONENTS: EQUITY

- Designed to align employee compensation with shareholder results.

- Particularly attractive to companies that are cash sensitive.

- Very common at almost all levels & roles in technology. Other industries tend to skew towards executives.

- Two common forms:
  stock options & restricted stock.

COMPONENTS: FINANCIAL BENEFITS & PERKS

- Wide variety of benefits that either offer employees tax advantages or shift costs to employer.
- Health Insurance, Retirement, Stock Purchase likely the most significant.
- Increasingly common at large, well-funded tech companies to see fairly expensive perks (food, transit, fitness)
- Benefits tend to be very uneven in value to employees depending on their personal situation & needs.

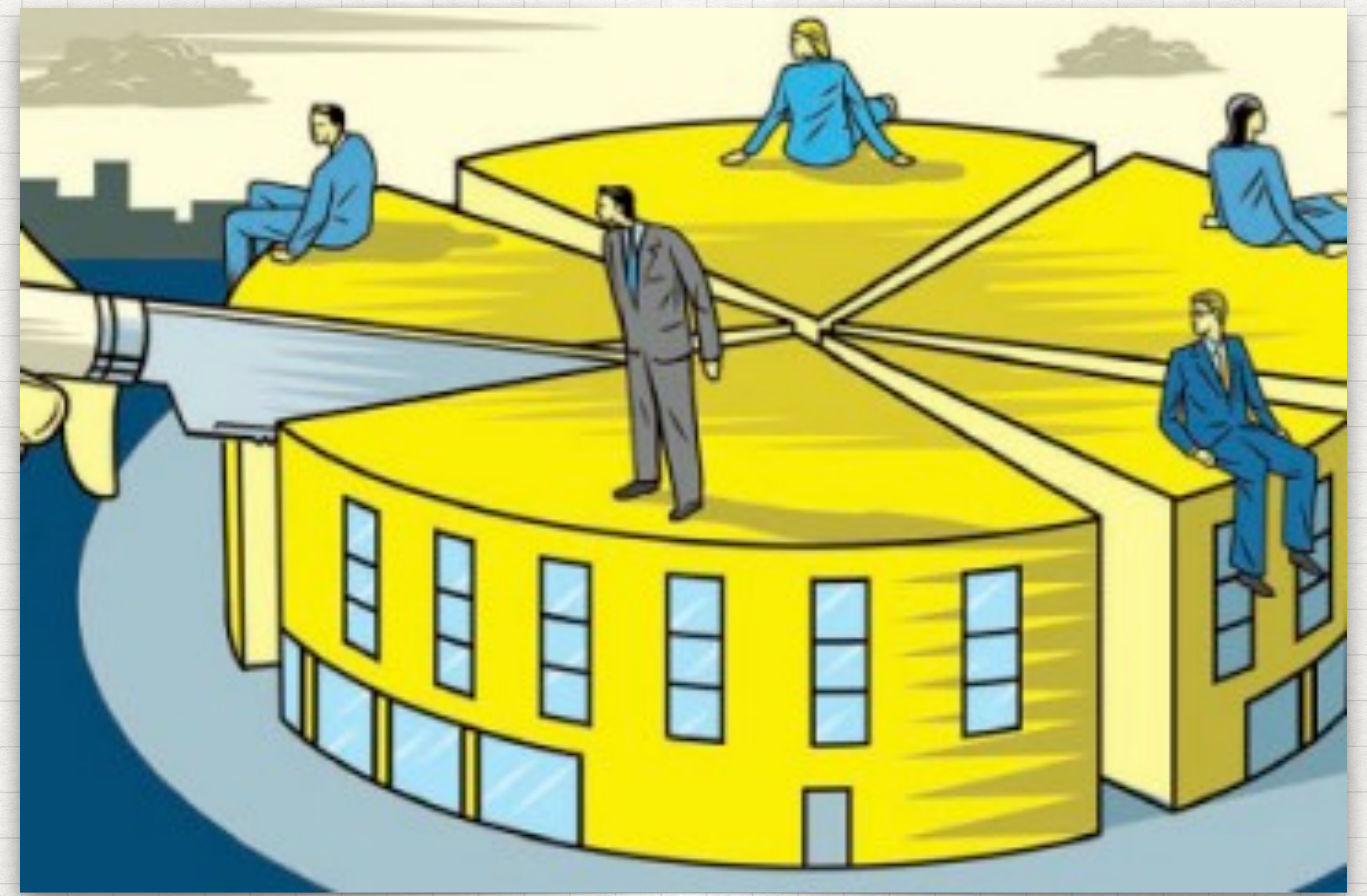
EQUITY

Understanding how people are paid

WHAT IS EQUITY?

- Fancy name for the value of a share of ownership of the business.
- Company ownership is divided into shares, and those shares entitle owners to various rights.
- There can be different classes of shares. This is very common with private companies.
- In the simplest case, you can determine how much of a company you own with this fraction

$$\boxed{\frac{(\text{ \# of shares you own})}{(\text{ \# of shares total })}}$$



PUBLIC COMPANIES

- There are ~5.8 million employer businesses in the US. Fewer than 4,000 are publicly traded.
- 99.7% fewer than 500 employees.
- Public companies tend to be larger, as measured in employees & revenue.
- Strict regulations for public companies on timeliness and content of financial results published for the public.
- Market price for both stock and stock options extremely transparent.

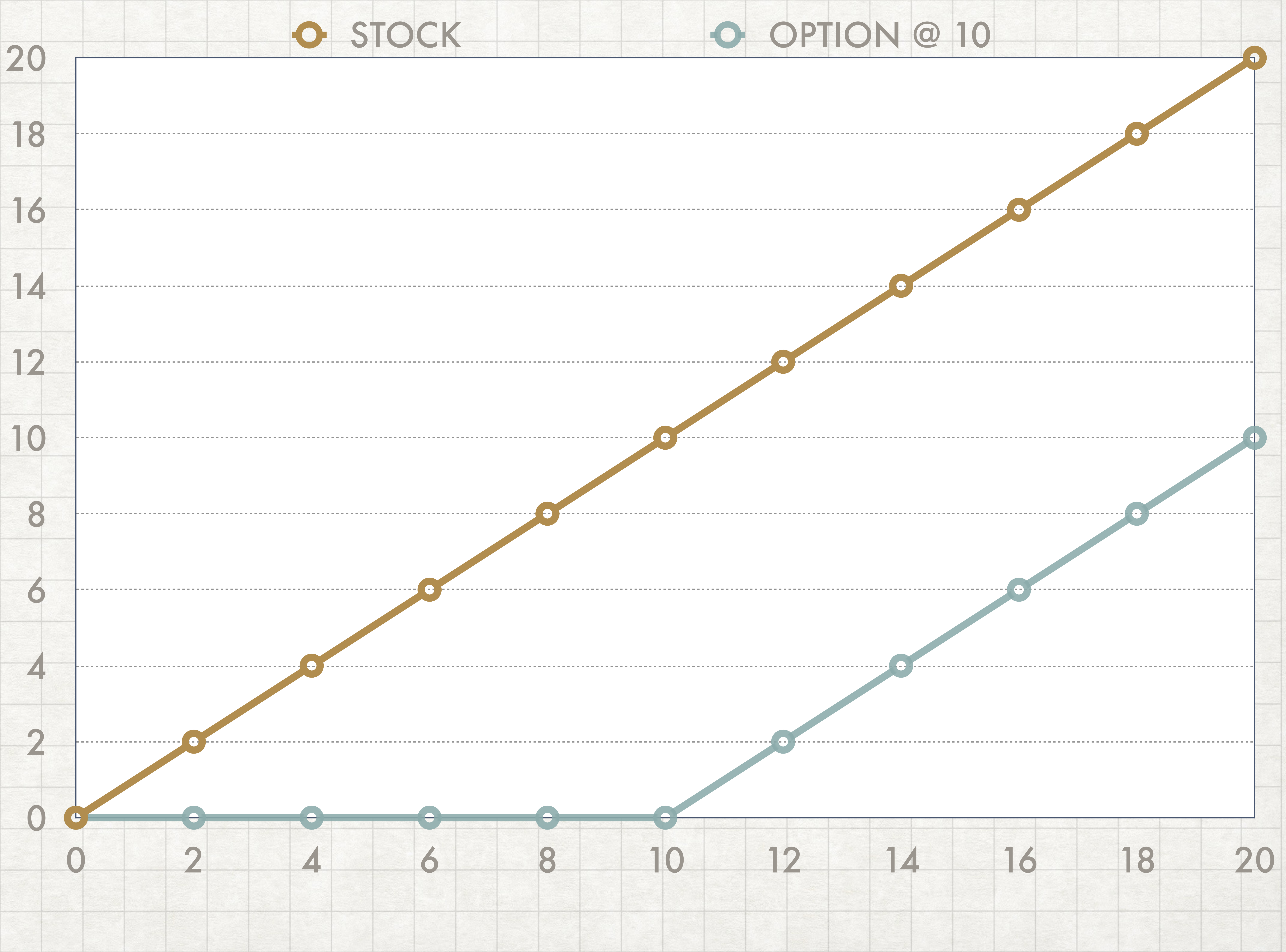
* US Census Bureau 2014 http://sbecouncil.org/about-us/facts-and-data/

PRIVATE COMPANIES

- Most businesses are private, but for graduating engineers most relevant form are venture-backed startups.
- Private companies have multiple share classes, and are frequently cashflow negative.
- Future financing means **dilution**. Your share of the company will decrease as the company issues more shares.
- You cannot evaluate a company's equity without knowing **the amount raised** and at **what terms & preferences**.
- Companies vary widely in how much they disclose to their employees & candidates.
- For the most part, you cannot sell your stock when a company is private.

STOCK OPTIONS

- Stock options are a "derivative," a security based on another security. There are many types, but for compensation they represent "the right to buy"
- Key terms
    - **Grant date.** When you receive the options. Typically after the first board meeting when you start.
    - **Vesting Start Date.** Typically your first day of work.
    - **Vesting Schedule.** Typically 4 years, with a 1 year cliff.
    - **Exercise / Strike Price.** Typically fair market value the day the options are granted.
    - **Expiration Date.** Typically 10 years, although 7 is not uncommon. Expiration triggers early if you leave the company (90 days).
- There are tax consequences if the strike price does not match the current fair value, and when you exercise them. **Pro Tip: 83(b)**
- There are tax consequences when you exercise a stock option based on type (ISO vs. NQSO), but not when you vest them.
- **Intrinsic value** is market price - strike price. **Time value** adds the value of the option itself & the flexibility it provides.

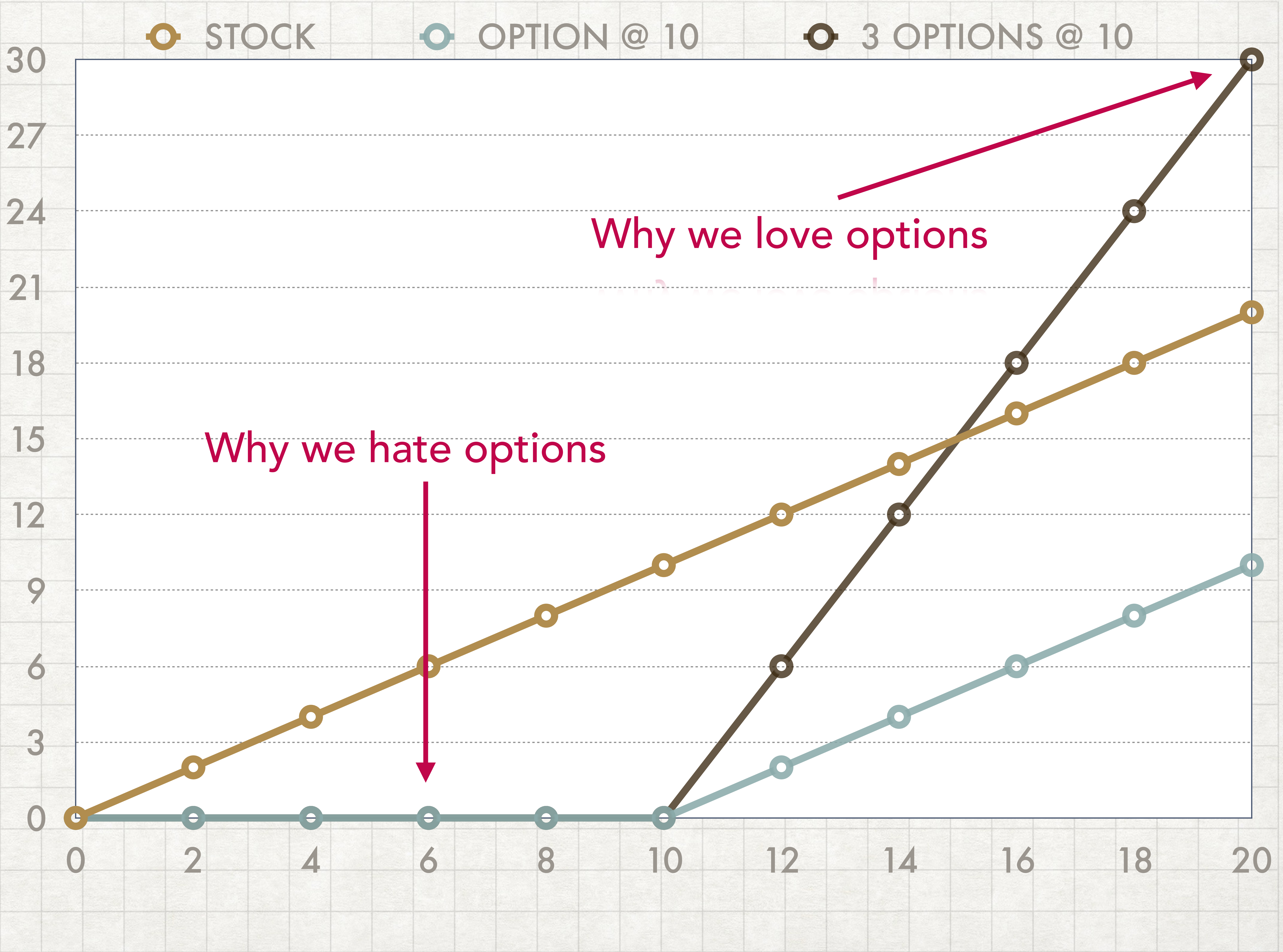


RESTRICTED STOCK

- Restricted stock is a broad term for shares in a company that have restriction on their ownership (example: vesting).
- **Restricted Stock Units (RSUs)** are a promise from a company to issue shares to the employee. **Restricted Stock** are actual shares with a restriction on them.
- There is no strike price. You are granted a number of shares with a vesting schedule.
- You owe income taxes immediately when you vest restricted stock. Most companies withhold taxes by selling the portion of stock necessary at that time.
- Originally a feature at public companies (e.g. Google), became increasingly common at large private companies when strike price becomes prohibitive.
- Once vested, there is no meaningful tax difference between these shares and ones you could buy that same day with cash.

STOCK OPTIONS VS. RESTRICTED STOCK

- Stock options can be worthless if the value of the stock drops below the exercise price. Restricted stock only becomes worthless if the stock price drops to zero.
- Employees typically receive more shares via stock options than via restricted stock, because the restricted stock lacks a strike price and is worth more than an option. Ratio can be 3:1.
- Both have liquidity concerns.
  - With stock options, not everyone has the cash to exercise their stock & pay related taxes when they leave the company.
  - With restricted stock, you likely will not be able to sell your earned shares until a liquidity event (IPO or acquisition).
- Significant tax benefits with stock options, because you do not owe taxes upon vesting & you can control when you exercise.
- Common stock is valued significantly below preferred stock in private companies, but that difference disappears when a company goes public. AS a result, your strike price is typically at a discount to the preferred stock.
- Restricted stock is much easier to value in present day dollars.



EVALUATING OFFERS

Looking at real world offers from 2022-23

FOUR OFFERS: TITANTECH PUBLIC

- Based on real offer data
- **Size**: 10,000+ people
- **Market capitalization** of over $100B
- **Title**: Software Engineer
- **Offer Terms**:
  - Base compensation: $120,000 - $140,000
  - Relocation / ~~Signing Bonus~~:
    $10,000 to $25,000
  - Annual Bonus: 10%
  - Equity: RSUs with a current value of $100K to $150K, vesting over 4 years
  - Perks / Benefits: Too many to count, 401(k) match of 100%

FOUR OFFERS: UNICORNTECH PRIVATE

- Based on real offer data
- **Size**: 500+ people
- **Market capitalization** of over $1B
- **Title**: Software Engineer
- **Offer Terms:**
  - Base compensation: $140,000
  - Relocation / Signing Bonus: $10,000+
  - Annual Bonus: None
  - Equity: Either $200K - $320K RSU or Stock options for 0.01% of the company, vesting over 4 years
  - Perks / Benefits: Free food, lots of perks, no 401(k) matching.

FOUR OFFERS: NEXTBIGTHING

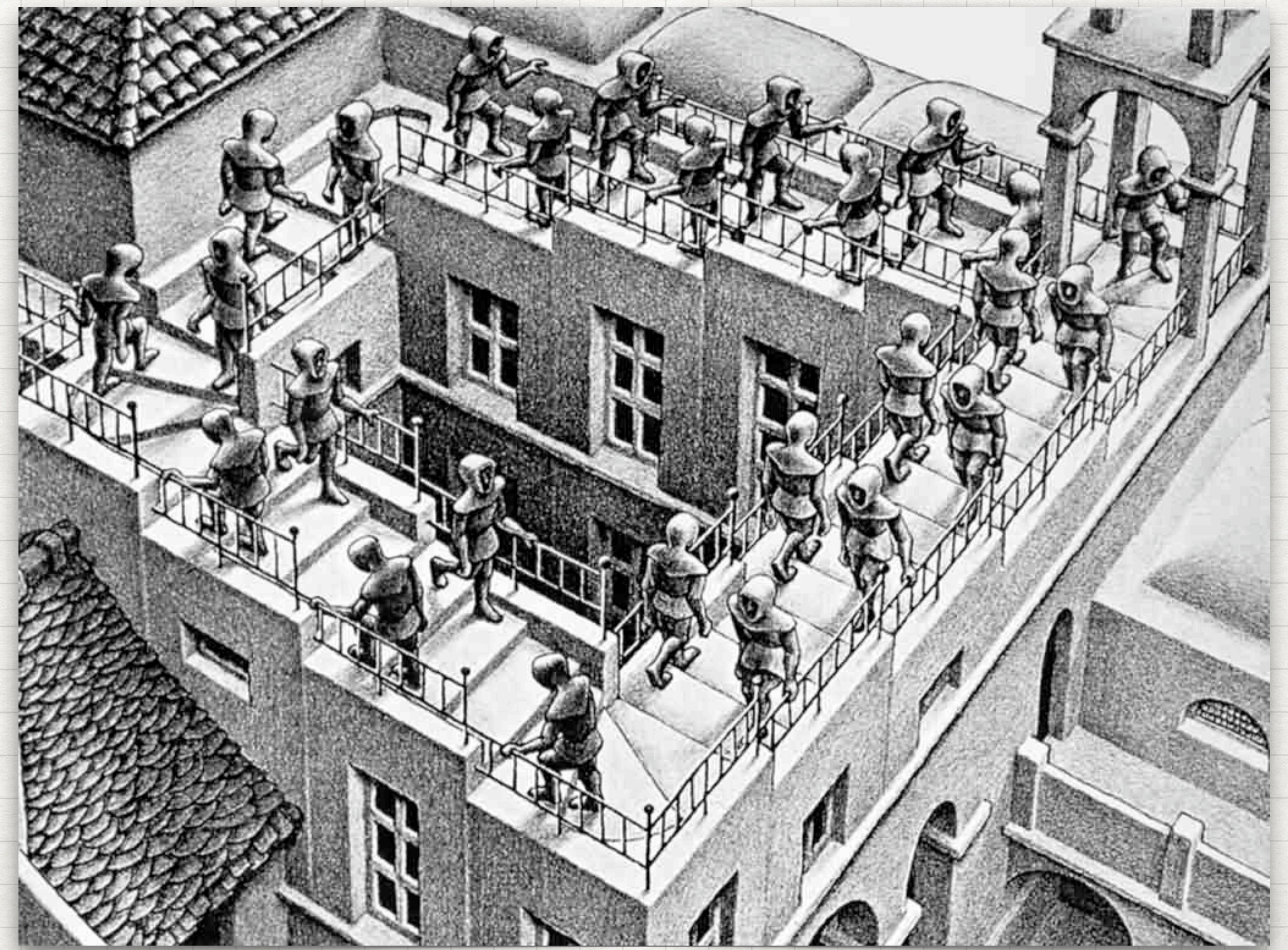
- Based on real offer data
- **Size:** 30 people
- **Market capitalization**: raised $15M Series A at $60M valuation
- **Title**: Software Engineer
- **Offer Terms**
    - Base compensation: $120K - $145K
    - Relocation / Signing Bonus: $0
    - Annual Bonus: None
    - Equity: Stock options worth 0.1% (10 bps) of the company, vesting over 4 years
    - Perks / Benefits: Basic. Health insurance, 401(k), Parking / Transit Pass.

FOUR OFFERS: TOOBIGTOFAIL JUMBOBANK

- Based on real offer data
- **Size:** 100,000+ people
- **Market capitalization**: Over $200B
- **Title**: Analyst
- **Offer Terms**
    - Base compensation: $100K - $120K
    - Relocation / Signing Bonus: $20K
    - Annual Bonus: $60K - $100K
    - Equity: None
    - Perks / Benefits: Generous financial benefits, not a lot of perks, quite a bit of travel & airline miles.
    - Considerations: 80-100 hr weeks, travel, unpredictable timing (deals)
- **With promotion, can reach $300K - $500K total compensation in 3-5 years.**

IT'S NEVER JUST ABOUT MONEY

- For equity, what is the potential for upside in the value of the company? Downside?
- Company success disproportionately affects job offers from future companies, but success in technology can be fleeting.
- Title vs. Compensation vs. Quality
- Talent & network matters significantly
- Building skills / experiences / achievements with lasting value
- Career trajectories vary. Success rates. Luck. Potential future roles.
- The market is fairly efficient, but it does not compensate for all types of risk.



LAST WORD: NEGOTIATION

- The market is fairly efficient, but companies vary significantly in their approach.
- Some reward negotiation. Others explicitly work against it. Lack of negotiation is one of the contributing causes to pay disparity. Polite but firm is often the right approach.
- High quality companies do a lot of work on fair compensation, but startups can vary widely. Know the market data.
- Some terms are more flexible than others. Base comp is often more difficult to move than signing bonus or equity. If you are going to a private company, it's almost always a bet on equity anyway.
- Don't be afraid to approach the topic of fair compensation with your manager. Understand the difference in roles between a recruiter & a manager.
- Be emotionally honest with yourself on what is a deal breaker. Lines in the sand can be hard to erase.

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QUESTIONS

WEEK 4: SPEND LESS THAN YOU MAKE

- Income vs. Spending
- Time frames
- Budgets
- Savings Rates
- Personal Income Statement