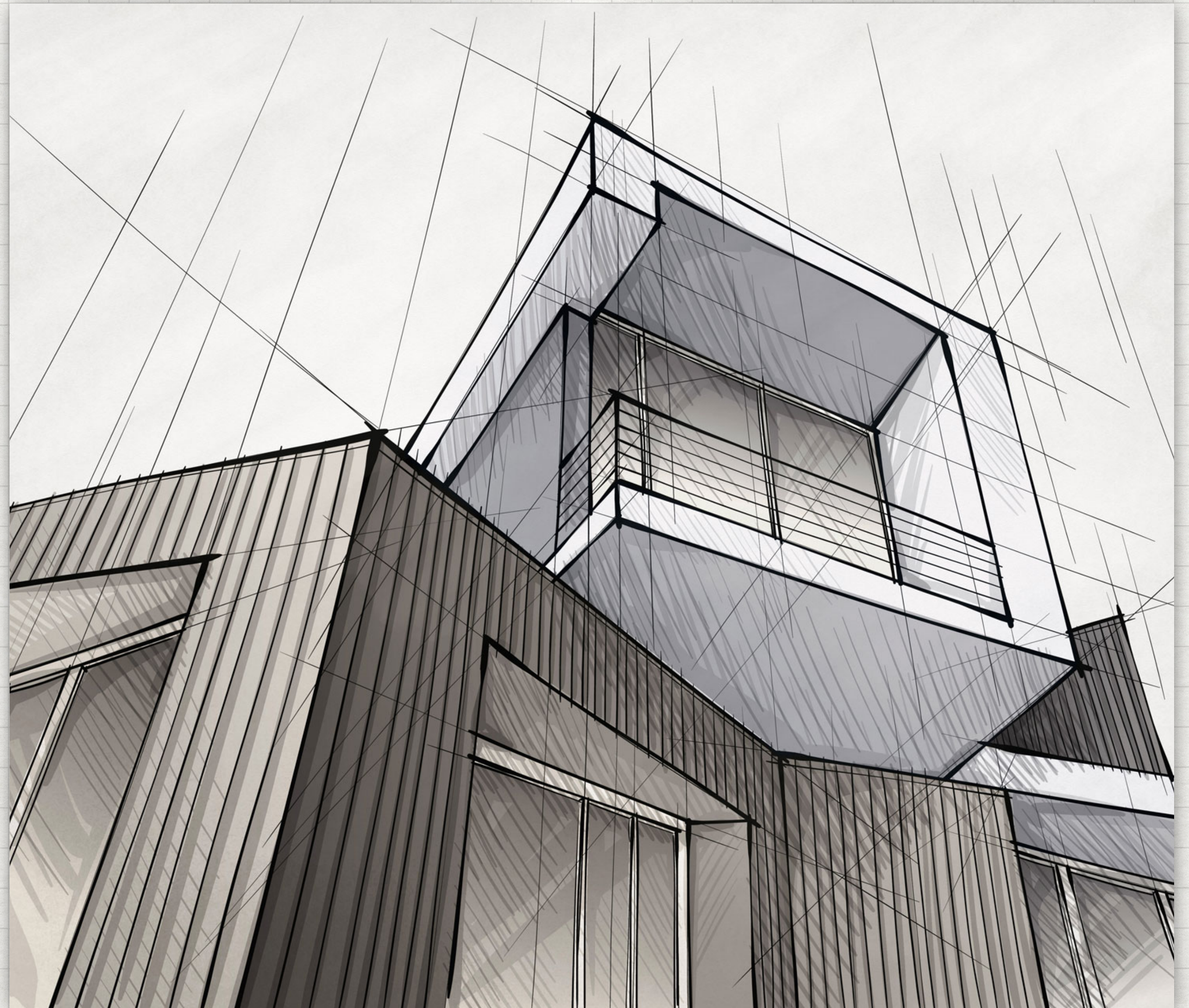


CS 007: SESSION 1

PERSONAL FINANCE FOR ENGINEERS



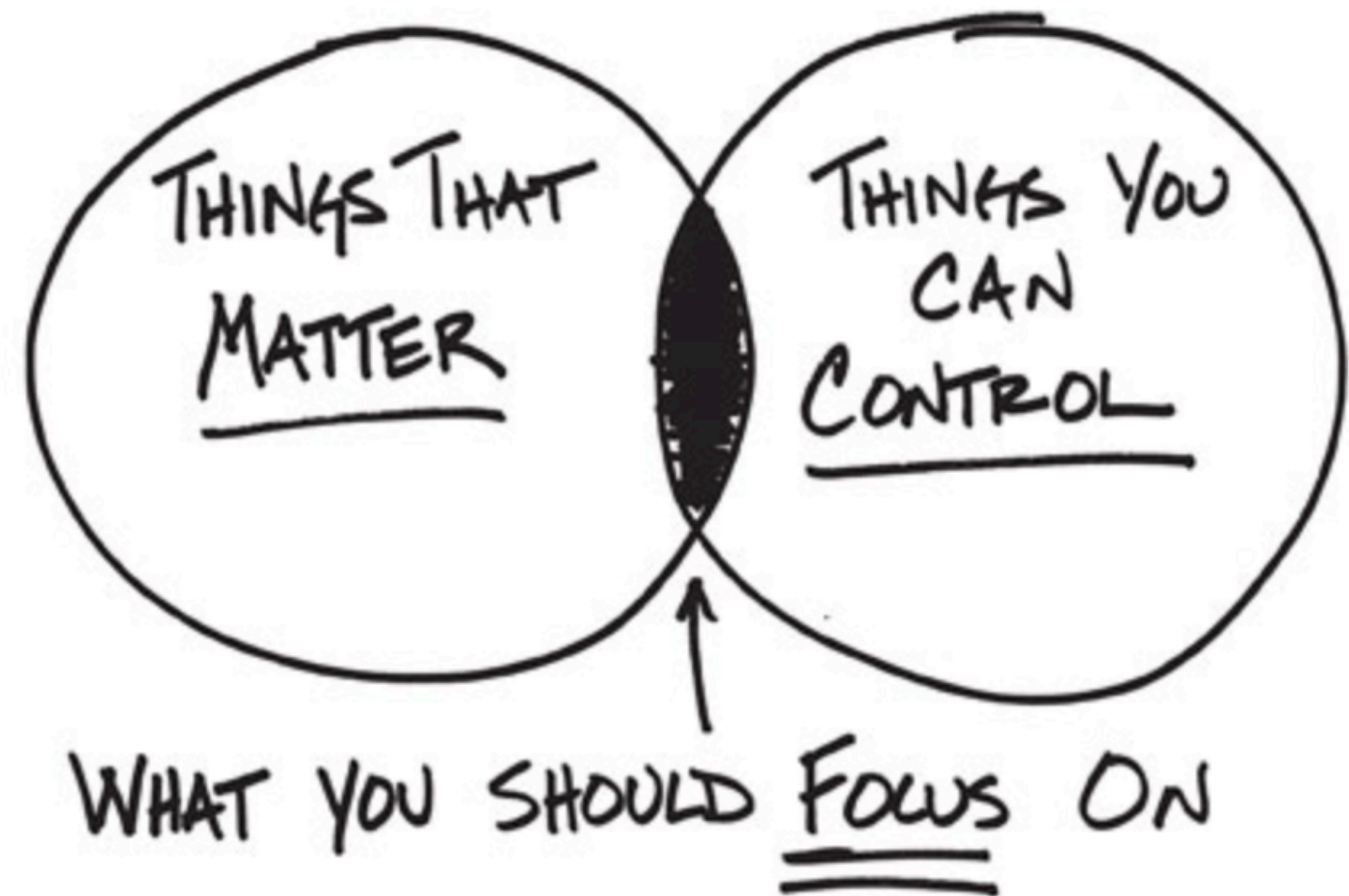
DISCLOSURES

STANFORD UNIVERSITY • COURSE MATERIAL • CS 007 • FALL 2026-7

- These slides are provided as-is and do not necessarily match the exact version of the content provided in classroom for students formally enrolled in the class at Stanford University.
- This presentation is intended to provide information and frameworks to assist the additional research and education of individuals. This presentation is not financial advice, nor is it intended to provide advice for specific financial decisions.
- These slides are provided publicly to be used for non-commercial purposes only. All material derived from this content must include appropriate citations to Adam Nash & Stanford University.

WHY PERSONAL FINANCE?

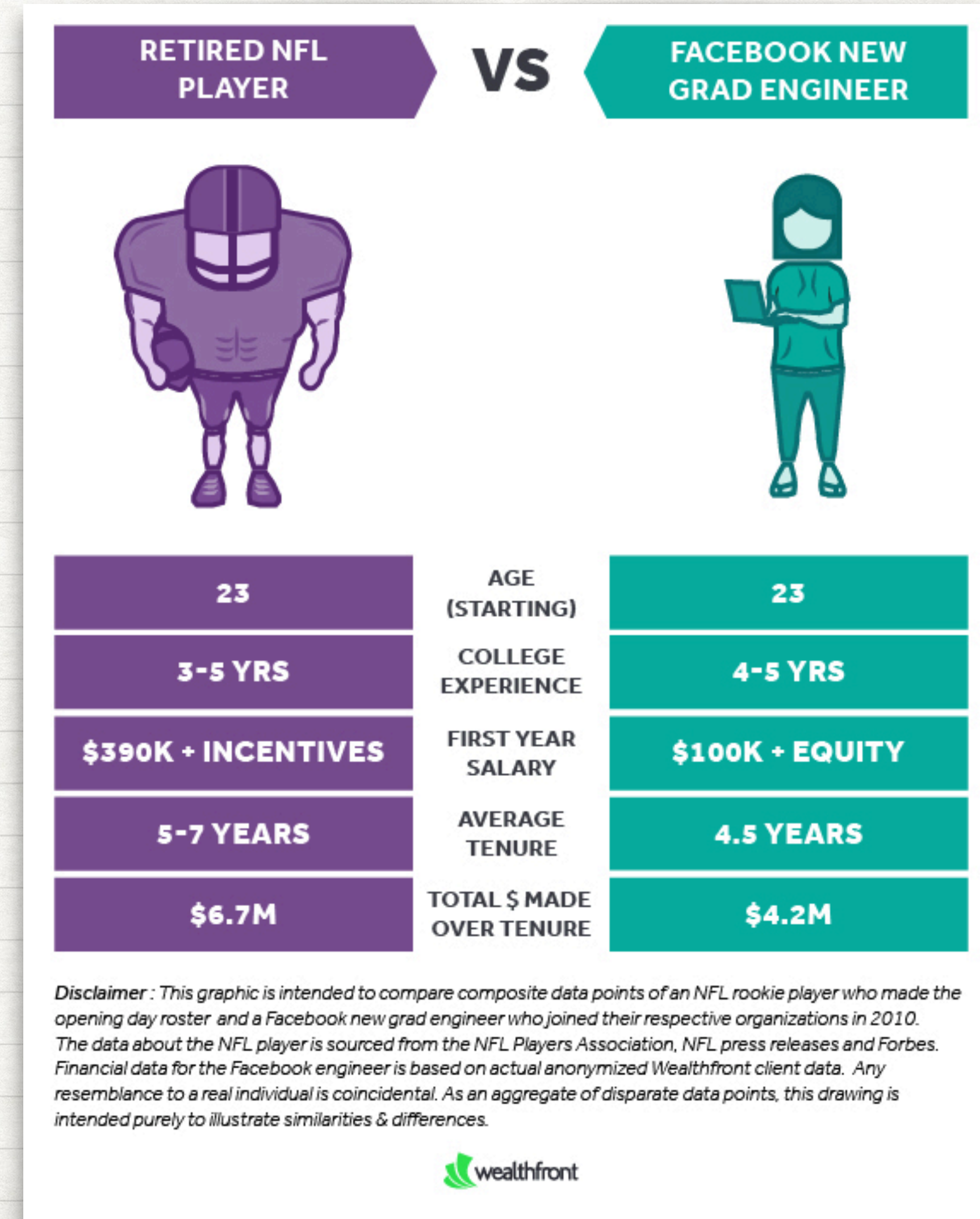
- Poorly covered in secondary school & university curricula, even at top schools.
- Not technically difficult, but the signal-to-noise ratio is terrible.
- Massive impact on your life.
- Affects everyone.



BEHAVIORGAP.COM

WHY FOR ENGINEERS?

- Engineers are typically well educated in math, and enjoy it.
- Engineers face significant financial decisions early in life.
- Engineers tend to believe that they are rational decision makers.
- Engineers create products that can affect the finances of billions.



REAL QUESTIONS, REAL DATA

- Most adults do not feel comfortable talking about money & financial decisions with friends & colleagues.
- Bad data can lead to bad decisions
- This class will be based, whenever possible, on real data
- Please push yourself to share openly, and ask the questions you really want answers to.



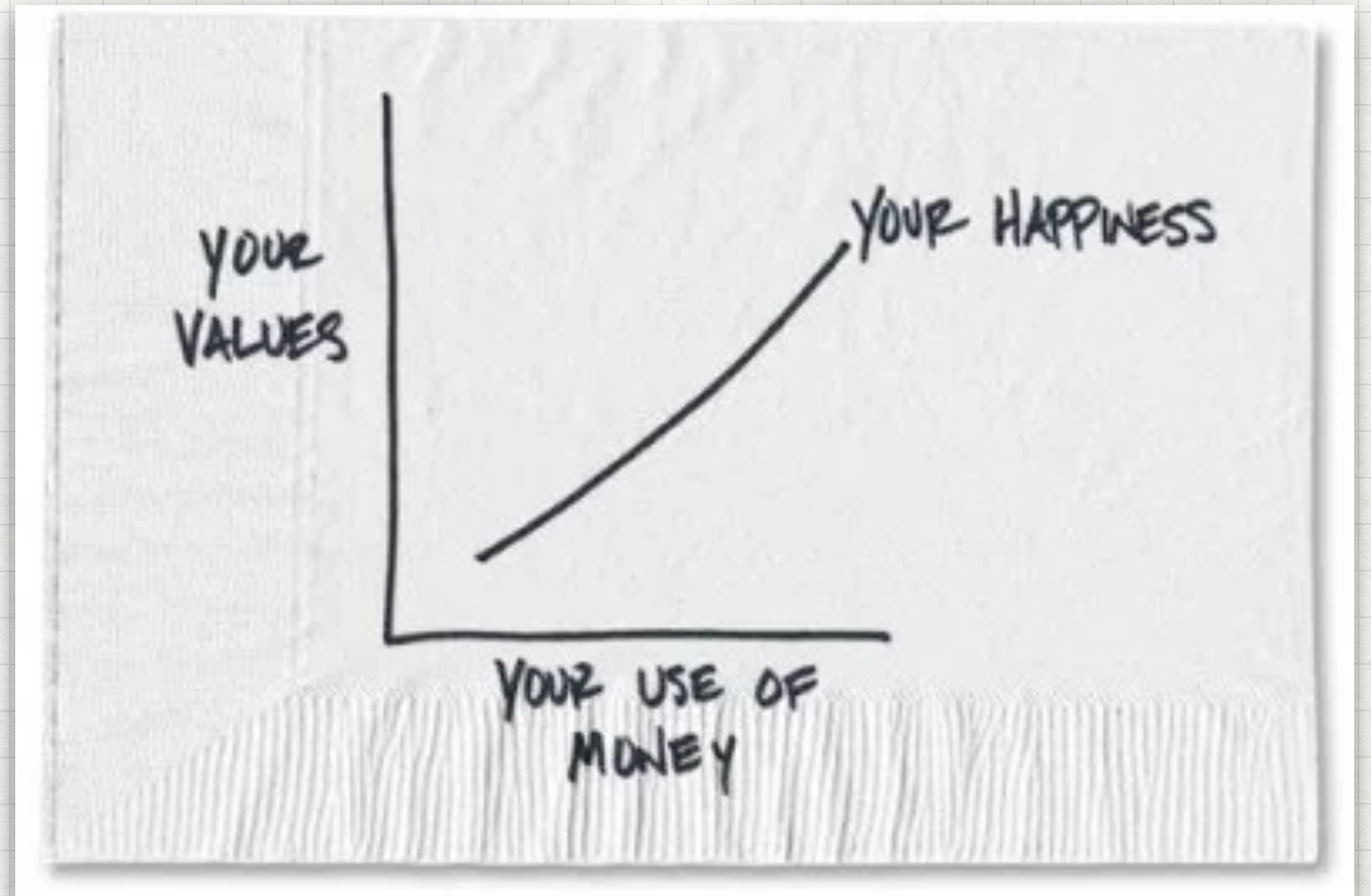
SOCIAL CONTRACT: BUILD TRUST

- Students in this class come from a wide variety of financial situations
- We are lucky, because this diversity can help educate us on a broader set of potential financial decisions
- Assume your classmates deserve privacy about the financial information they choose to share
- Do everything you can to earn & deserve their trust



CS 007

CLASS SURVEY



1: WHAT YEAR ARE YOU?

- This class is optimized for students who will be graduating soon.
- It is never too early to start learning about personal finance.
- My personal journey really started after my sophomore year, when I interned with Hewlett-Packard...



A= 1

What year are you in school?

73 out of 73 people answered this question.

Overview

Trends



40

30

20

10

0

30

18

12

6

7

Freshman (1st
Year)

Sophomore
(2nd Year)

Junior (3rd
Year)

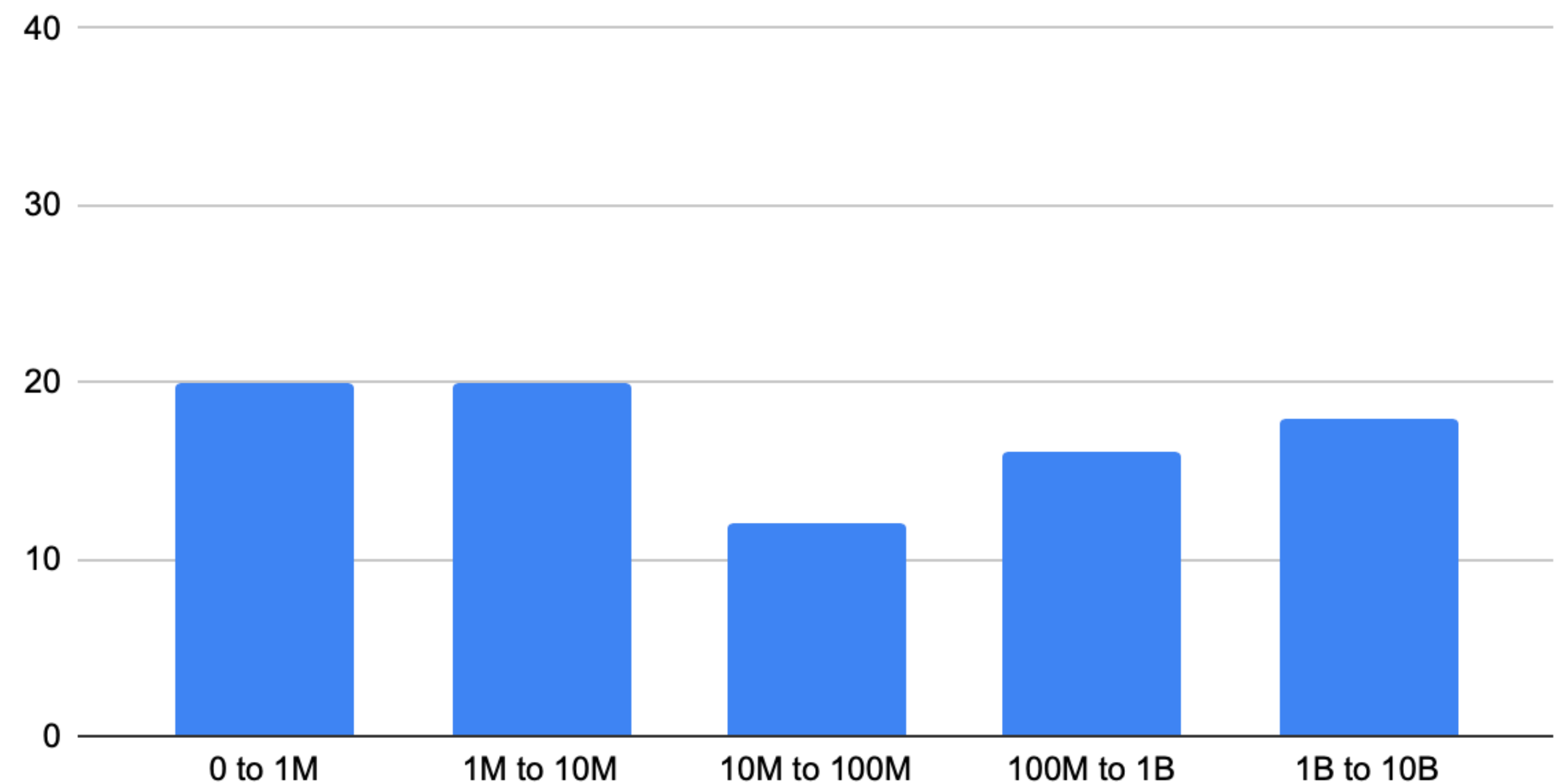
Senior (4th
Year)

Graduate
Degree (5th+)

2: HOW DO YOU DEFINE WEALTH / SUCCESS?

- Is there a “magic number?”
- Expectations vary widely.
- Some people find success focusing on goals, others on running up a score.
- Your peers do not adequately describe the range of successful financial outcomes possible, nor the range of lifestyles that could make you happy.

What amount of money would you have to accumulate for you to feel wealthy & successful?



Low: \$90,000 🤔 — some responses were likely annual numbers
High: \$10 Billion 🤯 — no one feels the need to beat Elon?

3: HOW MUCH DO YOU KNOW ABOUT YOUR PARENTS 💰

- Many parents are conflicted about how to talk about money.
- This is not surprising, because money can be an uncomfortable reflection of values & behavior.
- Many parents are better prepared to discuss sex & drugs with their children than money.
- This class could be an opportunity for you to learn with your family.

3

How much do you know about your parents / guardians financial lives?

73 out of 73 people answered this question.

Overview

Trends



40

30

20

10

0

6

30

34

3

Not much. This
information was...

Some. They share
limits around lar...

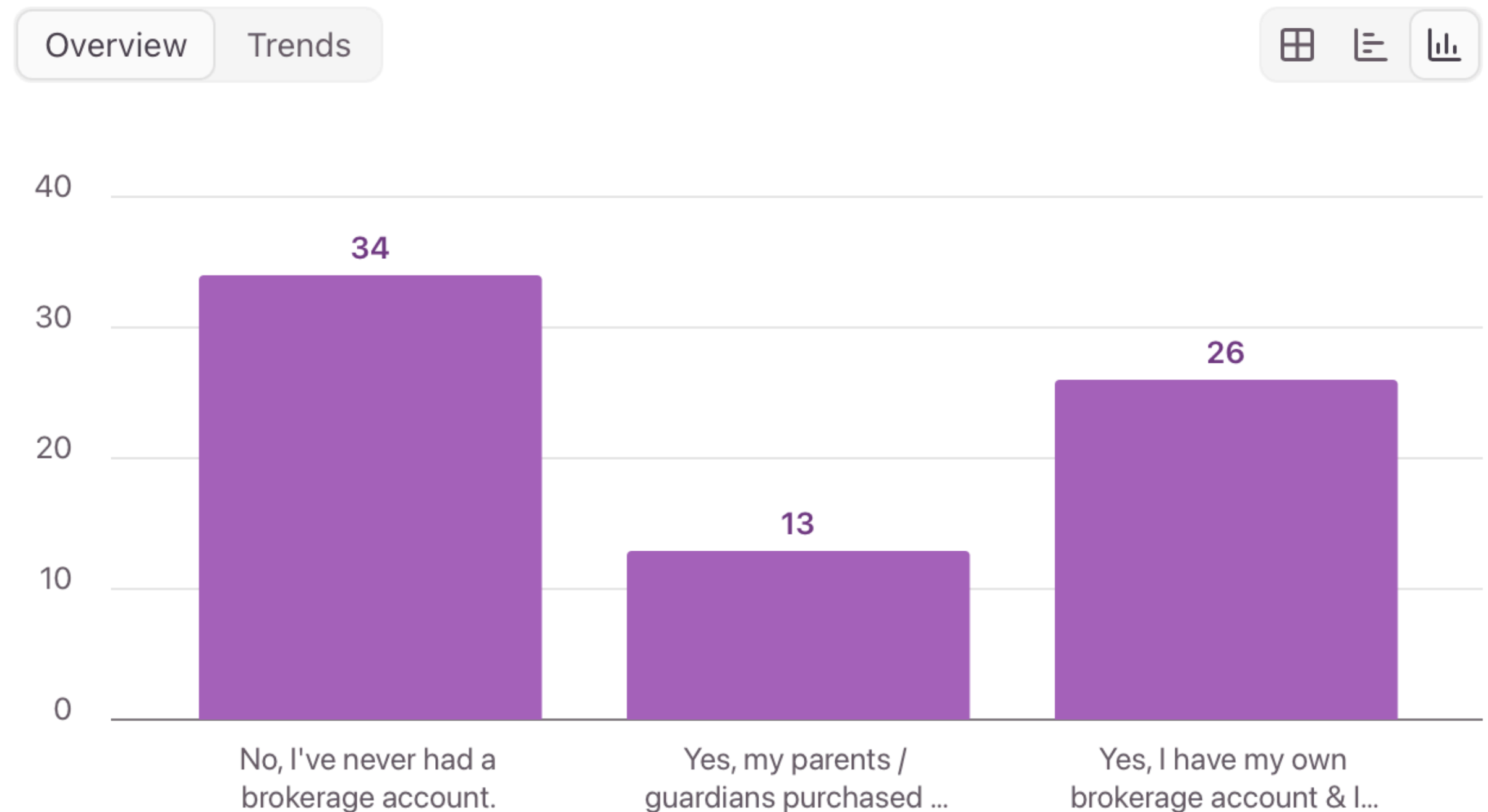
Quite a bit. I feel
like I understand...

Everything. I've
been involved p...

4: PURCHASED STOCK, ETF OR MUTUAL FUND?

- 64% of American households have Amazon Prime, but only 58% own stocks. (Source: Gallup)
- The top 1% of households by wealth own 50-54% of all company shares. (Source: Goldman Sachs, FT)
- Owning stock can be a path to learning about companies & investing.
- Investing in equities, ideally through an index fund, can be one of the best ways to build long term wealth.

4 Have you ever purchased a stock or an exchange traded fund (ETF) in a brokerage account?
73 out of 73 people answered this question.



5: FILED YOUR OWN TAXES?

- If you earn money from a job, you should be filing taxes.
- Many financial decisions are seriously impacted by taxes.
- Ignoring the after-tax value of a financial decision can lead to serious financial mistakes.
- An irrational fear of taxes can also lead to poor financial decision making.

5

Have you ever filed your own taxes?

73 out of 73 people answered this question.

Overview

Trends



60

40

20

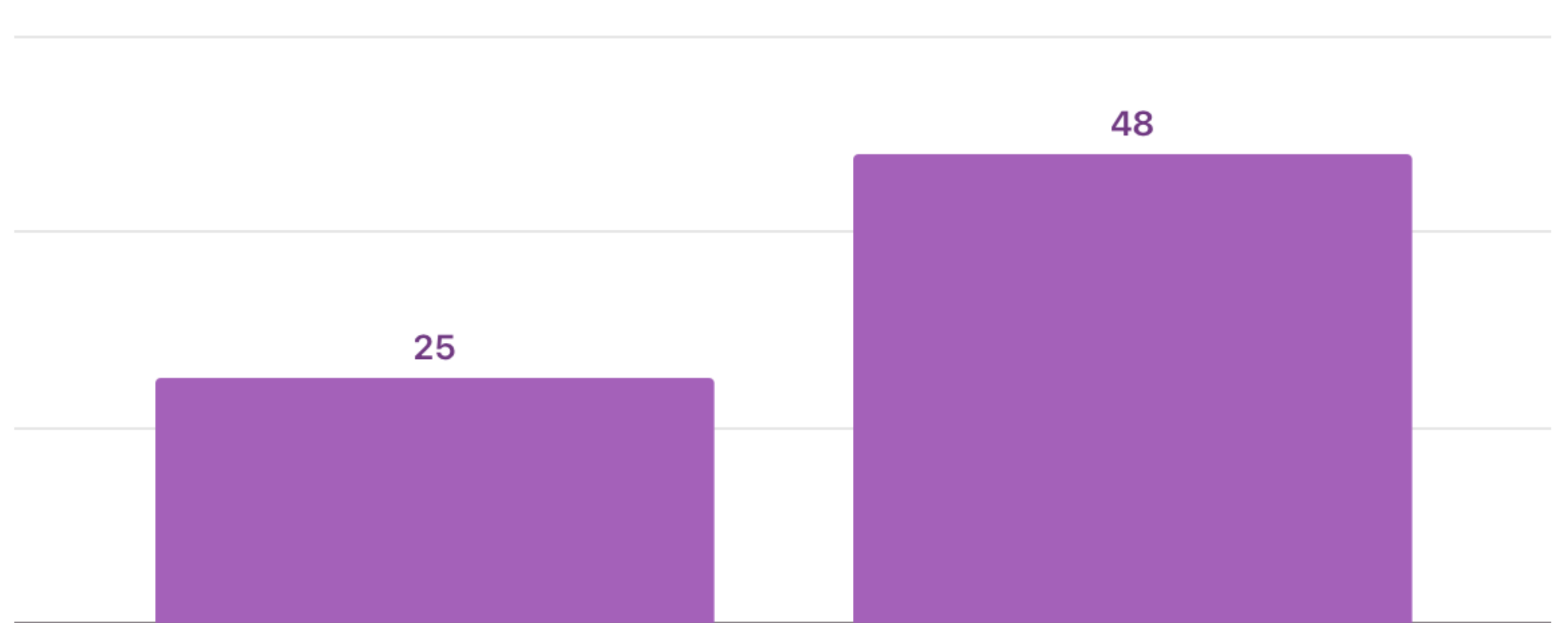
0

25

48

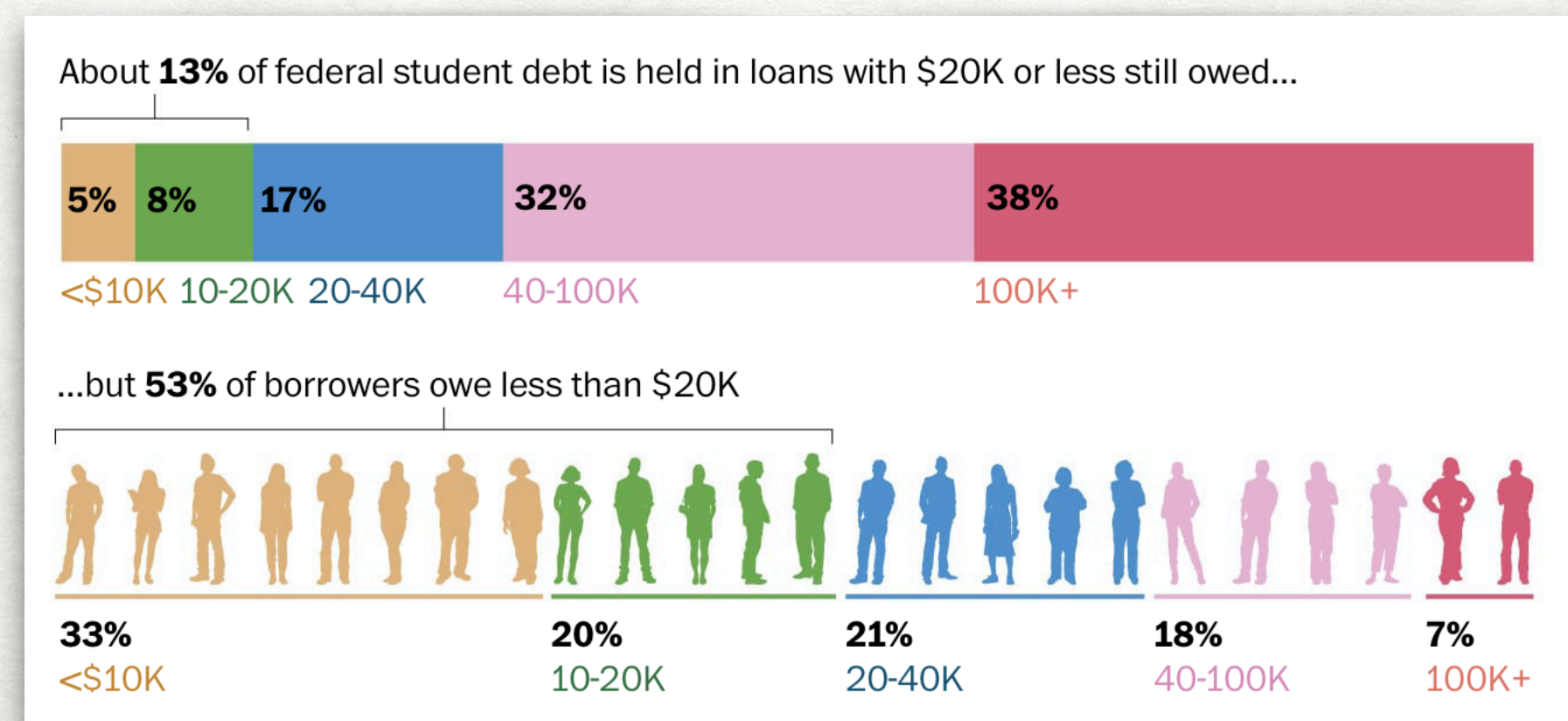
Yes

No



6: STUDENT LOANS THAT YOU ARE RESPONSIBLE FOR?

- National student loan debt at \$1.86T
- 42.6 million student loan borrowers.
- Average debt for per borrower is \$43,521, including private loans.
- 10.4% of borrowers default in first three years of repayment.



* <https://fred.stlouisfed.org/series/SLOAS>

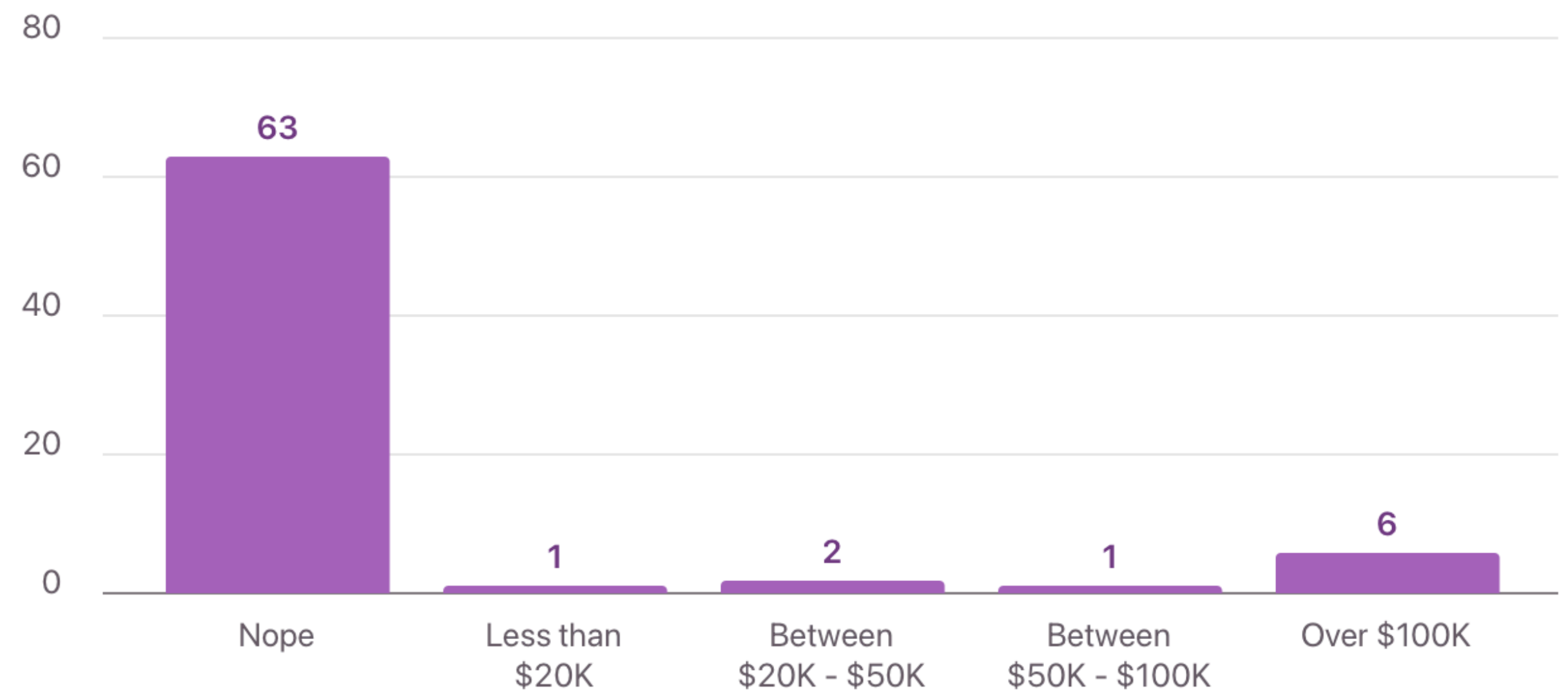
* <https://www.washingtonpost.com/education/2022/05/22/student-loan-borrowers/>

6 Do you have student loans that you will be responsible for after college?

73 out of 73 people answered this question.

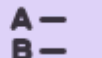
Overview

Trends



7: WHAT % OF YOUR SALARY SHOULD YOU SAVE?

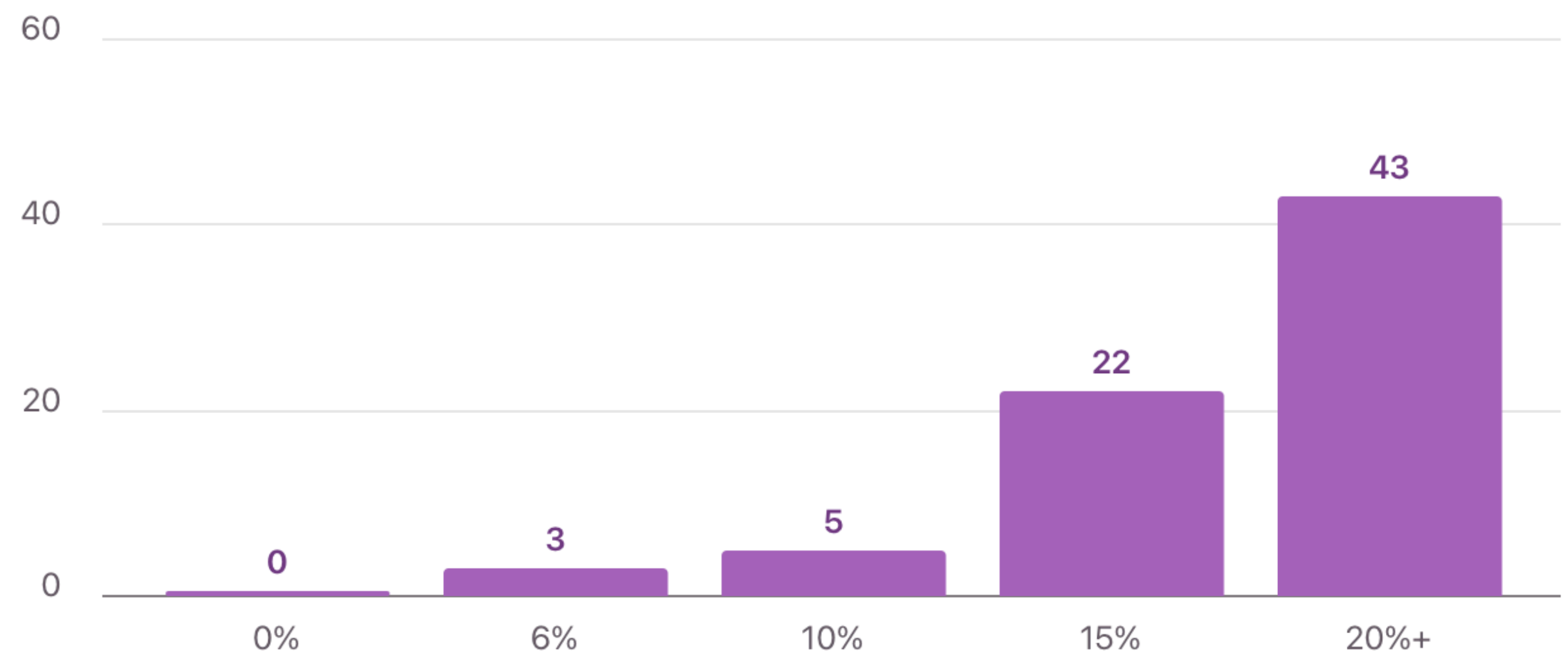
- Spend less than you make.
- 10% is not the right answer.
- There is no magic rate of savings, but when you save you win two ways.
 - Saving means learning to live on less, which lowers your goal.
 - Saving means more capital to invest to reach your goals.

 7 When you graduate, what percentage of your salary do you believe you should save every month?

73 out of 73 people answered this question.

Overview

Trends



8: WHAT % OF AMERICANS HAVE \$400 FOR EMERGENCIES?

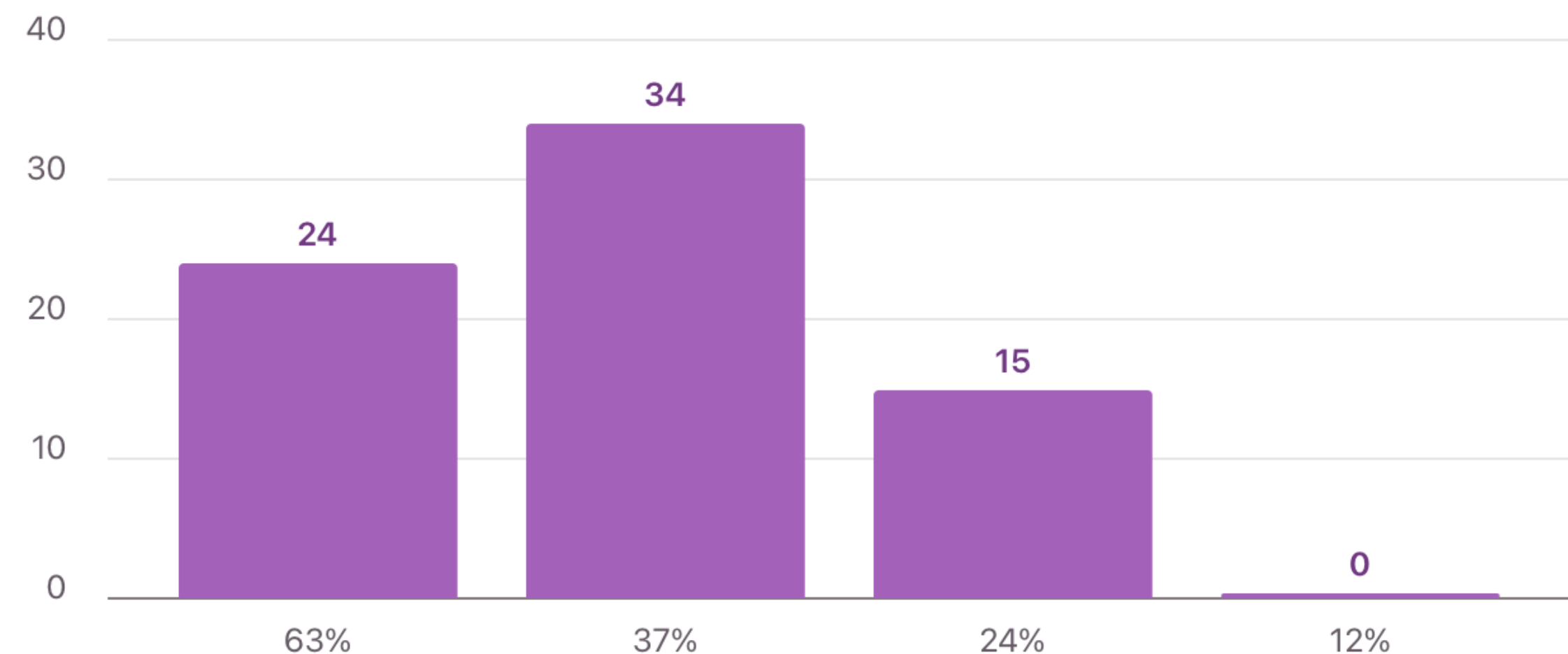
- Commonly misquoted statistic.
- US Federal Reserve reported in 2026 that 37% of Americans do not have sufficient cash savings to cover a \$400 emergency expense.
- Actual survey question reveals the number is 13% that self-reported that they couldn't cover the emergency through other means.
- Liquidity means having access to money when you need it.
- Don't underestimate the value of liquidity. Liquidity matters.

8 What percentage of American households would not be able to cover a \$400 unexpected expense in cash? (answer to the best of your knowledge)

73 out of 73 people answered this question.

Overview

Trends



9: WHAT DO YOU BELIEVE IS MEDIAN INCOME IN US?

- Financial statistics can be confusing, because the time period, data set and questions vary dramatically.
- US Census reported median household income at \$87,486 for 2025. IT was \$83,730 for 2024.
- US Census reported median household income in California at \$101,149 in 2024.
- US Census reported median household income in Palo Alto at \$231,101 in 2024. Average of \$315,665.

9 What do you believe is the median household income in the United States?

73 out of 73 people answered this question.

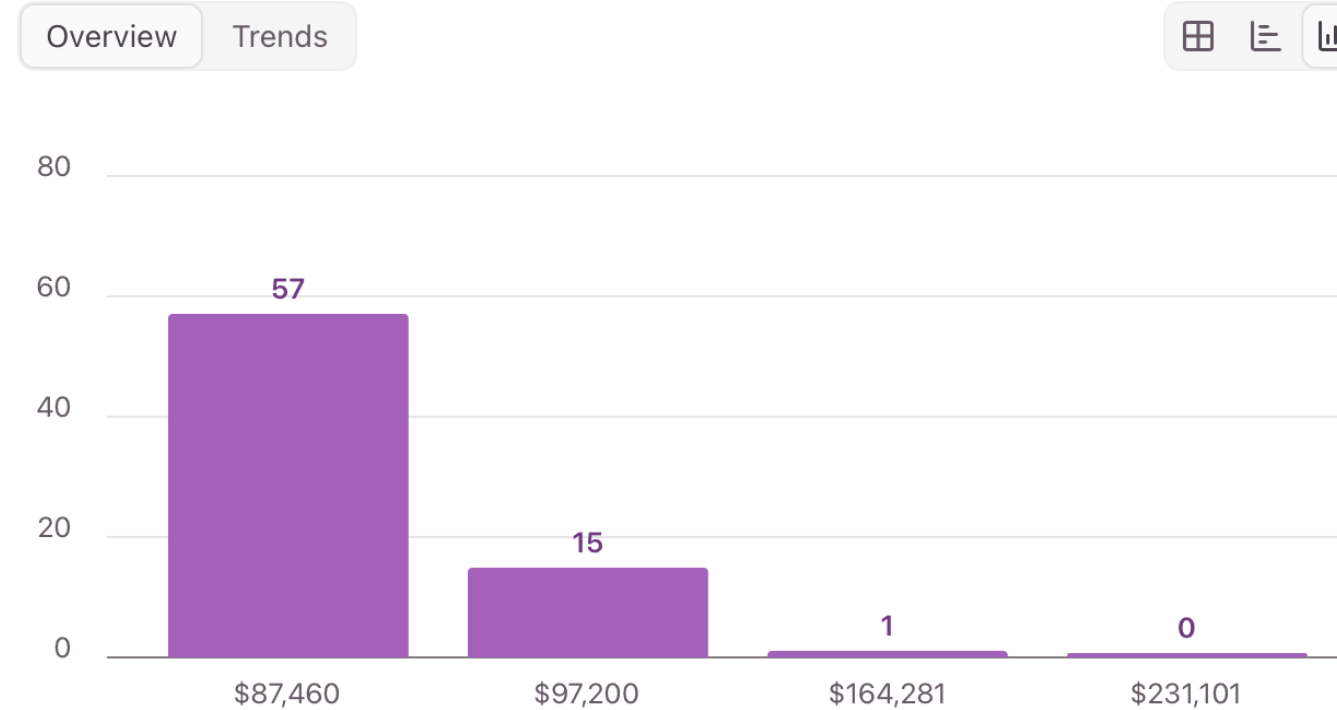
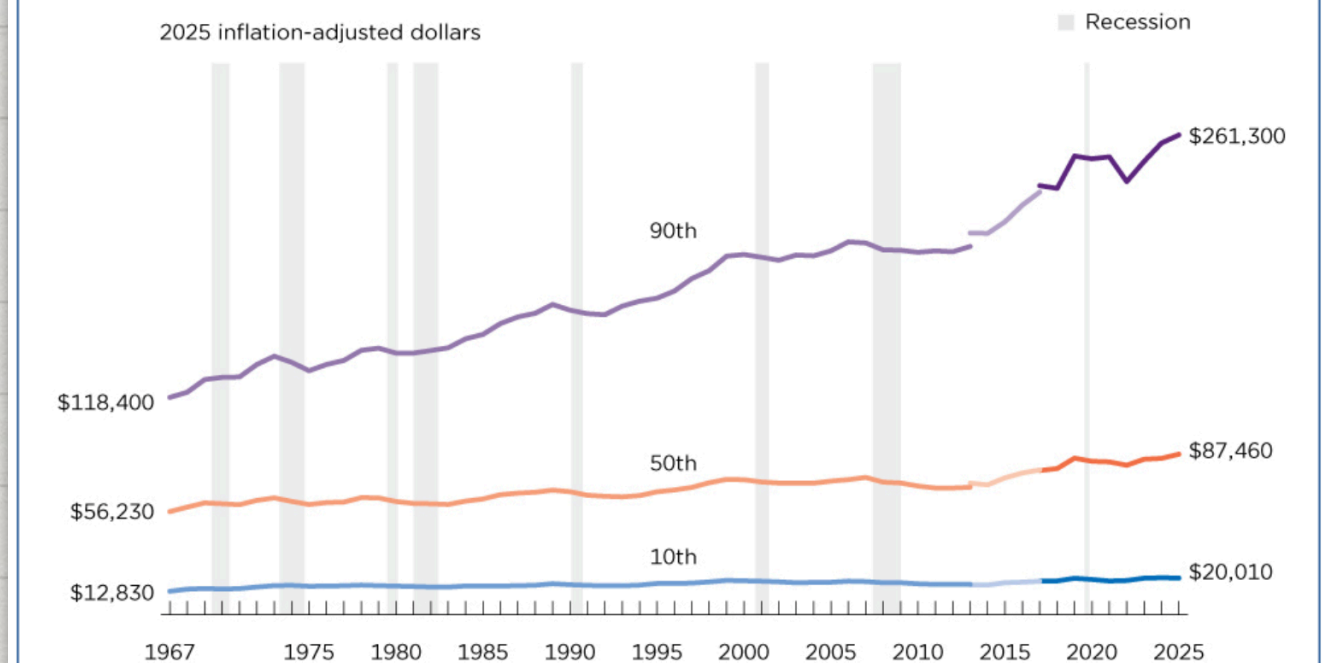


Figure 2.
Real U.S. Household Income for Selected Percentiles: 1967-2025

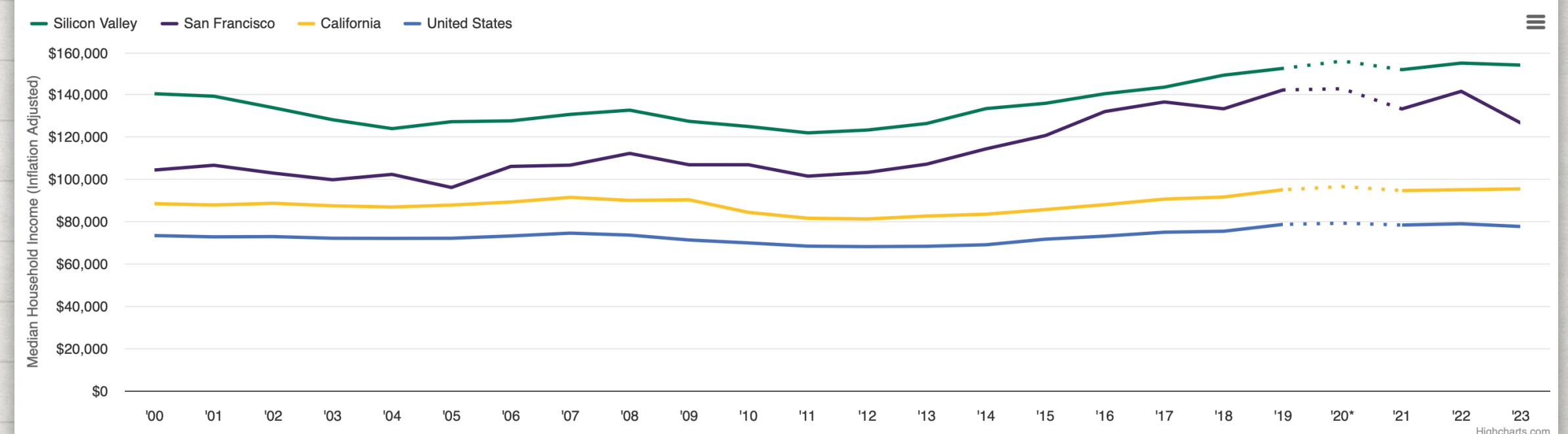


Note: Households as of March of the following year. The data points are placed at the midpoints of the respective years. Historical footnotes, including footnotes about breaks in series in 2013 and 2017, are available in Table 6 at <www.census.gov/library/publications/2026/demo/p60-289.html>. Definitions and information on confidentiality protection, and sampling and nonsampling error are available at <<https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar26.pdf>>.
Source: U.S. Census Bureau, Current Population Survey, 1968 to 2026 Annual Social and Economic Supplements (CPS ASEC; DMS number P-7534374, DRB approval number CBDRB-FY26-0279).

HOUSEHOLD INCOME

Median Household Income

Santa Clara & San Mateo Counties, San Francisco, California, and the United States



* <https://www.census.gov/topics/income-poverty/income.html>

* <https://data.census.gov/profile/California?g=040XX00US06>

* <https://siliconvalleyindicators.org/data/economy/income/household-income/median-household-income/>

10: WHAT FINANCIAL DECISIONS DO YOU WANT TO COVER?

- Good news: we will cover most of them in the prepared sessions
- Lots of questions about stocks, investing, and options
- Additional Topics from Last Year
 - Venture Capital / Private Equity
 - Derivatives
 - Crypto



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SYLLABUS



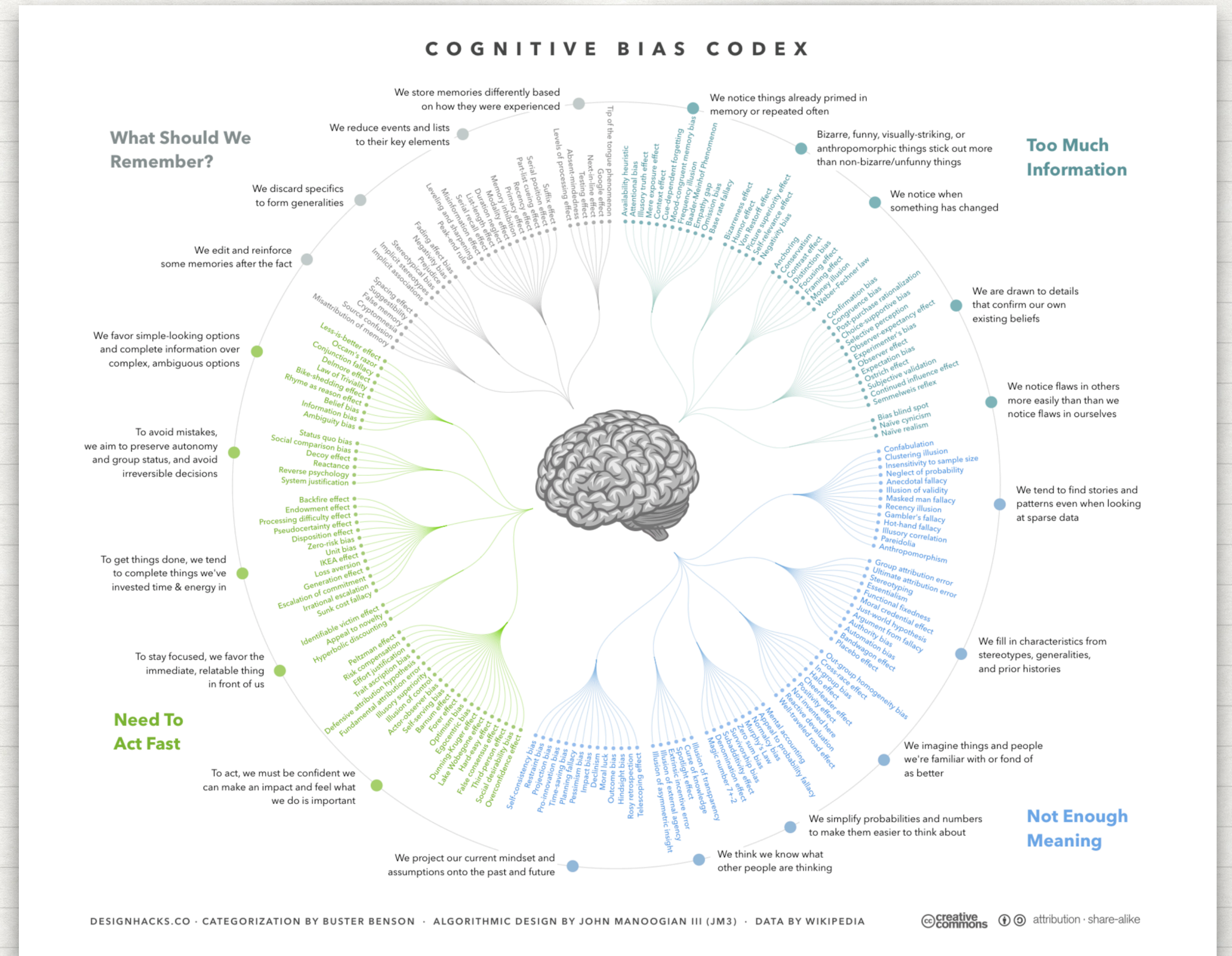
ADMINISTRATIVE DETAILS

- Email:
adamnash@cs.stanford.edu
- Slides will be posted on the course blog:
<http://cs007.blog>
- Everyone who wants to take this class can take this class...
- To register attendance:
 - Visit <https://bit.ly/cs007-attend>
 - Enter SUNET & Secret Word
 - Timestamp tells the tale
- As long as the timestamp for the magic word is before midnight, you are good.



WEEK 2: PREDICTABLY IRRATIONAL

- Behavioral Finance
- Cognitive Bias
- Impact on Financial Decisions



WEEK 3: GETTING PAID

- Compensation
- Different models & methods
- Public vs. Private Companies
- Stock Options vs. Restricted Stock
- Understanding Equity Compensation
- Taxes



WEEK 4: SPEND LESS THAN YOU MAKE

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



WEEK 5: YOUR FINANCIAL PROFILE

- Assets & Liabilities
- Liquidity
- Emergency Funds
- Personal Balance Sheet



WEEK 6: CREDIT & DEBT. DIGGING OUT.

- Different types of Debt:
Student Loans, Auto, Credit Cards, Mortgage
- Secured vs. Unsecured Loans
- Loans & Rates
- Credit Scores
- Compounding in Reverse



WEEK 7: GOOD INVESTING IS BORING

- The Magic of Compounding
- How to Calculate Returns
- Different Types of Investments: Stocks, Bonds, Commodities, Real Estate
- Diversification
- Modern Portfolio Construction
- Taxes Matter



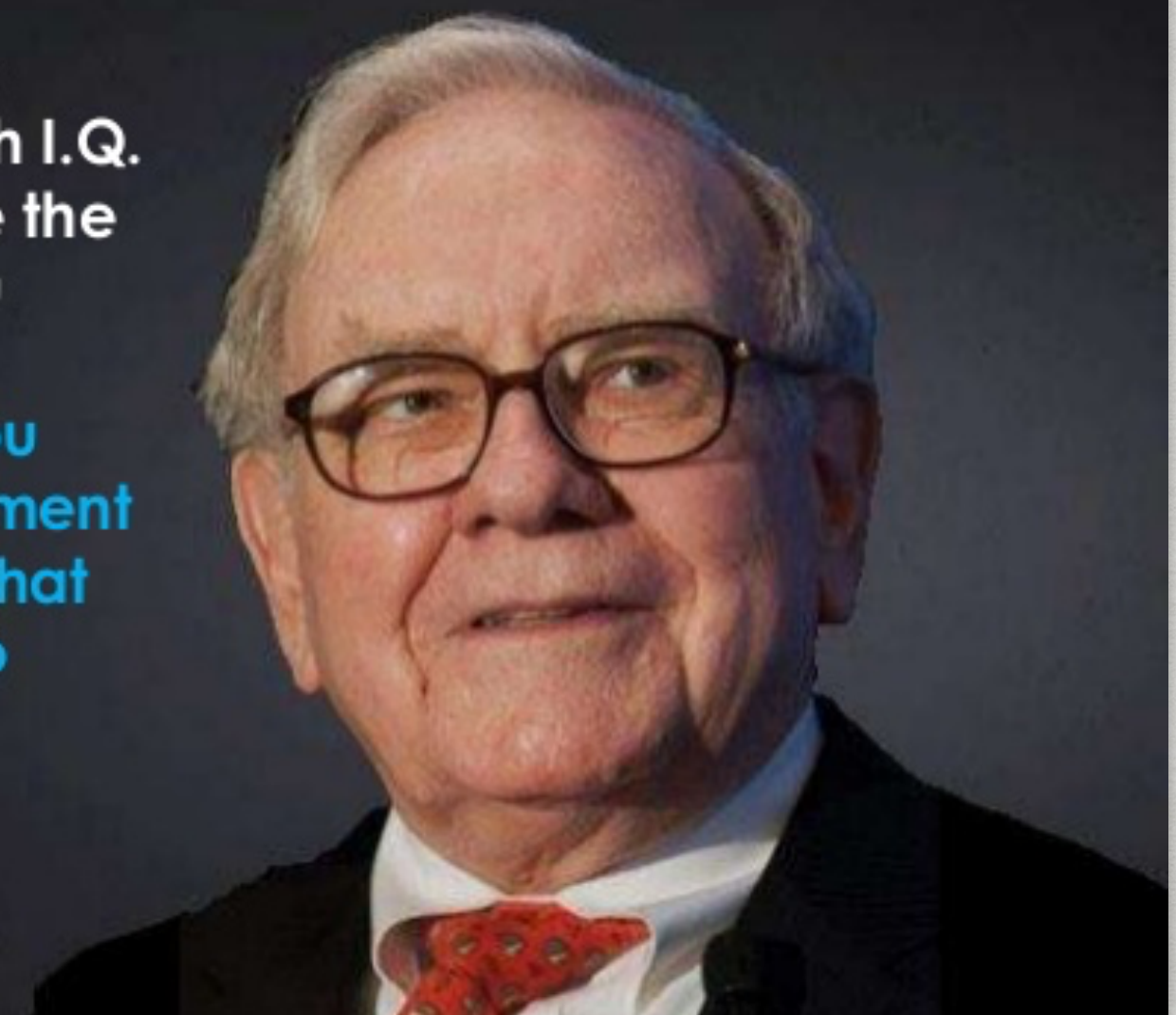
*If investing is entertaining,
if you're having fun,
you're probably not making
any money.*

Good investing is boring.

- George Soros

"Success in investing
doesn't correlate with I.Q.
Once you are above the
level of 25, once you
have ordinary
intelligence, **what you
need is the temperament
to control the urges that
get other people into
trouble in investing.**"

- Warren Buffett



WEEK 8: FINANCIAL GOALS

- How to Plan for Financial Goals
- Different Types of Goals:
Travel, Marriage, House, Children,
College, Starting a Business,
Retirement
- Life Insurance
- Couples & Financial Decisions



WEEK 9: LOCATION, LOCATION, LOCATION

- Real Estate
- Rent vs. Buy
- The Home as an Investment
- Rental Properties / Passive Income
- REITs & Partnerships
- Tax Benefits



WEEK 10: PEOPLE'S CHOICE

- Student Selected Topics
 - Derivatives
 - Venture Capital
 - Crypto!
- Final Thoughts
- CS 007 Alumni



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QUESTIONS

