Princeton University
Bendheim Center for Finance

ECO 102
Introduction to Personal Finance
Fall Term 2024

Instructor: Natalie Cox
Room 206A
Bendheim Center for Finance
nmcox@princeton.edu

Office Hrs: View current schedule here.

Lectures: 1:30-2:50 pm T Th, Location TBA

TA: TBA

Precepts: TBA

This course is an introduction to personal financial decisions for students with no prior knowledge of economics or finance. It introduces key concepts such as saving, borrowing, interest rates, risk, and diversification. It also provides an overview of important financial products and services such as bank accounts, retirement accounts, mutual funds, mortgages, credit cards, and insurance. Students learn to avoid common financial mistakes due to inertia and behavioral biases. Key concepts are illustrated through real-world examples and homework exercises with practical calculations.

Course Organization

The course will meet twice a week on Tuesdays and Thursdays from 1:30-2:50 pm. The slides for the lectures will be posted on Canvas before the lecture, and I will also make my best attempt to record and post the lectures in case you are unable to attend.

For office hours, I use an online calendar where you can either sign up for a 1-on-1 meeting or see where group office hours will be for that week.

The AIs for the course are still to be determined. They will grade assignments and exams, and will hold a weekly precept that you can treat as another source of office hours.

Grading

- Grade Components –
    1. Homework - 20%
        - There will be 2 homework assignments, which ask you to apply some of the concepts covered in class to real life situations. The answers will be open-ended and allow for creativity.
            - In the first homework assignment, you will be asked to make savings and investment decisions for a hypothetical sum of money. You will be asked to discuss how your answers (and returns) might change based on different macroeconomic and personal factors.
            - In the second homework assignment we will focus on borrowing decisions. Namely, you'll be asked to analyze a mortgage/home-purchase decision when considering factors like: credit score, interest rate levels, mortgage term and rate type, local housing prices, and monthly budget.
        - As far as grading is concerned, the homeworks will be graded on a regular scale, based on the thoroughness and thoughtfulness of your analysis. Homework should be completed and submitted individually. You are welcome to discuss the homeworks with your peers, but the work you submit should be your own.
    2. Midterm and Final Exam - 40% each
        - The midterm and final exam will require you to use the tools and skills you have developed during the entire class. The best way to prepare for the exam is to prepare for, attend, and actively participate in every class.
        - Both exams are equally weighted (40% each) and will be a similar length.
        - The midterm will focus on material from the first half of the course, while the final will focus on material from the second half of the course.
- Participation –
    - There is not a formal portion of the grade devoted to participation. I will not record/grade lecture attendance, but I strongly encourage students to attend in order to stay on track and not become overwhelmed by the material.
    - However, if I feel a student has a made a considerable effort to improve their performance in the course (attending office hours, lecture participation, etc), I do reserve the right to bump up their grade when assigning final grades.
- Regrades –
    - If you feel that there was an error during the grading of your homework or exam, you can request a regrade of that particular section or question.

    - To do this, please write a clear summary/explanation of why you believe the grading decision is incorrect, and email your summary as well as a scan of the homework/exam in question to myself and both AIs.
    - Regrades need to be submitted no more than 7 days after a homework or exam has been returned.
- Curving –
    - I do not assign letter grades to exam results or approximate letter grades during the semester – i.e. I will not tell you "you currently have an A-" or "you currently have a B" after the midterm.
    - Instead, you will be able to receive information on your numerical score and where it falls within the class score distribution. For example, after the midterm I will provide information on the score mean and percentiles.
    - Ultimately, at the end of the course I will combine your scores according to the weights outlined above and assign letter grades based on percentile cutoffs (i.e. a "curve").
        - These percentile cutoffs are not set in stone, but I will aim to give some type of an A to 65-70% of the class, and some type of B to 25-30% of the class.
        - Of course, if everyone receives 95% of the course points, I will be assigning a higher percentage of A's.

<u>Laptop Policy:</u> I'm fine with laptops in class as long as they aren't a distraction.

<u>Lecture Schedule</u>

Module 1 – Intro and Basic Tools

Introduction to the course and the household's budget constraint

- Course introduction
    - This course will be a mixture of a conceptual/theoretical framework (put on your economist hat) and very practical facts/institutional details (how does an IRA work)?
        - We will also occasionally sprinkle in "empirical evidence" – I.e. what does the distribution of household debt look like in the US today?
    - Syllabus – grading structure, expectations
- Conceptual Framework: What are the elements of a simple budget constraint (spending – saving + borrowing = income) and how do they map to different elements of the course?

        - Income – experiences growth and uncertainty over time ("smoothing consumption" is an impetus for borrowing and saving)
            - Expected trajectories – impacted by age, occupational choice, skills
            - Risk – what causes income fluctuations? Health shocks, employment shocks. Motivation for insurance as well as borrowing/saving.
            - Length – when does income end? Hard to predict, but impacts decision like when to retire, how much to save, how much to consume along the way.
        - Saving/investing – Tool to smooth consumption when income is high
            - Risk/Return tradeoffs
            - Time horizon
            - Preferential tax treatment of certain investments
        - Debt/borrowing – Tool to smooth consumption when income is low
            - What determines the interest rate you will pay? Collateral, credit score, macroeconomic environment.

Bootcamp: Fundamental tools and concepts for the finance/economics novice

- Compounding and the time value of money
- Inflation and interest rates
- Basics of probability
- Utility basics: Risk aversion, discount rate, preference for smoothing consumption
    - How do these shape our attitudes towards uncertainty?
    - How do impatience and interest rates affect the choice between consumption today and consumption in the future.

Module 2 – Savings, Investment, and Risky Returns

Understanding the Risk/Return Tradeoff and Different Investment vehicles

- Conceptual Framework: Tradeoff between risk and return
    - Understanding risk aversion (economics concept)
    - Need to compensate individuals for taking more risk
- Practical Applications: introduction to different types of financial assets/accounts and where they sit on the risk/return spectrum
    - These will include:
        - Checking, savings, and high-yield savings accounts
        - Differences between a stock and a bond
        - Differences between mutual funds and ETFs
            - Understand mutual fund fees and their effect on performance.
        - Index funds and the difference between active and passive management
        - Tax-favored retirement accounts…. More detail on that next lecture

Importance of diversification

- Independent risky assets vs. correlated risky assets
- The difference between safety and familiarity
- How to diversify

Module 3 – Wealth and Savings in Retirement: Tax-favored retirement accounts, Social Security, and housing wealth

Basic Life-cycle model

- Why do we need to save for retirement?
- Income over the lifecycle – inverse U shape, sources of uncertainty
- Primer on taxes

Tax-favored retirement accounts

- How do taxes impact investment returns?
    - Income tax, capital gains taxes, and dividend taxes
    - What does it mean to have a tax favored account?
- Practical Applications:
    - Know the difference between a traditional defined benefit pension and a defined contribution pension such as a 401(k)
        - What are the trends in the frequency of each?
        - Who bears the risk?
    - Understand the features of various types of retirement accounts including traditional IRAs, Roth IRAs, 401(k)s, Roth 401(k)s, 403(b)
    - Signing up (automatic enrollment and matching):
        - Default effects of automatic enrollment – what is a smart default? Is the default always optimal?
        - Understand the importance of contributing enough to 401(k) to get full employer match
    - Understand the benefits and costs to hiring a financial advisor
    - Know the role of a financial fiduciary
        - Know what questions to ask a potential financial advisor

Social Security Income

- Empirical facts: Breakdown of what income and wealth sources retired individuals rely on
        - The majority rely primarily on social security payments
- Practical Applications: What is the Social Security System?
        - Government/macro perspective: what is a "pay as you go" system?
        - Current contribution rates and pay-out schedule
        - Eligibility criteria – what are the penalties for early retirement?

Housing Wealth

- Another large source of wealth during retirement is housing
    - Empirical facts: the main asset of many elderly individuals is their home
    - How do you "monetize" a real estate asset?

        - Selling
        - Reverse mortgage
    - Thinking of housing as an "investment"
        - Returns in the housing market – empirical evidence
        - Mortgage as forced savings
        - Fixed costs – importance of time horizon in realizing a return
        - Decision of whether to rent or buy
        - Tax benefits of home ownership
        - Illiquidity of investment
        - Consumption value of housing
    - Topic of housing and mortgages will help us "bridge" the transition from saving to borrowing.
        - Next module: More on mortgages and debt in general…

Module 4: Credit and Borrowing

Types of debt, interest rates, and credit scores

- What are the common types of consumer debt?
    - Breakdown of current types of debt and trends over time
        - New York Fed resource: https://www.newyorkfed.org/microeconomics/hhdc
    - Difference between Revolving vs Fixed term debt, Fixed vs. Floating Rate debt
        - Understand tradeoff of maturity, interest paid, and monthly payment for fixed term loan, and how this interacts with household liquidity
    - Mortgages
        - Down payment requirements, monthly payments and impact of interest rates on payment,
    - Student debt
        - Public vs private loans, deferment, forgiveness, interest rates, no collateral
    - Auto loans
        - Collateralized but quickly depreciating capital
    - Credit Cards
        - Revolving debt, uncollateralized
        - Good for covering unexpected income volatility
        - Short term credit and APR
        - Know that you should pay your credit card in full every month
        - Know options for getting your first credit card
        - Know differences between credit and debit cards
- Conceptual Framework: What impacts the interest rate you have to pay on your debt?
    - Prevailing economic environment
    - Length of loan
    - Risk!
        - Collateral? Ease of recovering collateral?
        - Individual specific risk of default

            - Trends in default and delinquency https://libertystreeteconomics.newyorkfed.org/2015/02/just-released-regional-household-debt-and-credit/
            - Reflected in credit score… more on that later
- Practical Application: Credit Scores-
    - Understand what a credit score is and why it's important
    - Background on distribution of credit scores: https://www.federalreserve.gov/econres/notes/feds-notes/developments-in-the-credit-score-distribution-over-2020-20210430.html
    - Identify the key determinants of your credit score
    - Understand how to access and read a credit report
    - Understand ways to start improving your credit score now

Costs of Short Term Credit and Fees

- Motivation: Income volatility and the need for short-term borrowing
- The annual percentage rate (APR): a standard measure of interest cost for a loan
    - Extraordinarily high for short-term loans with apparently modest fees
    - Higher than you think for loans that are paid back in installments
- Complex fees:
    - Credit cards
    - Bank overdrafts

Module 5: Insurance

Introduction to Insurance

- Conceptual Framework: Basic economics of insurance
    - The marginal utility framework again
    - Adverse selection
- Practical Application: Types of insurance
    - Components of an insurance contract
      Two challenges to private insurance: known losses and moral hazard
    - Property and casualty (P&C) insurance
    - A common mistake: too low a deductible
    - More on Health and related insurance

Life Insurance, Annuities, and Lifetime Planning

- Life insurance
    - Term vs whole life insurance
    - The danger of lapsing
    - Do people buy the right amount of life insurance?
- Annuities
    - Why don't more people buy them?
- Lifetime planning as a complement to insurance
    - Estate planning
    - Advanced directives for health care

    - Prenuptial agreements

Module 6: Behavioral Finance and Avoiding Costly Mistakes

Behavioral Finance

- Traditional economics vs behavioral economics
    - Two flavors of behavioral economics:
        - Deciding hot or cold
        - Thinking fast or slow
    - Present bias
        - Self-aware vs self-unaware
        - Commitment devices
    - How people think about numbers
        - What makes a number seem large or small?
        - What makes a number feel good or bad?

Overconfidence, Mistakes, and Consumer Protection

- Consequences of overconfidence
    - The winner's curse
    - Experience effects in investing
    - Debt traps
- Escaping a debt trap
    - Managing multiple debts
    - Bankruptcy
        - Types of bankruptcy, and ramifications
        - Trends in bankruptcy rates
        - Bankruptcy as insurance
    - Prioritization rules for paying down debt
    - Summing it up: financial ignorance and mistakes
- Rationale for consumer financial protection
    - Cost-benefit analysis for consumer financial protection: a stylized model
    - The CFPB: successes and controversy