



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

**PPHA 36101**  
**“Financial Investments for Public Policy”**  
**Autumn 2021**

**Professor: Carolin Pflueger**

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**COURSE GOALS**

Financial markets play an important role for public policy. Central banks, Federal and local governments, and public and private pension funds are faced with decisions about risk and return in financial markets. Being able to use financial data to inform these decisions is crucial. The tools of investments analysis can be used to understand the effects of these financial decisions for individuals saving for retirement, governments, and pension funds.

This class covers the core tools of financial investments and applies them in the context of public policy. Over the course of this class you will familiarize yourself with the main concepts of investments theory for stocks, bonds, and investment portfolios and apply them using real data in Excel. A particular focus will be on empirical applications. Applications and assignments in this course will be structured around Excel with real-world data – the basic tool in the financial industry and many organizations to analyze data. Theory and data analysis will be supplemented with speaker events from the intersection of investing and public policy, and weekly market updates.

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**CERTIFICATE IN FINANCE AND PUBLIC POLICY/CERTIFICATE IN MUNICIPAL FINANCE**

This class can be taken to count towards the certificate in finance and public policy and the certificate in municipal finance. For more information, see here:

<https://harris.uchicago.edu/academics/design-your-path/certificates/certificate-finance-policy>

<https://harris.uchicago.edu/academics/design-your-path/certificates/certificate-municipal-finance>

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**ASSESSMENT SUMMARY**

There will be a midterm and a final exam, with a combined weight of 60%. If, for any reason, you must miss the midterm exam all the weight will be shifted towards the final. In-class participation will be graded and make up 20% of your grade. Assignments will make up 20%. The midterm and final exams will be based on the assignments, so they are the best practice questions.



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

The class will be held in a hybrid format this year. If you need to attend the class remotely, please get in touch with Kate Biddle at [kbiddle@uchicago.edu](mailto:kbiddle@uchicago.edu). There will be in-class quizzes as well as quizzes prior to class, both of which will enter into your class participation grade. You can also gain participation grades by asking and answering questions on piazza (more on that below). If you cannot participate in the live classes on a regular basis (e.g. time zones, family obligations, etc.), please make sure to let me know **at the beginning of the term** so I can tell you how your participation grade will be computed.

The midterm will be held in class on Oct 27, 2021. The final exam will be scheduled by the registrar in the exam period between December 6-10, 2021.

There will be assignments approximately every two weeks. Most will be group assignments, where I will ask you to in groups of two or three, similar to business school assignments. Other assignments will be individual assignments.

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## COURSE INFORMATION

**Instructor:** Prof. Carolin Pflueger

**Office hours:** Mo 8:30-9am, We 6-7pm

**Course website:** <http://canvas.uchicago.edu>

**Class meeting times:** MW 9:10am-10:50am

**Room:** **TBD**

### Teaching Assistants:

Natasia Engeline [engeline@uchicago.edu](mailto:engeline@uchicago.edu)

Doga Akar Bilgin [dbilgin@uchicago.edu](mailto:dbilgin@uchicago.edu)

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**Zoom information for Remote Participants (remember to request permission if you need to attend remotely):**

**TBD**

**Instructor Office Hours will be held remotely via zoom:**

One-on-one office hours are by appointment and will be held on zoom. Office hour times and links are available here:

<https://docs.google.com/spreadsheets/d/1hMOExR9eQWlZYPJ2uvPBQQQ2Wugq5M3BaBRg7h3ssWk/edit#gid=2009727433>

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**TA Office Hours/Sections:**



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

TA sections will provide assistance with Excel, and discuss problem set solutions and practice questions prior to the midterm and final exam. We are aiming to offer TA office hours/sections both **in person and online** (content will be identical no matter which one you choose). We will use a doodle at the beginning of class to determine the best dates and times for TA office hours and sections.

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### **Discussion Board for Q&A:**

This term we will be using Piazza for class discussion. The system is catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. I hope that this will be a more social way of answering questions than just using email (especially since this is an online-only term), and by using it you can even boost your participation grade! If you have any problems or feedback for the developers, email [team@piazza.com](mailto:team@piazza.com).

Find our class signup link at:

**TBD**

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## **COURSE MATERIALS**

### **Hybrid Format**

Classes will generally be in-person and you are required to get in touch with Kate Biddle if you can only participate remotely. Live classes will be recorded on zoom and posted on the course website. Prerecorded videos with quizzes may also be posted on the course website.

Because participation and student input are crucial for your own learning and to be successful in the professional world, I urge you to use the class environment to practice these skills in a safe environment. Active participation through questions, student discussion, and keeping your cameras on will be factored into your class participation grade. I will also use small in-class quizzes to make sure everyone is on the same page and check your understanding. At the same time, I understand that many of us are in different time zones and have family obligations. If you have such constraints, please let me know as soon as possible at the beginning of class so I can accommodate.

### **Class Slides**

Lecture notes will be posted on the course website before each lecture. You are expected to read through the notes before the lectures. After the lectures, it is your responsibility to review the course material thoroughly. I will occasionally update the notes to refine the arguments based on the discussion in class, clarify questions from class, give additional references, and provide up-to-date examples or data.

### **Spreadsheets**

Excel spreadsheets will be available on the course website. These spreadsheets implement models covered in class using data from financial markets. Understanding the spreadsheet exercises is critical, since assignments and exams will be closely based on those. Students should make themselves familiar with the principles underlying the calculations and will be expected to adapt and extend them in a variety of contexts. This class requires you to be fluent in Excel, including



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

regression analysis and lookup tables.

### **Required Textbook**

Investments, by Zvi Bodie, Alex Kane, and Alan Marcus, McGraw-Hill Irwin, 11th edition. (The 10th edition works also but page references do not match.) Available for about \$70 on amazon.com. You will also be required to purchase one Harvard Business School Case “Asset Allocation at the Cook County Pension Fund” available here for about \$9: <https://store.hbr.org/product/asset-allocation-at-the-cook-county-pension-fund/218030>

This is the standard textbook for investments courses at business schools, so after taking this class you will have the tools that are considered standard for an introductory class in investments. I will cover the main topics in this book and I expect you to read the chapters listed under the course topics. However, the focus of this class is on real-world applications to prepare you for working in either public policy or finance. For this reason, I will not cover all the material described in the book chapters. Instead, I will usually cover the core portion of the book chapters listed under each class topic and replace the applications with in-class data analysis. You are expected to use the class slides to identify which material within each chapter is part of the course material.

Applications will be supported with real-world financial reports from governments, investment funds, rating agencies etc. These additional readings will generally be more relevant to real-world applications and, as a result, significantly more challenging than the textbook.

### **Weekly capital markets updates**

Every Wednesday, we will discuss recent market developments and connect them to the material covered in class. The discussion will be based on the weekly market updates available at <https://am.jpmorgan.com/us/en/asset-management/gim/adv/insights/weekly-market-recap> (click on “View the Recap”) You are expected to read these weekly updates for the next class. I also expect you to make it a habit to read more broadly from publications, such as The Economist, Financial Times, Wall-Street Journal, New York Times, Bloomberg etc. and use your knowledge from these publications to be able to elaborate on the weekly market update.

I will call on students at the beginning of Wednesday class to give a market update. You should be able to answer the following questions:

1. What happened?
2. Why does it matter?
3. What concepts or theories that we have learned might help us think about these issues?

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## **ASSESSMENT**

### **Common policy for all assignments and exams**

For team assignments, you may form groups of 2 or 3 (NOT 4 or more) students. Any team with four or more students will receive a grade of zero. You may work in different groups for each group assignment. Note that 2 marks will be awarded if you provide your group composition to the course TA 7 days before the any group assignment deadline. It is each student’s responsibility to ensure that his/her name is listed in the team composition e-mail and on the team’s submitted assignment. If your name is not listed, you will receive a grade of zero. We only accept regrade requests within



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

2 weeks of returning an assignment. Regrade requests can only be made for the entire assignment and not for individual questions.

My standard policy is that students will have to submit all assignments. I will discard the worst assignment grade, so if a student only misses one assignment this will have no effect on the final grade. However, the material in all assignments is examinable, so I highly recommend that you hand in all assignments.

For questions about specific assignments, please contact the TA listed on the assignment.

### **Class participation**

Regular class attendance and class participation will be factored into your class participation grade. Remember that listening to others and engaging with their comments is also important for contributing to any discussion, not just in class but also in any workplace. Quality contributions will be valued more highly.

Contributions to market updates can be factored into your class participation grade. You are expected to have read the weekly market updates and to contribute to class discussion about current events. I may ask individual students to summarize the current market update. High quality answers to the questions listed under "Weekly capital markets updates" will be valued more highly than a simple summary of events.

I may use unannounced in-class quizzes, which will factor into class participation. These quizzes will be designed to give me a better view of how the class is doing and to stimulate discussion.

If a student has to miss class, it is the student's responsibility to catch up on any missed materials from classmates' notes. As a matter of fairness to all other students, I will not provide extra office hours to make up missed materials or extra materials. I value student attendance and class participation. I track class participation directly and through in-class quizzes. If a student misses an in-class quiz, this will be recorded as zero. I will generally discard the worst in-class quiz grade, so if a student only misses one quiz this will have no effect on the grade.

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## **OTHER INFORMATION**

### **Academic integrity**

Students are allowed to discuss assignments, but the write up that you hand in must be distinctly your own. For team assignments, homework submissions that look identical to another team's, either fully or in parts, will not be accepted. Students cannot copy material from a previous course taught by myself, from other professors, or from solutions manuals for turning in assignments. These can only be used as study aids.

I accept re-grade requests only within two weeks of returning the assignment. Re-grade requests can only be made for the entire exam/assignment and not for individual questions. As a result, your grade can go either up or down following a re-grade request.

Because we are still in a hybrid learning format, the midterm and final exam will be open-book. Because they will be open book and to discourage plagiarism, you should expect the midterm



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

and final to be longer than usual exams, and you should not necessarily expect to finish all questions.

You are reminded that plagiarism will be taken seriously. Please review the University of Chicago's statement on academic integrity, which reads:

"We believe it is contrary to justice, to academic integrity, and to the spirit of intellectual inquiry to submit the statements or ideas or work of others as one's own. To do so is plagiarism or cheating, offenses punishable under the University's disciplinary system. Because these offenses undercut the distinctive moral and intellectual character of the University, we take them very seriously; punishments for committing them may range up to permanent expulsion from the University of Chicago."

The full statement on academic integrity is available here:

<http://collegecatalog.uchicago.edu/thecollege/academicintegrity/>

### **Accommodations**

If you need any accommodations, such as for missing class or due to medical conditions, please contact student affairs. Please understand that in fairness to all other students, I cannot provide accommodations unless you have obtained permission well in advance from student affairs. The standard policy in this class is that students must submit all assignments and attend all classes and exams unless they have a clear accommodation from student affairs. To encourage student attendance and class participation, I will track class participation directly and through in-class quizzes. If a student misses an in-class quiz, this will be recorded as zero. I will generally discard the worst in-class quiz grade within the quarter, so if a student only misses one quiz this will have no effect on the grade. It is also students' responsibility to catch up on any missed materials from classmates' notes. As a matter of fairness to all other students, I will not provide extra office hours to make up missed materials, extra materials, or allow audio, photo, or video recordings.

### **General expectations**

Consider the classroom an opportunity to prepare for your professional career. As future professionals, I expect you to be on time and prepared for class. I expect you to keep your microphone muted unless you are speaking, and all communications with classmates and instructors should be appropriate. If you send e-mails to the instructors or teaching assistants, please be polite, to the point, and use correct grammar and punctuation.

### **Practice exercises**

The class assignments, in-class discussion, Excel spread sheets, and readings will provide you with preparation for the midterm and final exam. There will be no additional practice exercises or mock exams.



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**SCHEDULE:**

Schedule is tentative. All or a subset of tools/applications will be covered as time permits.

**Sept 26: Assignment 1 Posted**

**(1) Introduction to Financial Markets (Lectures: Sept 27 & Sept 29)**

Tools: Money, stocks and bonds, trading, liquidity, arbitrage

Applications: Liquidity premium in Treasury Inflation Protected Securities during the financial crisis of 2008-09

Reading: BKM Chapters 1 “The Investment Environment”, 2 “Asset Classes and Financial Instruments”, 3 “How Securities Are Traded”

Pflueger, Carolin and Luis Viceira (2016) “Return Predictability in the Treasury Market: Real Rates, Inflation, and Liquidity”, Chapter 10 in Pietro Veronesi (ed.) Handbook of Fixed-Income Securities, Wiley, NJ.

<https://uploads.documents.cimpress.io/v1/uploads/c82adffd-c879-45b9-9d0f-a550d71d18e7~110/original?tenant=vbu-digital>

**(2) Yields and Returns (Lectures: Oct 4)**

Tools: Computing returns for stocks and bonds, holding period returns, mean and standard deviation of returns, returns over different investment horizons, geometric (time-weighted) rate of return, bond yields, bond duration

Applications: (i) stock and bond market indices (ii) average performance of asset classes over time; (ii) typical risk and return of bonds, stocks, developed and emerging markets (iii) Value-at-risk

Reading: BKM Chapter 5 “Risk, Return, and the Historical Record”, BKM Chapters 14, 15, 16 on fixed income

Goldman Sachs annual report on Value-at-Risk (pages 89-90):

<https://www.goldmansachs.com/investor-relations/financials/current/annual-reports/2019-annual-report/annual-report-2019.pdf>

**Oct 10: Assignment 1 Due & Assignment 2 Posted**

**(3) Return Dynamics (Lectures: Oct 6 & Oct 11)**

Tools: Efficient markets hypothesis, predicting returns using past returns, return autocorrelations, implications of autocorrelations for long-term portfolio choice, dividend discount model, predicting returns using dividend yield

Applications: (i) Computing autocorrelations (ii) Predicting returns using the dividend yield (iii) Target date funds for individual investors

Reading: BKM Chapters 6 “Capital Allocation to Risky Assets”, 11 “The Efficient Market Hypothesis”, 18 “Equity Valuation Models”



Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

Vanguard's approach to target date funds, available here:

<https://www.vanguard.com/pdf/s167.pdf>

**(4) Optimal Portfolio Choice (Lectures: Oct 13 & Oct 18)**

Tools: Diversification and portfolio risk, portfolios of two risky assets, Markowitz portfolio optimization model, Monte Carlo simulations

Applications: (i) Portfolio allocation at the Norwegian Sovereign Wealth Fund (ii) Pension fund simulations

Reading: BKM Chapters 6 "Capital Allocation to Risky Assets" and 7 "Optimal Risky Portfolios"

Norges Bank Investment Management Discussion Note "Risk and Return of Different Asset Allocations" Available at:

[https://www.nbim.no/contentassets/bce455b7ad024b798195059e5de0fcb4/discussion\\_note\\_2-16\\_risk\\_and\\_return\\_of\\_different\\_asset\\_allocations.pdf](https://www.nbim.no/contentassets/bce455b7ad024b798195059e5de0fcb4/discussion_note_2-16_risk_and_return_of_different_asset_allocations.pdf)

Harvard Business School Case "Asset Allocation at the Cook County Pension Fund"

<https://www.hbs.edu/faculty/Pages/item.aspx?num=53176>

Cook County investment performance available here:

<https://www.cookcountypension.com/investments/investment-performance/>

**(5) The Capital Asset Pricing Model (Lectures: Oct 20)**

Tools: CAPM, the market portfolio, expected returns on individual securities, cost-of-capital

Applications: (i) Assessing performance of mutual funds

Reading: BKM Chapter 9 "The Capital Asset Pricing Model"

**Oct 24: Assignment 2 Due & Assignment 3 Posted**

**Oct 27: In-Class Midterm**

**Nov 1: Class Speaker Fredrik Willumsen  
Global Head of Allocation Research, Norges Bank Investment Management**

**Nov 7: Assignment 3 Due**

**(6) Factor Models (Lectures: Nov 3 & Nov 8)**

Tools: Factor analysis, size and value, alpha, information ratio

Applications: (i) Assessing performance of mutual funds

Reading: BKM Chapter 10 "Arbitrage Pricing Theory and Multifactor Models of Risk and





Syllabus: PPHA 36101-2021

Financial Investments for Public Policy

Return”

**Nov 10: Class Speaker**  
**Nickol Hackett, CIO Joyce Foundation**

**(7) Options (Nov 15 & Nov 17)**

Tools: Put and call options, binomial tree option valuation, Black-Scholes

Applications: (i) Valuing a toll road revenue guarantee in a Public Private Partnership

Reading: BKM Chapter 20 “Options, Futures, and Other Derivatives” and 21 “Option Valuation”

**Nov 20: Assignment 4 Posted**

**Thanksgiving Week (No Classes) – Monday – Friday, November 22 – 26, 2021**

**Nov 28: Assignment 4 Due**

**Nov 29: Panel on Public Finance with Practitioners**

Cynthia Evangelisti, Treasurer, Chicago Park District  
Zayn Saifullah, office of the CFO of the City of Chicago

**Dec 1: Exam Review**