

FIN-607

**Empirical Asset Pricing**

Goyal Amit

Cursus	Sem.	Type
Finance		Obl.

Language of teaching	English
Credits	3
Session	
Exam	Project report
Workload	90h
<b>Hours</b>	<b>28</b>
Lecture	28
<b>Number of positions</b>	

**Frequency**

Every year

**Remark**

If you would like to attend this course, please send an email to: [edfi@epfl.ch](mailto:edfi@epfl.ch) to register

**Summary**

This class is designed to give you an understanding of the basics of empirical asset pricing. This means that we will learn how to test asset pricing models and apply them mostly to stock markets. We will see which theories fare well and which ones do not.

**Content**

This class is designed to give you an understanding of the basics of empirical asset pricing. This means that we will learn how to test asset pricing models and apply them mostly to stock markets. We will see which theories fare well and which ones do not. We will also learn about the cross-sectional patterns in stock returns. Lately, there is enhanced understanding amongst finance scholars of the dangers of data mining and we will review techniques to guard against too many empirical regularities. The flip side of the coin will be when we apply machine learning to discover even more patterns in the data (the class will not deal with techniques of machine learning; only their applications). Towards the end we will move away from stocks to look at the cross-section of bonds and options and explore inter-linkages between these markets. Finally, we will explore the performance of various kinds of funds. Concretely, we will cover the following topics:

1. Asset pricing tests
2. Cross-section of stock returns
3. GMM/SDF based tests, choosing factors
4. Aggregate predictability, test of conditional models
5. Consumption-based models
6. Multiple hypothesis testing
7. Machine learning
8. Stocks and corporate bonds
9. Stocks and options
10. Performance of mutual funds, institutional funds, hedge funds

**Learning Prerequisites****Required courses**

- You should have taken a PhD level class in asset pricing that covers the theory of asset pricing models.
- You should also have taken a course in econometrics at the master level. We will do mostly OLS and sometimes GMM but nothing fancier. Nevertheless, the basics of regressions (all the associated

assumptions, problems, solutions, etc.) should be hopefully second nature to you.

- You should also have some familiarity with programming. We will be working with data and, therefore, you should have the capability of downloading (large amounts) of data and analyze those. You can choose any programming language (SAS, Stata, Python, R, Matlab, etc). In my experience, working with a few languages makes life easier than sticking to just one.

### Teaching methods

Lectures will be organized around relevant papers. All these papers (and more) can be accessed via the Dropbox link [https://www.dropbox.com/sh/992erxliqshfnjj/AABP\\_MuRI\\_65ZNSaTf76walfa?dl=0](https://www.dropbox.com/sh/992erxliqshfnjj/AABP_MuRI_65ZNSaTf76walfa?dl=0).

Obviously, we will not have enough time to cover all (or even 5% of) the ~1,300 papers. I will choose the papers that are the most relevant.

The class notes are available at DropBox (folder details to be provided later). I might make changes to them from time to time. Therefore, please download them only a few days before class.

### Assessment methods

There will be one or two projects counting for 75% total. The remaining 25% will be based on writing a referee report. Details on projects are provided separately.

### Resources

#### Bibliography

The following books can serve as a background reference (although our class will rely mostly on papers):

1. John Y. Campbell, Andrew W. Lo, and Craig MacKinlay, 1997, *The Econometrics of Financial Markets*, Princeton University Press.
2. John Cochrane, 2005, *Asset Pricing*, Princeton University Press.
3. Turan G. Bali, Robert F. Engle, and Scott Murray, 2016, *Empirical Asset Pricing: The Cross Section of Stock Returns*, Wiley.
4. Wayne Ferson, 2019, *Empirical Asset Pricing: Models and Methods*, MIT Press.

Please read (a) chapters 1 through 6 of Bali, Engle, and Murray, and (b) chapters 2 and 4 of Campbell, Lo, and MacKinlay before first class!

#### Ressources en bibliothèque

- [The Econometrics of Financial Markets / Campbell](#)
- [Empirical Asset Pricing: The Cross Section of Stock Returns / Bali](#)
- [Empirical Asset Pricing: Models and Methods / Ferson](#)
- [Asset Pricing / Cochrane](#)