

Syllabus

Ganesh Viswanath-Natraj

IB2350: Finance 1
Warwick Business School

Tuesday 1st October, 2024

- Ganesh Viswanath-Natraj
- Email: ganesh.viswanath-natraj@wbs.ac.uk
- Office Hours (Week 2-Week 10): Tuesday 4:30pm-6:30pm, 2.209
- Teaching experience: 6th time teaching IB235, total 10+ years experience teaching.
- Research interests: Foreign exchange and cryptocurrency markets. Some of the questions I investigate:
 - 1 What are the macroeconomic and financial stability implications of using a digital pound?
 - 2 Are cryptocurrency prices efficient? How do we improve the design of stablecoins, a class of cryptocurrencies pegged to the dollar?
 - 3 Decentralised Finance (DeFi) is a blockchain based form of finance that removes the need for intermediation. Can DeFi be a more effective way of organising financial markets?

My research (Non-Examinable)

- Check out my presentations on the macroeconomics of the digital pound, and the future of blockchain technology
- All of my articles can be found on my personal research website.
- Economist article on DeFi applications in Week 1 Live Lecture folder



- 3 hours of learning a week, the 1 + 1 + 1 system of **blended learning**
 - ① 1 hour of live lectures
 - ② 1 hour of pre-recorded material
 - ③ 1 hour of on campus seminars
- Lecture: Tuesday 3pm-4pm, WBS 0.004
- Lectures will go through the theory, seminars will go through exam-like questions.
- To do well, it is expected students continually revise topics and keep up with lectures and pre-recorded material.
- Two important features of pre-recorded material are the discussion of relevant readings from the financial times and a quiz every 2 weeks that will test your understanding of the material.
- In addition, I will use Vevox questions during lecture as a quick recap.

- Seminars: (Starting week 2)
 - ① Monday 12pm-1pm, OC1.03
 - ② Monday 1pm-2pm, OC1.03
 - ③ Monday 4pm-5pm, S0.18
 - ④ Wednesday 9am-10am, R0.03
 - ⑤ Wednesday 12pm-1pm, R0.03
 - ⑥ Thursday 11am-12pm, FAB2.32
 - ⑦ Thursday 12pm-1pm, R1.13
 - ⑧ Thursday 1pm-2pm, S0.13
 - ⑨ Thursday 2pm-3pm, S0.11
- Please attempt seminar questions beforehand, and go to your designated seminar.

Zijie Wang

- Email: zijie.wang.1@warwick.ac.uk
- Office Hours (Week 2-Week 10): 2.008 Monday 5pm-7pm

Jing Ye

- Email: phd18yg@mail.wbs.ac.uk
- Office Hours (Week 3-Week 10): 2.008 Thursday 4pm-6pm

The structure of the course is 90% final exam and 10% participation.

Participation mark (10%):

- Vevox quizzes at end of pre-recorded material.
- Due every 2 weeks, starting **Week 3: 11:59pm Sunday October 20th**
- 5 quizzes with 5 questions each.
- Half of participation grade is for completion. The remaining half is based on how well you do in the quizzes.
- Example 1: completing all quizzes and getting all questions wrong gets you a participation mark of 5/10.
- Example 2: completing all quizzes and getting half the quiz questions right gets you a participation mark of 7.5/10.

Closed Book Final Exam (90%):

- Exam to be scheduled in June 2025
- Mix of numerical questions and essay (True/False) statements.
- The FT readings and quizzes in pre-recorded material should help incentivise students to revise for the exam.
- Past exam solutions and class tests will be provided for revision.
- Students can do very well, with high marks above 90 per cent in the final exam, and approximately a quarter of students obtaining firsts.
- What's the secret of success?
 - ① Periodic revision (eg. through studying for Vevox quizzes)
 - ② Practicing all seminar questions and final exams in **closed book conditions** until it is second nature!

- Introduce you to the workings of the equity, bond and derivatives markets.
- Equip you with the skills and understanding to use quantitative tools for pricing stocks, bonds and derivatives.
- Help you develop a critical understanding of the trade-off between risk and return, and of techniques for exploiting that trade-off to maximum effect.
- Make you aware of key empirical tests of the Efficient Markets Hypothesis, and the implications of those empirical findings.
- Provide you with structured opportunities to practise using the key tools and techniques of Financial Markets theory.
- Prepare you for advanced undergraduate studies in Finance.

- Why did UK Gilt Bonds increase sharply following tax cuts in September 2022?
- We will learn about theories explaining the term structure of interest rates in Topic 5: Bond pricing.
- Reference: FT Reading

Renewed selling in UK bonds ricochets across global markets

UK long-term borrowing costs surge

30-year gilt yield (%)



Source: Refinitiv
© FT

- ① Week 1: Investment under certainty
 - ② Week 2: Risk aversion and expected utility
 - ③ Weeks 3 and 4: Portfolio theory and CAPM
 - ④ Weeks 4 and 5: Capital Asset Pricing Model (CAPM)
- The course begins with the principles of investment under certainty (no risk!).
 - We will then add risk, a fundamental in financial markets which measures the uncertainty in future cash flows.
 - We will cover portfolio theory, such as the tradeoff between risk and return and the benefits of diversification, and the capital asset pricing model, a pricing rule for stocks.

- 5 Week 6: Bond pricing
 - 6 Week 7: Forwards and futures
 - 7 Weeks 8 and 9: Options
 - 8 Week 10: Market efficiency
- In bond pricing, we learn to calculate the no-arbitrage value of bonds based on the principle of discounting future cash flows.
 - We learn about theories of the term structure of interest rates: why are yield curves upward or downward sloping?
 - Forwards and options are derivatives, a set of financial instruments that firms use to hedge risk in financial markets.
 - For example, an oil producer may hedge against adverse declines in oil prices by selling oil in the forward market.

The lecture notes are self-contained, however you may find the following references useful as supplementary material.

Recommended text

- The main recommended text is Corporate Finance by Hiller et al.
- Hiller D, Ross SA, Westerfield RW, Jaffe J Jordan BD (**HRWJJ**) Corporate Finance (3rd European edition, 2016) McGraw-Hill

Supplementary texts

- Other textbooks worth consulting (for some of the topics) are:
Bodie Z, Kane A Marcus AJ (**BKM**) Investments (10th Global edition, 2014) McGraw-Hill
- This is the recommended textbook for IB359 Derivatives and Risk Management Hull JC (**H**) Options, Futures and Other Derivatives (9th edition, 2018)

- Investment under certainty: HRWJJ 4A BKM 1.1-1.6
- Risk aversion and expected utility: BKM 6.1
- Portfolio theory: HRWJJ 10.1-10.7; BKM 6.2-6.6, 7.1-7.4, 8.1-8.2
- CAPM: HRWJJ 10.8-10.10, 12.1-12.3; BKM 9.1-9.4
- Bonds and Interest Rates: HRWJJ 5.1-5.3, 5A; BKM 5.1, 15.1-15.5, 16.1
- Forwards and Futures: HRWJJ 25.1-25.3; BKM 22.1-22.4; H 1.1-1.10, 2.1-2.7, 3.1-3.2, 5.1-5.8
- Options: HRWJJ 22.1-22.8; BKM 20.1-20.2, 21.1-21.4; H 10.1-10.5, 11.1-11.7, 13.1-13.6, 15.5, 15.7-15.9, 15.11-15.12
- Market Efficiency: HRWJJ 13.1-13.8; BKM 11.1-11.5