

**The Art of Forecasting: Crystal Ball, or Magic 8-Ball?**  
*Perspectives from experienced fixed income analysts and PMs*

**Fall 2021 B-Term**

Day/Time: Monday 10:20am –1:35pm

Location: Warren 309

**PROFESSOR**

Ellen Carr

Phone: 310-497-9069

E-mail: [ec2895@columbia.edu](mailto:ec2895@columbia.edu)

Office Hours: TBD (Zoom)

**TEACHING ASSISTANT**

Nicholas DiGeronimo

[NDigeronimo22@gsb.columbia.edu](mailto:NDigeronimo22@gsb.columbia.edu)

Communications from professor and teaching assistant about the course will take place through Canvas.  
Students should regularly check for announcements and messaging notifications.

---

**COURSE DESCRIPTION**

The core curriculum at CBS gives students the building blocks for quantitative modeling, DCF analysis, and securities valuation based on the outputs of these models. But what happens in the real world of investing? This class will build on the core's forecasting toolkit with a more qualitative approach, and prepare you to create realistic, stress-tested, multi-dimensional cash flow forecasts for use by investors across the capital structure, with a focus on the credit side of the balance sheet, along with the assumptions that go into them.

Note: This course has been modified slightly for the fall of 2021. While the course has always had a ~60-40 credit/equity mix, this semester it will focus largely on considerations for credit investors. Although it's oriented towards those of you looking for credit analysis roles, it is also relevant for equity analysis—since virtually every industry and company experiences some form of "distress" in a given market cycle.

Goals:

- Develop a line-by-line approach to calculating and forecasting free cash flow differentiated based on a company's point in its lifecycle/balance sheet trajectory
- Develop and stress-test reasonable assumptions for the most relevant drivers of forecasting outputs
- Identify, anticipate and learn to protect against various biases in forecasting (e.g., anchoring)
- Forecast cash flow in a base, upside, and downside cases (using credit-oriented definitions of these)
- Forecast capital structure evolution (transition from high yield to investment grade and vice versa; transition from healthy to distressed)
- Forecast cash flow for companies in cyclical industries and those undergoing secular and structural changes with meaningful potential impact on cash flow (e.g., wireline telco, brick and mortar retail)

## **REQUIRED COURSE MATERIALS**

### **Recommended Pre-Reading:**

Philip Tetlock/Dan Gardner, *Superforecasting*

Nate Silver, *The Signal and the Noise*

Selected articles on forecasting (in Canvas Files: “Supplemental Reading” folder)

### **In-Class Reading:**

Weekly forecasting exercises/case studies will include assigned reading for each company (financial statements, earnings call transcripts, other readings as needed).

## **REQUIRED PREREQUISITES AND CONNECTION TO THE CORE**

The learning in this course will utilize, build on and extend concepts covered in the following core courses:

<b>Core Course</b>	<b>Connection with Core</b>
Corporate Finance	1. Free cash flow 2. Valuing bonds and stocks 3. Advanced capital structure
Financial Accounting	1. Financial statement analysis (income statement, cash flow statement, balance sheet)

Students will be expected to have mastered these concepts and be able to apply them in the course.

While not prerequisites, Capital Markets and Security Analysis are relevant to this course.

## **ASSIGNMENTS/COURSE MATERIALS**

**Case Assignments** and **Reading Assignments** are posted on Canvas. Please note that you have two pre-class assignments which must be submitted via Canvas by midnight on Sunday, October 24<sup>th</sup>.

## **COURSE ROADMAP/SCHEDULE**

See the final page of the syllabus for a detailed course agenda. Note that this is subject to change based on the schedules/availability of our guest speakers.

## **ATTENDANCE POLICY**

The attendance policy for this course mirrors the Core Course Policy:

- Students who miss more than 33% of classes due to unexcused absences will receive a maximum grade of P. Note: In effect, since this is a B Term course, this means that if you miss more than two classes you will receive a grade of P.
- Students who miss more than 50% of classes will receive an F in the course.  
Note: Weddings are not an excused reason to miss an exam or class.

## TEAM FORMATION

You will form teams of four-five for the team assignments (five cases). Please form your teams before class, by Friday, October 22<sup>nd</sup> at 5pm, for use in the first in-class exercise (forecasting Macys). As always, please attempt to form groups that incorporate a range of different backgrounds and skill sets. If you can't find enough people for your team, please let TA Nick DiGeronimo know and we will consolidate smaller groups. The goal is that each team member will take the lead on one of the five weekly cases.

## METHOD OF EVALUATION

Grades will be calculated as follows:

Assignment	Contribution	Indiv/team	Due date
Pre-Class Assignments	5%	Individual	Sunday 10/24/21 midnight*
5 Forecasting Exercises	70%	Team	Sunday midnight before in-class debrief
5 Postmortems	5%	Team	Sunday midnight one week after forecasting exercise
Class Participation	10%	Individual	Sunday midnight survey deadline weekly
Team Evaluation	10%	Individual	12/10/21 5pm (Friday after class end)

\* Sunday 11/7/21 midnight for late adds

Grades will reflect knowledge and application of the course material and communication skills. This course is intended to be interactive, and class participation is critical.

## ASSIGNMENTS

All of your assignment submissions are subject to the [CBS Honor Code](#). Violations of the CBS Honor Code may lead to failing the assignment, failing the course, suspension, and/or dismissal. In order to avoid ambiguity that may lead to unintentional violations of the Honor Code, assignment description types have been standardized and specified below.

Type	Designation	Grade	Preparation of submission	Discussion of Submission*	Discussion of Concepts**
A	Group Work	Same grade for all group members	By the group	Permitted to discuss (within group)	Permitted
B <sup>1</sup>	Individual w/ Discussions of Concepts and Submission	Individual grade	Individual preparation	Permitted to discuss; sharing solutions or submission files is not allowed	Permitted
B <sup>2</sup>	Individual w/ Discussions of Concepts Only	Individual grade	Individual preparation	Not permitted to share/discuss solutions or submission	Permitted
C	Individual	Individual grade	Individual preparation	Not permitted to share/discuss solutions or submission	Not permitted***

\* The designated group can be either an assigned study group or a self-selected one.

#### Pre-Assignments (5% of your grade—Type C/Individual)

- Review simple cash flow model; input 3-year historical numbers for HCA. (2 points)
- Writing assignment: Peabody Energy (3 points)
  - Review the JPM and Citi sell-side reports from early 2015 and BTU's 2014 10-K, 1Q15 10-Q, year-end/1Q earnings presentations, and year-end/1Q earnings call transcripts.
  - In no more than two pages, summarize the analyst forecasts included in each report, compare them to management's commentary, and answer the following questions:
    - What were the major assumptions behind each analyst's forecast?
    - What was missing from the forecasts?
    - How much guidance did management provide that could be used in forecasting? How did the analysts use this guidance in their forecasts?
    - If you were a PM reading the analyst reports, what questions would you have about the forecasts?
    - Compare the analyst forecasts for 2015 revenue and EBITDA to what ultimately happened (per the BTU 2015 10-K). Knowing that hindsight is 20-20, what mistakes can you identify in the analysts' methodologies and assumptions?

#### Class Participation (15%)—Type C/Individual

In addition to questions you pose in class, participation grades can be enhanced by submission of relevant written material (e.g. news articles, excerpts/quotes from books) with commentary to Canvas. If you submit something, be prepared to discuss it at the next class. A high-quality contribution—verbal or written—provides insight on some issue under study.

Additionally, high-quality, relevant questions for our guest speakers that demonstrate understanding of the material and seek to take that understanding to the next level can enhance your class participation grade.

#### **Weekly Cases/Forecasting Exercises (15% each/75% total—Type A/Group and Type C/Individual)**

- *Part One: Create a forecast (14 points each—team).* Each week you will work in teams to create a forecast for a given company at a given point in time (most of the cases are historical, so that we have the benefit of actual numbers to compare to forecasts). Each case folder includes a 10-K and the last 4 earnings call transcripts, along with other relevant information as available. Your team will create a model and forecast going as far back, and forward, as you believe is relevant to your forecast. These forecasts will differ in emphasis based on the concept we are discussing in class that week. It is a violation of the honor code to look ahead at financial statements to help you with your forecasts.
- *Part Two: Postmortem (1 point each—team).* Submit a postmortem (maximum two Word pages, double-spaced) on the case based on a review of the financial statements in the subsequent three years/the 10K three years AFTER the forecast period. (These will be uploaded to Canvas after the class in which we discuss the case.) Since the final case is contemporary, you'll take a different perspective for this postmortem: fast forward to 2025—what was the biggest surprise/error in your model? (Don't overthink this—have fun with it!)

#### **Team Evaluation (10%)—Type C/Individual**

At the end of the course, you will be asked to survey your fellow team members and rate each member on a scale of 1 to 10. The average of your teammates' ratings of you will comprise your team evaluation grade. (Grades will be scaled for teams with fewer than 5 members.)

#### **INCLUSION, ACCOMMODATIONS, AND SUPPORT FOR STUDENTS**

At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Columbia Business School will make reasonable accommodations for persons with documented disabilities. Students are encouraged to contact the Columbia University's Office of Disability Services for information about registration. Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University's Office of Disability Services online at [www.health.columbia.edu/docs/services/ods/index.html](http://www.health.columbia.edu/docs/services/ods/index.html) or by contacting (212) 854-2388.

Columbia Business School is committed to maintaining a safe environment for students, staff and faculty. Because of this commitment and because of federal and state regulations, we must advise you that if you tell any of your instructors about sexual harassment or gender-based misconduct involving a member of the campus community, your instructor is required to report this information to a Title IX Coordinator. They will treat this information as private, but will need to follow up with you and possibly

look into the matter. Counseling and Psychological Services, the Office of the University Chaplain, and the Ombuds Office for Gender-Based Misconduct are confidential resources available for students, staff and faculty. “Gender-based misconduct” includes sexual assault, stalking, sexual harassment, dating violence, domestic violence, sexual exploitation, and gender-based harassment. For more information, see <http://sexualrespect.columbia.edu/gender-based-misconduct-policy-students>.

At Columbia Business School, we believe that diversity strengthens any community or business model and brings it greater success. Columbia Business School is committed to providing all students with the equal opportunity to thrive in the classroom by providing a learning, living, and working environment free from discrimination, harassment, and bias on the basis of gender, sexual orientation, race, ethnicity, socioeconomic status, or ability.

Students seeking accommodation in the classroom may obtain information on the services offered by Columbia University’s Office of Disability Services online at [www.health.columbia.edu/docs/services/ods/index.html](http://www.health.columbia.edu/docs/services/ods/index.html) or by contacting (212) 854-2388.

## CLASSROOM NORMS AND EXPECTATIONS

- Ensure that you read this syllabus.
- Be on time for every session.
- Expect attendance and participation to be tracked by the TA.
- Fill out the class participation survey after each class.
- Submit assignments on time, and expect cold-calling on your models.
- Use scheduled breaks whenever possible to leave the classroom.
- Treat guest speakers as your guests—they are taking time out of their busy schedules.
- Do not distribute guest lecture material outside the classroom. **Any distribution of guest lecture material will be treated as a violation of the CBS Honor Code.**
- Use Canvas to submit all assignments including articles that you would like to contribute.
- Contact me in the event you have any questions.

## COURSE ROADMAP (SUBJECT TO CHANGE)

Monday 10/25/21	Monday 11/8/21	Monday 11/15/21	Monday 11/22/21	Monday 11/29/21	Monday 12/6/21
<b>Introduction to forecasting/base cases</b>	<b>Capital structure forecasting</b>	<b>Distressed forecasts/downside cases</b>	<b>Inflection point forecasts/secular cases</b>	<b>IG forecasts/credit upside cases</b>	<b>Forecasting miscellany/class wrap-up</b>
10:20-10:50 Course introduction, syllabus overview	10:20-10:35 Discussion tab submissions	10:20-10:35 Discussion tab submissions, HUN model review	10:20-10:50 Discussion tab submissions, LB model review	10:20-10:35 Discussion tab submissions, BBI model review	10:20-10:50 Discussion tab submissions, NFLX model review
10:50-11:50 Introduction to forecasting: 7-step process	10:35-11:35 Review of HUN case learnings/further areas of exploration	10:50-11:50 Guest speaker: Ami Dogra, Capital Four (LB debrief)	10:50-11:50 Guest speaker: Bob Krichoff, Shenkman Capital (Gray debrief)	2:15-3:30 Guest speakers: Frank Byrd, Fielder Capital; Carla Cassella, JP Morgan (BBI debrief—equity and debt perspective)	10:50-11:50 Guest speaker: Karen Hoguet, former CFO of Macys (getting the most out of your time with company mgmt)
11:50-12:05 Break	11:35-11:50 Break	11:50-12:05 Break	11:50-12:05 Break	11:50-12:05 Break	11:50-12:05 Break
12:05-12:35 Intro to forecasting (con't); in-class caselet setup (Macys)	11:50-12:50 Forecasting capital structure evolution (rising stars, falling angels, "steady eddys")	12:05-1:05 Introduction to downside cases (including in-class exercise on covenant violations)	12:05-1:05 Introduction to forecasting in industries undergoing secular changes	12:05-1:05 Introduction to forecasting in cyclical industries (including in-class exercise on NXP forecasting)	12:05-12:35 NFLX/other postmortems
12:35-1:05 Work on Macys caselet in teams	1:05-1:20 Capital structure forecasting--CCL	1:05-1:20 Downside cases--CCL	1:05-1:20 Secular cases--CCL	1:05-1:20 Credit upside cases--CCL	12:35-1:05 Concept check/in-class review/CCL wrapup
1:05-1:20 M caselet debrief	1:05-1:20 Concept check (cash flow forecasting)				1:05-1:20 Course evaluations
1:20-1:35 Homework setup: HUN	1:20-1:35 Homework setup: LB	1:20-1:35 Homework setup: Gray	1:20-1:35 Homework setup: BBI	1:20-1:35 Homework setup: NFLX	1:20-1:35 Course wrapup