

**FIN4115/FIN4713 Applied Portfolio Management: Security Analysis and Valuation**  
**SEM 1, 2021 – Course Syllabus**

**Instructor:** Joseph Cherian

**Room:** 7-58, BIZ 1

**Email:** bizjc@nus.edu.sg

**Tel:** +65 6516-5991(O)

**Section:** Tuesday 3pm – 6pm MRB 2-3 / F2F Capacity: 46+4 / Follows NUS Hybrid Teaching Model

**TA:** Ms. Xu Wanrong <xuwanrong@u.nus.edu>

**Course Description:** This elective in Advanced Applied Portfolio Management will serve as a comprehensive real-world examination of the quantitative, fundamental, behavioral, and model-based approaches utilized for performing security valuation & portfolio management in the financial industry. Major topics covered include Relative Valuation, Multifactor Models, Liquidity and Value Enhancement Strategies. Lectures will involve frequent interaction with practitioners from the industry, hands-on lab projects, and real-life examples. Students are also expected to research, write, and publish either equity investment reports (preferably on Asian companies with limited research analyst coverage) and/or portfolio investment and dynamic asset allocation strategies. These individualized reports and a presentation in the form of a team-based pitch could subsequently be presented by the students to a panel of senior members from the Singapore investment management industry to showcase & ascertain students' investments research and alpha-generating skills. There may also be an opportunity to put your stock selection skills to the test. Students will be divided into sector teams and their analysis & recommendations (appropriately formatted) could be incorporated into the portfolio optimization process. This course is suitable for students interested in a career as a financial analyst (both on the buy-side and sell-side), or as a portfolio manager.

**1. Multifactor Models (MFM) in Portfolio Management**

- Economic rationale for MFM
- Types of models – APT, Relative Valuation, Fundamental
- Diversification of themes
- Testing for efficacy, monotonicity, transitions, downside risk

**2. Behavioral Finance**

- Anchoring, over and under-reaction, overconfidence, loss aversion
- Herding
- Mental accounting
- Confirmation and Hindsight Bias

**3. Liquidity and Asset Prices**

- How we define and measure liquidity
- How liquidity affects valuation of asset prices
- Flight to liquidity versus flight to quality

**4. Hedge funds and Alternative Investments**

- Investment strategies
- Performance and risk management, particularly evaluating downside risk

## 5. Reading Materials:

- Investment Valuation (Revised and Updated), by Aswath Damodaran (AD), 3rd University Ed., Wiley Finance, 2012. This text serves as the primary reference guide. Homework assignments are taken from the end of chapter questions. Coverage: Chps 1, 2, 3, 4, 6, 7, 8, 13
- The course will also have all my overheads & various current articles distributed via LumiNUS.

## Learning Outcomes

- In-depth knowledge of distinct security valuation approaches
- Methodologies & models used in theory and in practice - Relative Valuation, Multifactor Models, and Value Enhancement Strategies, Behavioral Finance.
- How liquidity affects valuation
- Ability to value various assets and stochastic cash flows related to the firm (decision-making under conditions of uncertainty)
- Hands-on computational finance, risk & portfolio management, and trading abilities

## Students are expected to:

1. Research, write, and publish investment reports using both quantitative and fundamental techniques
2. Perform live & backtested portfolio investment strategies to develop asset allocation, equity research and stock-picking skills using financial applications such as Refinitiv EIKON and Barra (TBC)
3. Perform portfolio optimization and risk management routines and analysis
4. Explore the latest thinking in investment management systems and processes

**CAMRI Lab:** Located at Level 3 of BIZ 1 (MRB), the NUS Investment Management & Trading Lab enhances students' portfolio research & management experience and activity. The Lab has 41 student workstations + 1 Instructor workstation, Refinitiv EIKON feeds, live financial data tickers, investment and risk management software modules, and various other trading and portfolio management software applications. The aim is to enable NUS Business School students to have first-hand experience and training with the best tools available to the professional investment community, and as a result, best prepare them for the investments, financial, and wealth management job markets. Financial Software & Datasets available in the CAMRI Lab include: FactSet, EIKON, Datastream and Barra installed on all the 32 PCs (TBC). Due to the current pandemic, hybrid teaching environment and limited access to the Lab, we are working with the various software providers to make as many of the logins and IDs available online and remotely for students. For the weblinks and downloadable training materials for these software, please visit LumiNUS for this module. We will update materials as they come in from the providers.

**NUS Recess Week is from Sat, 18 Sep 2021 - Sun, 26 Sep 2021**

**The Major Quiz is in class (or online under VERY special circumstances). There is no Final Exam in this class.**

**Grading:**

<u>Quantity</u>	<u>Type</u>	<u>Points</u>
1	Major Quiz (in class around October)	30
1	Homework Assignment #1	20
1	Homework Assignment #2	20
1	Team Presentation or Individual Assignment	10
1	Class Participation***	20
	TOTAL	100

\*\*\*Class Participation can include UP TO FOUR (4) POP QUIZZES WORTH 5 POINTS EACH (4 X 5 points = 20 points)!

**GUEST SPEAKERS:** We will have numerous guest speakers from the portfolio management, trading, asset allocation, external manager selection, back office operations and private equity industry sharing with us what their average day is like. This is a VERY important part of our experiential learning program in this class. All materials - be it fundamental, quantitative, equities, credits, global macro, asset allocation, big data analytics & AI, risk management, or sales & marketing - covered by the Guest Speakers can be fodder for homework assignments and/or the Major Quiz. So please make every effort to attend all classes, especially those given by our Guest Lecturers. You are also welcome to do your own “due diligence” on the Speaker, his/her firm, strategies, etc., before the class.

The following renowned practitioners usually speak at our class during the semester (SEM 1), some (where indicated and pending pandemic clause) travel specially from Tokyo, Hong Kong and NY to speak to us:

1. MR. VIKAS GATTANI (FOUNDER & CEO, PROGRESS CAPITAL, FORMER HEAD OF PROP TRADING – ASIA, JP MORGAN). INCLUDES HOMEWORK ASSIGNMENT TO BE COMPLETED IN TEAMS
2. DR. PENG CHEN (FORMER CEO – ASIA EX JAPAN, DIMENSIONAL FUND ADVISORS)
3. MR. SAMUEL RHEE (CEO, ENDOWUS & FORMER CEO – ASIA, MORGAN STANLEY INVESTMENT MANAGMENT)
4. MR. ALVIN CHUA (SR MD & HEAD, GLOBAL FIXED INCOME SALES & TRADING, BANK OF CHINA INTERNATIONAL (BOCI), HONG KONG)
5. MR. ARMIN CHOKSEY (PARTNER AND HEAD OF ASSET MANAGEMENT, PWC)
6. MR. CHRIS COWARD (FOUNDER & HEAD, POINT 72 LATITUDE, NEW YORK)
7. DR. OWI RUIVIVAR (SVP - GIC, FORMER MD & HEAD, EMERGING MARKETS FIXED INCOME - GOLDMAN SACHS ASSET MANAGEMENT)
8. MR. TOMOYA MASANAO (HEAD OF JAPAN AND ASIA PORTFOLIO MANAGEMENT, PIMCO, TOKYO)
9. MR. VIKAS GATTANI (REPRISE - HOMEWORK REVIEW PLUS TRADING & EXECUTION LECTURE)
10. MR DOMINIC LIM (COO/CAO/CRO, NUS ENDOWMENT OFFICE)
11. DR. PRAKASH KANNAN (CHIEF ECONOMIST & HEAD OF TOTAL PORTFOLIO MANAGEMENT, GIC)

**NOTE:** I strongly recommend you register for and take the [CFA \(Levels I, II and III\)](#) and [CAIA \(Levels I and II\)](#) exams if you are seriously interested in a career in the asset management industry.

## APPENDIX A: Readings in Times of Pandemic

### 1. 2 March 2021

**“Sustainability of pension finance and pension investment design”**

**养老金财务的可持续性与养老金投资设计 | 挑战与共识·养老金改革系列之三** Yicai

Yicai, 2 March 2021 (Also appeared in [SINA Finance](#) and [Sohu](#))

URL: <https://www.yicai.com/news/100964624.html>

By Emma Yan and Joseph Cherian

The financial sustainability of pensions is what most policy makers in China are most concerned about. However, the pensions gap and the financial unsustainability of pensions is a common problem around the world. Pension system reform is a multi-dimensional, complex, and challenging area, and involves decision-making that weighs long-term versus short-term issues.

### 2. 4 February 2021

**Channel News Asia’s (CNA) “Heart of the Matter” Podcast**

**GameStop’s rollercoaster: What really went down and could it happen here?**

URL: <https://www.channelnewsasia.com/news/podcasts>

Panelist: Joseph Cherian

January 2021 will go down as one of the most bizarre months in Wall Street's 200-year history where an old-fashioned bricks and mortar video-game company found itself in the middle of a David versus Goliath trading frenzy that drove its price up from around \$17 in early January to a high of \$483 this year! Hear the experts dissect what went on and what needs to be done.

### 3. 4 February 2021

**What constitutes market manipulation?**

Asia Asset Management, 4 February 2021 (online)

URL: <https://www.asiaasset.com/post/24272-market-manipulation-0203>

By Joseph Cherian

Essay defines different forms of market manipulation, the recent online trading frenzy involving retail investors, and how regulations are designed to ensure that financial markets operate in a fair and orderly manner.

### 4. 27 January 2021

**In Bonds We (Still) Trust: Part 2**

Asia Asset Management, February 2021, Vol. 26, No. 2

URL: <https://www.asiaasset.com/post/24244>

By Joseph Cherian and Emma Yan

Commentary explains why convertible bonds may be a conservative way to participate in equity upside given volatile markets.

### 5. 1 December 2020

**Principles-Based MPF: Taking Stock**

Asia Asset Management, December 2020 - January 2021, Vol. 25/26, No. 12/1

URL: <https://www.asiaasset.com/post/24081> / <https://www.asiaasset.com/p/37150> (2020 MPF Special e-book)

By Joseph Cherian

Given the Hong Kong government-mandated pension fund, the Mandatory Provident Fund (MPF), is celebrating its 20th anniversary, Prof Cherian writes that it is prudent to take stock of the universal principles of a good retirement savings scheme. The essay also makes some room-for-improvement comparisons with Singapore's CPF.

## 6. 28 October 2020

### **AAM Webinar Panel 2: Preparing for the Road Ahead: Making the Most of Multi-Asset Strategies**

Asia Asset Management, 28 October 2020

URL: <https://www.asiaasset.com/posts/13485-video-exclusive#gallery-1>  
(<https://www.youtube.com/v/https://vimeo.com/475345058>)

Panelists: Joseph Cherian, Ms. Tianyin Cheng, Senior Director, Strategy and Volatility Indices, S&P Dow Jones Indices, Dr Man Juttijudata, Chief Investment Strategy Officer, Government Pension Fund, Thailand  
Moderator: Tan Lee Hock (Founder & Publisher – Asia Asset Management)

Panelists shared their views on market developments and trends going forward, especially on the role of multi-asset strategies in retirement savings portfolios.

## 7. 9 October 2020

Research paper on hedge funds featured in Institutional Investor as:

### **“Why It’s ‘Too Early’ to Give Up on Replicating Hedge Funds”**

Institutional Investor, 9 October 2020

URL: [https://www.institutionalinvestor.com/article/b1nqyqyrj0r02m/Why-It-s-Too-Early-to-Give-Up-on-Replicating-Hedge-Funds?fireglass\\_rsn=true](https://www.institutionalinvestor.com/article/b1nqyqyrj0r02m/Why-It-s-Too-Early-to-Give-Up-on-Replicating-Hedge-Funds?fireglass_rsn=true)  
<https://www.institutionalinvestor.com/Portfolio>

Liquid alternatives have so far underperformed hedge funds. Can investors get hedge-fund-like returns in liquid replication strategies? So far, the real-life results have been mixed, but that might be changing. A trio of academic researchers at the National University of Singapore say it is too soon to give up on hedge fund replication. They found that identifiable systematic market risk exposures, including stock market beta and investment factors like spreads, value, and momentum, can explain up to 81 percent of North American and Asian hedge fund returns.

The associated research paper is available at SSRN: *“Replicas: Have Hedge Funds Re-Resurrected as Traditional Beta?”* (Joseph Cherian, Christine Kon and Li Ziyun, October 2020)

URL: <http://ssrn.com/abstract=3704649>

## 8. 1 October 2020

### **In Bonds We (Still) Trust**

Asia Asset Management, 1 October 2020, Vol. 25, No. 10

URL: <https://www.asiaasset.com/post/23873>

By Joseph Cherian and Emma Yan

The authors comment on not writing-off bonds just because yields are in the low and lower territory. This is due to bonds having a multi-functional role in capital markets: in the provision of liquidity,

preservation of capital, and, indeed, in the supply of income, at least in the case of higher-yielding corporate and convertible bonds.

## **9. 10 July 2020**

### **AAM Webinar Panel 2: On Asset Management Trends in Asia**

Asia Asset Management, 10 July 2020 (online)

URL: <https://www.asiaasset.com/posts/13485-video-exclusive>

Panelists: Joseph Cherian, Stewart Aldcroft (Chairman – CitiTrust Ltd), Matthew De Alwis (CEO – Kenanga Investors)

Moderator: Tan Lee Hock (Founder & Publisher – Asia Asset Management)

COVID-19 is the Black Swan of 2020. Everyone has been affected, lives may not return to the state of normalcy as we know it. Specific to the investment and asset management industry, there are many issues facing the sector and these were already present well before the pandemic struck. In this webinar, panelists addressed these areas, including industry consolidation, M&A and fee compression, climate change and ESG's impact on investing, and the move to digital asset management.

## **1 July 2020**

### **Terms of endurance: Retirement solutions should harness investment science and technology to shockproof plans**

Asia Asset Management, 1 July 2020, Vol. 25, No. 7

URL: <https://www.asiaasset.com/post/23545>

By Joseph Cherian and Ong Shien Jin

In this commentary, the authors propose to futureproof and shockproof retirement solutions by drawing on investment science, including stochastic dynamic programming, artificial intelligence and big data analytics to create a target income-focused private retirement plan that is personalized and customised over an investor's lifecycle. (The article also appeared in AAM's online edition.)

## **11 May 2020**

### **The State as Insurer of Last Resort**

The Edge Singapore

URL: <https://www.theedgesingapore.com/views/commentary/state-insurer-last-resort>

By Joseph Cherian and Bernard Yeung

In this commentary (an abridged version of the **ABFER Pandemic Commentaries** article of the same title from 14 April 2020), Profs Cherian and Yeung argue for the role of the state when market incompleteness sets in during times of pandemic.

## **6 May 2020**

### **Ring-fencing pensions**

Asia Asset Management, May 2020, Vol. 25, No. 5

URL: <https://www.asiaasset.com/post/23349>

By Joseph Cherian and Emma Yan

In this commentary, Joe Cherian and Emma Yan of Endowus argue, both analytically and from a policy standpoint, that there are alternatives to digging into retirement savings to see us through the pandemic.

**5 May 2020**

**Webinar with the World Bank Group**

**“Maintaining Finance for Firms Impacted by COVID-19: Perspectives for East Asia”**

Speaker: Joseph Cherian

Video: <https://www.worldbank.org/en/news/video/2020/05/04/maintaining-finance-for-firms-impacted-by-covid-19-perspectives-for-east-asia>

There have been efforts to help small-and-medium enterprises in COVID-19 times, such as stimulus packages and a lowering of SMEs’ bank borrowing rates. As some SMEs may still face trouble securing bank loans, an idea to consider is an ownership structure where the state provides equity financing, along with the low-interest loans, collecting ‘dividends’ in the form of higher corporate taxes for a certain period, and giving the business the right to buy back the equity at a suitable price in future.

**14 April 2020**

**Financial tradeoffs matter during pandemics**

Asia Asset Management, April 2020, Vol. 25, No. 4 (Online)

URL: <https://www.asiaasset.com/post/23280-financial-tradeoffs-0409>

By Joseph Cherian

A commentary about how healthcare actions taken by governments to stem the pandemic virus’ spread has huge financial economic costs. This essay discusses how a carefully optimized, calibrated and targeted economic stimulus scheme would be more beneficial for both individuals and the economy.

**14 April 2020**

**The case for state-owned pseudo-equity: saving Singapore’s private enterprises**

URL: <https://www.businesstimes.com.sg/sme/the-case-for-state-owned-pseudo-equity-saving-singapore-smes>

The Business Times

By Joseph Cherian and Marti Subrahmanyam

The authors opine that if the Singapore government takes on a pseudo-equity role in the resuscitation of formerly profitable local SMEs, which are now struggling to survive due to Covid-19, the additional funds would not only tide them through this difficult pandemic period but could convince SMEs to upgrade their capabilities and even internationalise their operations.

**14 April 2020**

**The State as Insurer of Last Resort**

By Joseph Cherian and Bernard Yeung (14 April 2020, [ABFER Pandemic Commentaries](#))

**2 April 2020**

**Three ABFER “Conversations on the 2020 Pandemic: The View from Asia” (Moderated by Joseph Cherian)**

An NUS Business School & ABFER collaboration

SESSION 1: ECONOMIC OUTLOOK

SESSION 2: POLICY RESPONSE

SESSION 3: HOUSEHOLD FINANCE AND FINANCIAL MARKETS

URL: <http://abfer.org/events/abfer-events/184>

<https://news.nus.edu.sg/research/covid-19-outlook-economy>

<https://news.nus.edu.sg/research/covid-19-analysing-governments-economic-policy-responses>

1 April 2020

**"Are hedge funds just traditional beta?"**

**URL: <https://www.asiaasset.com/post/23251>**

Asia Asset Management, April 2020, Vol. 25, No. 4

By Joseph Cherian, Christine Kon and Li Ziyun

This research-based commentary is an analysis of North American and Asian hedge fund exposures to systemic risk factors. It finds that while some hedge fund strategies are truly market neutral, others may fall short of their claims. In addition, exposures to several of the risk factors have changed significantly with time, particularly when compared between pre-Global Financial Crisis (GFC) and post-GFC. This article presents early findings from a comprehensive academic study on risk exposures of Asian and North American hedge fund strategies.

**Older materials:**

- "Worry-free Inflation-Indexing for Sovereigns: How Governments Can Effectively Deliver Inflation-Indexed Returns to Their Citizens and Retirees," (Z. Bodie, J. Cherian and W.K. Chua), Life-cycle Investing: Financial Education and Consumer Protection (CFA Institute), The Research Foundation of Chartered Financial Analysts (CFA) Institute Publications Series, 2012, Z. Bodie, L.B. Siegel and L. Stanton (Editors)
- "A Tail of Two Cities: On the Downside Risk and Loss Profile of Asian and North American Hedge Funds," 2014, (J. Cherian, C. Kon and W. Weng), CAMRI Working Paper, NUS Business School (SSRN Abstract ID 2520354; <http://ssrn.com/abstract=2520354>), Forthcoming, The Journal of Alternative Investments, 2016.
- "Liquidity and Portfolio Management," (J. Cherian, S. Mahanti and M. Subrahmanyam), March 2012, CAMRI Working Paper, NUS Business School

**APPENDIX B – ACADEMIC HONESTY & PLAGIARISM: A WORD FROM YOUR SPONSOR**

Academic integrity and honesty are essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is 'the practice of taking someone else's work or ideas and passing them off as one's own' (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. **In case of any doubts, you should consult your instructor.**

Additional guidance is available at:

<http://www.nus.edu.sg/registrar/adminpolicy/acceptance.html#NUSCodeofStudentConduct>

Online Module on Plagiarism:

<http://emodule.nus.edu.sg/ac/>