

Andreas D. Christopoulos, Ph.D.

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Full-Time Professional Academic Appointments

YESHIVA UNIVERSITY, SY SYMS SCHOOL OF BUSINESS (NEW YORK, NY)	2018-PRESENT
Assistant Professor of Finance & Real Estate (Tenure Track); Vice Chair – Finance; Academic Director - Real Estate	
➤ <i>In addition to my roles above, university service and service to the profession, I am also the Founding Director of the Mitzner MSRE program and designed that program as well as the MSF program for STEM.</i>	
RICE UNIVERSITY, JONES GRADUATE SCHOOL OF BUSINESS (HOUSTON, TX)	2017-2018
Assistant Professor of Finance (1-Year Visiting Appointment)	
UNIVERSITY OF TEXAS AT AUSTIN, MCCOMBS SCHOOL OF BUSINESS (AUSTIN, TX)	2015-2017
Assistant Professor of Finance (2-Year Visiting Appointment)	
UNIVERSITY OF SCRANTON, KANIA SCHOOL OF MANAGEMENT (SCRANTON, PA)	2014-2015
Assistant Professor of Finance (1-Year Visiting Appointment)	

Full-Time Professional Non-Academic Appointments

NOMURA (NEW YORK, NY)	2007-2008
<i>Director, Head of CMBS Risk Management</i>	
Managed risks of ~\$3B portfolio of CMBS, CMBX, CRE CDOs & CRE Mortgages (credit, market, liquidity risks). Managed team of 3 risk professionals. Risk's representative to Global Credit Committee. Sole authority loans <=\$50mm; joint origination authority loans >\$50mm. Produced highly accurate valuations of Level 3 assets for Global Heads of Risk, CEO, CFO, and co-Heads of CMBS Banking. Designed long/short strategies using CMBX; advised Tokyo and New York Senior Management; Earned profits of ~\$35mm; Prevented ~\$150mm in losses.	
WOTN, LLC (ITHACA, NY)	2001-PRESENT
<i>CEO & Co-Founder</i>	
Co-founded this risk management/ratings financial technology company with Robert Jarrow; Trepp, LLC; and Cornell University to create the 1 st independent simulation-based risk management platform for CMBS. Managed a cross-functional team of 15 research scientists, counsel, partners, and outsourced developers. First mover in providing <i>daily</i> valuation of ~\$1T CRE/CMBS Universe with high-performance computing. Leveraged Trepp trade quality data and technology to determine path dependent values of loans and bonds. Raised \$2.1mm in preferred equity and debt to develop and market product. New R&D product 'RiskTape' live risk decomposition pricing in 15 second intervals, intraday each trading day. Secured Patent of WOTN and Cornell US8788404 B1; configured all IP on Google Cloud for re-launch.	
JP MORGAN CHASE (NEW YORK, NY)	1997-2001
<i>Director, Head of CMBS Research (1999-2001)</i>	
Lead the 1 st CMBS research group for Chase. Managed team of 2 researchers and outsourced technology development. Wrote weekly and monthly research reports on fundamental credit and relative value; track record of correct calls. Helped create 'Tier 1' brand for Chase CMBS; Developed business relationships through research.	
<i>Vice President, CMBS Trading (1998-1999)</i>	
Developed credit, structural and market risk analysis for CMBS products in new issue and secondary market. Profitable B-piece valuations for banking/origination, sales, trading, and risk.	
<i>Associate, CMBS Trading (1997-1998)</i>	
Responsible for hedging multi \$billion conduit loan and securities book; market making and analysis.	
LEHMAN BROTHERS (NEW YORK, NY)	1992-1995
<i>Analyst, Mortgage & ABS Research, Banking and Structuring</i>	

Education

RUTGERS UNIVERSITY, RUTGERS BUSINESS SCHOOL (NEWARK & NEW BRUNSWICK, NJ)	2011-2014
Doctor of Philosophy, Quantitative Finance (with high honors)	
• <u>Dissertation</u> : "Comparisons and extensions of structural and reduced form approaches to the pricing of commercial real estate securities and loans in the financial crisis & the recovery".	
• <u>Committee</u> : R.A. Jarrow (<i>co-Chair</i> , Cornell), D. Jones (<i>co-Chair</i> , Rutgers), S.A. Ravid (Yeshiva, 1 st Rutgers Advisor), A. Ruszczýnski (Rutgers).	
• <u>Distinctions</u> : Rutgers Ph.D. Scholar; Dean's Finance Award (2012); Beta Gamma Sigma, Golden Key, GPA: 3.7/4.0; GRE:1560 (790M/770V).	
CORNELL UNIVERSITY, JOHNSON GRADUATE SCHOOL OF MANAGEMENT (ITHACA, NY)	1995-1997
Master of Business Administration, Finance	
VASSAR COLLEGE (POUGHKEEPSIE, NY)	1984-1989
Bachelor of Arts, Independent Major Philosophy and Literature	

Awards and Notoriety

- Best Paper Award (2024), 2nd Annual Contemporary Issues in Financial Markets and Banking, Nottingham, UK
Christopoulos, A.D., and Barratt, J.G., “15 seconds to alpha: Higher frequency risk pricing for CRE securities.”
- 2nd Place, Yeshiva University Sy Syms Dean's Innovation and Teaching Award (2024) for the course "Real Estate Capital Markets."
- Top 10 SSRN downloads in 18 subjects (as of 12/27/2024) for “15 seconds to alpha: Higher frequency risk pricing for CRE securities.” in: *Real Estate, Fixed Income, Asset Pricing Models, Asset Price Forecasting, Wealth Management, Innovation & Finance, Property, Casualty & Life Insurance, Risk Premiums, Alternative & Distressed Assets, Capital Markets Market Efficiency, and Econometric Modeling: Financial Economics*, among others.

Research

Published (or *Forthcoming)

- Christopoulos, A.D., Barratt, J.G., and Ilut, D.C., “Synthetic Cap Rate Indices (1991-Covid era)”, 2024, *Global Finance Journal*. Vol 60, Article 100961.
- Christopoulos, A.D., and Barratt, J.G., “Liquidity risk and CMBX microstructure”, 2024, *Review of Financial Economics*. Vol 42, Issue 2, 148–185.
- Christopoulos, A.D., and Jarrow, R.A., “CMBS market efficiency: The crisis and the recovery”, 2018, *Journal of Financial Stability*. Vol 36, 159-186.
- Christopoulos, A.D., “The composition of CMBS risk”, 2017, *Journal of Banking and Finance*. Vol 26, 215-239. Q1
- Christopoulos, A.D., “The impact of different default triggers in CMBS risk evaluation”, 2017, *Journal of Investment Management*. Vol 15, No. 2, 1-26.
- Christopoulos, A.D., and Barratt, J.G., “Credit risk findings for commercial real estate loans using the reduced form”, 2016, *Finance Research Letters*. Vol 19, 228-234.
- Christopoulos, A.D., and Jarrow, R.A., et al., “Structured Finance Securities Option Pricing Architecture and Process”, 2014, *United States Patent and Trademark Office*. US8788404 B1.
- Christopoulos, A.D., Jarrow, R.A., and Yildirim, Y., “Commercial Mortgage-Backed Securities (CMBS) and Market Efficiency with Respect to Costly Information”, 2008, *Real Estate Economics*. Vol 36, Issue 3, 441-498.

Working Papers (currently under review) or Forthcoming

“15 seconds to alpha: Higher frequency risk pricing for CRE securities” (with J.G. Barratt, 2024); *Under review*.

Working Papers (SSRN, currently not submitted to journals)

- “National cap rates and the macroeconomy” (with J.G. Barratt and D.C. Ilut, 2022).
- “The Absolute Roll Measure” (2021).

Works in Progress

- “Orienteering the risk terrain: Intraday trading optimization for CRE securities”.
- “View from home: Decline in cinema and mall valuation and trade signal generation.”

Research Conference Participation¹

Presenting “15 seconds to alpha: Higher frequency risk pricing for CRE securities”.

NYU/Bocconi International Risk Conference, Milan, IT*	2024-06
3rd International Symposium for Finance, Banking and Insurance, Paris, FR*	2024-06
17th Behavioral Finance Working Group Annual Conference, London, UK**	2024-06
American Real Estate Society (ARES), 40 th Annual Conference, Orlando, FL**	2024-03
Southwestern Finance Association (SWFA), 51 st Annual Conference, Las Vegas, NV**	2024-02
2 nd Annual Contemporary Issues in Financial Markets and Banking, Nottingham, UK*	2024-01
2 nd Annual International Cardiff Fintech, Cardiff, Wales**	2023-11
30 th Annual Global Finance Conference, Treviso, Italy***	2023-06
1 st Economics of Financial Technology Conference, University of Edinburgh, Edinburgh, Scotland	2022-05
10 th New Zealand Finance Meeting, Auckland University of Technology, Auckland, New Zealand*	2021-12
2021 Derivatives Conference, Auckland Centre for Financial Research, Auckland, New Zealand*	2021-09
Yeshiva University, Sy Syms School of Business, Summer Seminar Series, New York, NY	2021-07
Ecole Hôtelière de Lausanne, Hospitality Finance and Economics Conference, Lausanne, Switzerland*	2021-07

Presenting “Synthetic cap rate indices (1991-Covid era)”.

29 th Annual Global Finance Conference, Braga, Portugal**	2022-06
Yeshiva University, Sy Syms School of Business, Spring Seminar Series, New York, NY	2020-01

¹ *and Discussant; **and Discussant and Chair

USC Architecture, Fall Symposium – Architecture, the City and Democratic Capitalism, Los Angeles, CA	2019-10
Ecole Hôtelière de Lausanne, Hospitality Finance and Economics Conference, Lausanne, Switzerland*	2019-06
American Real Estate and Urban Economics Association National Summer Conference, Washington, DC*	2019-05
Stockholm Business School, 2019 Future of Financial Innovation, Stockholm, Sweden	2019-05
American Real Estate Society, 35 th Annual Conference, Paradise Valley, AZ*	2019-04
Eastern Economic Association, 45 th Annual Conference, New York, NY*	2019-03
Blackrock, Solo Invitational Seminar on CRE and CMBS Risk Research, New York, NY	2018-12
UNC Chapel Hill Kenan-Flagler, Invitational Third Annual Conference on Real Estate, Chapel Hill, NC	2018-10
American Real Estate and Urban Economics Association, Washington, DC*	2018-06
Presenting “CMBS Market Efficiency: The Crisis and the Recovery”.	
Midwest Finance Association, Annual Meeting, San Antonio, TX*	2018-03
Presenting “The composition of CMBS risk”.	
NYU Stern, NYU Salomon, and Standard & Poor’s 6th Annual Spring Symposium: CRE Risk, New York, NY	2017-05
Discussant and Chair, but not presenting own work	
American Real Estate and Urban Economics Association National Conference, Washington, DC*	2024-05
American Real Estate and Urban Economics Association, ASSA/AFA Conference, San Antonio, TX*	2024-01
American Real Estate and Urban Economics Association, ASSA/AFA Conference, Chicago, IL**	2023-01
Baylor University, Lone Star Finance Conference, Waco, TX*	2017-09
American Real Estate and Urban Economics Association, ASSA/AFA Conference, Chicago, IL*	2017-01

Full-Time University Teaching

Yeshiva University, Syms (<u>Student Evals: 4.5 across 18 solo classes, 5=Excellent...1=Poor</u>)	2018-Present
<ul style="list-style-type: none"> • MSRE: RE Finance, RE Capital Markets, RE Fusion, RE Analytics, RE Practicum (Capstone), RE Titans. • BBA: RE Finance, RE Capital Markets, RE Titans, Fixed Income, Corp. Fin. (Capstone), Corp. Fin. (Intro). 	
Rice University, Jones (<u>Student Evals: 2.0 across 4 solo classes, 1=Outstanding...7=Very Poor</u>)	2017-2018
<ul style="list-style-type: none"> • MBA: RE Practicum (Capstone), Corp. Fin. Policy (Adv), Corp. Inv. Policy (Adv), Capital Markets & Crises. 	
UT Austin, McCombs (<u>Student Evals: 4.4 across 5 solo classes, 5=Excellent...1=Poor</u>)	2015-2017
<ul style="list-style-type: none"> • MBA, MSF, and BBA: Risk Management, Case Studies in Capital Markets. 	
University of Scranton, Kania School of Management	2014-2015
<ul style="list-style-type: none"> • BBA: Investments, Portfolio Management, Corp. Fin. (Intro) 	

University Service

Cornell University, College of Architecture, Art, and Planning	
<ul style="list-style-type: none"> • Judge for Senior and Masters Theses. Focus: Tulsa, OK • Judge for Senior and Masters Theses. Focus: Detroit, MI 	2025 2024
Yeshiva University, Sy Syms School of Business	
<ul style="list-style-type: none"> • Vice Chairman: Department of Finance • Founding Academic Director: Yeshiva University Real Estate Programs (MSRE & BBA) • Curriculum Design Committee: Department of Finance • Head of Search Committee for Tenure Track Faculty – Department of Finance • Finalist, Dean’s Innovation and Teaching Award for “Real Estate Capital Markets” • Head of Search Committee for Tenure Track Faculty – Department of Finance • Research Seminar Series • Research Development Committee (all departments) • Bloomberg and Excel Implementation Committee (MSRE & BBA) • Search Committee for Executive Director of Graduate School Operations (all departments) • Dean’s Working Group: Online Graduate Program Development (MSRE & MBA) • Provost’s Working Group: Covid-19 Safety and Educational Planning (all Yeshiva University) 	2021-Present 2018-Present 2018-Present 2025 2023-2024 2021-2024 2021-2022 2021-2022 2021-2022 2020-2021 2020-2021 2020-2021
Rice University, Jones Graduate School of Management	
<ul style="list-style-type: none"> • Program Committee: FMA Applied Finance Conference 	2018-05
University of Texas at Austin, McCombs School of Business	
<ul style="list-style-type: none"> • Reviewer: Texas Finance Festival 	2017-04

Organizations

American Finance Association; American Real Estate and Urban Economics Association; American Real Estate Society; Beta Gamma Sigma Honor Society; Commercial Real Estate Finance Council; Golden Key International Honor Society; Midwest Finance Association; Risk, Banking and Finance Society; Southwestern Finance Association.

Select Abstracts of Research

15 seconds to alpha: Higher frequency risk pricing for CRE securities. 2024, Under review.

This is the first paper to estimate the pricing of default, interest rate, liquidity, and excess liquidity risks at intraday frequencies for securitized commercial real estate securities. In fifteen second intervals over 572 days during the Covid pandemic and the recovery period, we reveal stark patterns in the price formation of risks for CMBX. We exploit links between our risk signals and REITs in twenty-four long-short daily trading strategies. We exploit mispricings disclosed by these risk component signals in the CMBX sector by articulating investment strategies in the more frequently traded REIT sector and thus establish a clear relationship between the two sectors by our work. By fusing the theoretical CMBX risk partition signals with REIT pricing in twenty-four trading strategies over 246 trading days, we achieved significant ICAPM alphas in 88% (21/24) of the strategies and positive cumulative returns ranging from 9.09% to 41.37% in 90% (19/21) of the significant alpha strategies during Year 1 of the Covid pandemic. These results are echoed across the entire sample period of 572 trading days suggesting skill at the portfolio selection level based on the risk factors we introduce, and in the manner in which we allocate capital for day trading within our twenty-four risk x ratings portfolios.

Synthetic cap rates (1991-Covid era). 2024, Global Finance Journal, Vol 60, Article 100961.

We introduce a method that combines Euclidean distancing and OLS techniques to project synthetic capitalization rate indices ('SCXs') for metropolitan statistical areas in the US. SCXs are projected independently of market prices, asset specific characteristics and geographic location (ex-ante). In contrast to market cap rates, driven by geographic proximity and market comparables, our new method is driven by economic proximity. We find SCXs provide better forward guidance than market cap rates for commercial real estate ('CRE') defaults and CRE values before and during the Covid pandemic. Our method establishes CRE benchmark cap rate indices across property types that explicitly connect CRE valuation at the MSA level to macroeconomic indicators through economic proximity.

Liquidity risk and CMBX microstructure. 2023, Review of Financial Economics, Vol 42, Issue 2, 148–185.

In this paper we introduce a generalizable method using principal component analysis to estimate daily risk decompositions of default, interest rate, liquidity, and excess liquidity from previously simulated reduced form monthly risk decompositions. Our method generates these measures for CMBX. To assess liquidity estimates, we compare our risk decomposition measures of liquidity to classical microstructure effective bid-ask spreads, daily. We find our measures to be significant in explaining effective bid-ask spreads over twelve years of daily history and in twenty-day forecasts. This is the first paper in the literature to focus on CMBX price formation with dual techniques of liquidity estimation.

CMBS market efficiency: The crisis and the recovery. 2018, Journal of Financial Stability, Vol. 36, 159-186.

This paper presents a reduced form credit risk model to study CMBS pricing and CMBS market efficiency during and after the credit crisis with a comprehensive loan, bond, and deal level data set. Using a model determined fair value, an automated trading strategy based on a newly determined risk ratio buys undervalued and sells overvalued CMBS. These strategies result in substantial trading profits between November 2007 and June 2015. Controlling for CMBS sector risk factors, we reject CMBS market efficiency over the entire sample period. When we split the sample into the Crisis and Recovery periods, we observe persistent abnormal returns over both subperiods, which is consistent with an inefficient CMBS market. Because the CMBS market appears to be inefficient, our results suggest that the approach presented in this paper may facilitate the increased financial stability of the CRE sector through better pricing and risk management of CMBS.

The composition of CMBS risk. 2017, Journal of Banking and Finance, Vol 76, 215-239.

This paper identifies the put-option, liquidity availability proportion, and shadow liquidity risk premia embedded within commercial mortgage-backed securities (CMBS) using reduced form and structural generalization models. These risk values are then interpreted as trading signals which are tested with automated trading strategies that buy undervalued and sell overvalued CMBS from November 2007 through June 2015. All three signals generate substantial positive trading profits in testing for the reduced form model but not for the structural generalization. The risk signals constructed independently of market pricing provide more profitable automated trading insights than those constructed from interactions between modeled risk measures and market spreads. In my tests of the information content of the risk signals with respect to future macroeconomic indicators, I find statistically significant evidence in keeping with recent studies. While I cannot reject CMBS efficiency, this paper's disclosure of new risk measures, the profitability of automated strategies based on those risk measures, and the statistical significance of their forward guidance capabilities, together, contributes to our understanding of CMBS risk and the credit spread puzzle debate.