

REN-RAW CHEN

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AREAS OF INTEREST

Credit Derivatives
Term Structure of Interest Rates
Contingent Claims Pricing with Stochastic Interest Rates
Mortgage Backed Securities
Option Applications in Corporate Finance Areas

EDUCATION

University of Illinois at U-C	Finance	1987-1990	Ph.D
University of Illinois at U-C	Finance	1985-1987	M.S.
National Taiwan University	Business Administration	1978-1982	B.B.A

EXPERIENCE

Full time

Asst. and Asso. Prof.	Rutgers Univ.	7/1990-present
Vice President	Lehman Brothers Inc	8/1997-1/1999
Visiting Asst. Prof.	Univ. of Pittsburgh	1/1996-6/1996
Visiting Asso. Prof.	National Taiwan Univ.	8/1994-12/1995

Part time

Quantitative Consultant	JP Morgan	2/1992-8/1994
Quantitative Consultant	Price Waterhouse	1/1996-8/1997
Quantitative Consultant	Grand Cathy Securities	3/1995-8/1997, 8/2000-1/2001

COURSES TAUGHT

Financial Engineering	Univ. of Pittsburgh
Capital Market Theory / Continuous Time Finance	Nat'l Taiwan Univ.
Seminar on Term Structure	Nat'l Taiwan Univ.
Real Estate Finance & Mortgage Backed Sec's.	NTU and Rutgers U.
Advanced Corporate Finance	Rutgers U. and U. of Pitts.
Business Forecasting	Rutgers U.
Futures and Options	Rutgers U. and U. of Pitts.
Investments	Univ. of Ill. and U. of Pitts.
Introduction to Financial Management	Rutgers U. and Univ. of Ill.

PUBLISHED PAPERS

1. "A Universal Lattice" with Tyler Yang, July, *Review of Derivatives Research*, Vol. 3, No. 2, p. 115-134, 1999.
2. "Valuing Fixed-Income Options and Mortgage-Backed Securities with Alternative Term Structure Models," with Tyler Yang and Brian Maris, *Journal of Business, Finance, and Accounting*, forthcoming, 1999.
3. "Pricing the Quality Option in Japanese Government Bond Futures," with Bin-Huei Lin and Jian-Hsin Chou, *Applied Financial Economics*, 1997.
4. "Interest Rate Processes in Mortgage Pricing: Relevancy and Irrelevancy," with Tyler Yang, *Journal of Housing Research*, 1995.
5. "Interest Rate Contingent Claims in a Multi-Factor CIR World" with Louis O. Scott *Journal of Derivatives*, winter, 1995.
6. "A Two-Factor Preference-Free Model for Interest Rate Sensitive Claims," *Journal of Futures Markets*, April, 1995.
7. "Valuing Contingent Value Rights and Firm's Extension Decision," Co-authored with John Wei, *Journal of Financial Studies*, July, 1994.
8. "Maximum Likelihood Estimation of a Multi-Factor Equilibrium Model of the Term Structure of Interest Rates," Co-authored with Louis O. Scott, *Journal of Fixed Income*, December, 1993.
9. "Pricing Interest Rate Futures Options with Futures Style Margining," *Journal of Futures Markets*, February, 1993.
10. "The Constant Elasticity of Variance Family of Stock Prices in Option Pricing: Review and Integration" Co-authored with C.F. Lee, *Journal of Financial Studies*, July, 1993.
11. "Solutions for Bond Options in a Multi-Factor Equilibrium Model of the Term Structure," Co-authored with Louis O. Scott, *Review of Financial Studies*, December, 1992.
12. "A New Look at Interest Rate Futures Contracts", *Journal of Futures Markets*, October, 1992.
13. "Exact Solutions for Futures and European Futures Options On Pure Discount Bonds," *Journal of Financial and Quantitative Analysis*, March, 1992.
14. "Pricing Stock and Bond Options When the Default-Free Rate is Stochastic: A Comment," *Journal of Financial and Quantitative Analysis*, September, 1991.

ACADEMIC PRESENTATIONS

- "Analytical Upper Bounds for American Options,"
Presented at the 1999 Review of Quantitative Finance and Accounting Meetings in Austin, Texas.
- "An Integrated Model for the Term and Volatility Structures of Interest Rates,"
Presented at the 1997 Financial Management Association Meetings in Hawaii.
- "A Universal Lattice,"
Presented at the 1996 Financial Management Association Meetings in New Orleans, Louisiana.
- "Pricing MBSs with a Multi-factor Term Structure Model: What Is Wrong with the Single-factor Models?"

Presented at the 1995 Financial Management Association Meetings in New York, New York.

“Multi-factor Interest Rate Models for Mortgage-backed Securities,”

Presented at the 1995 AREURA Annual Meetings in Washington D.C.

“Valuing Bond Futures with the Quality Option,”

Presented at the 1994 American Finance Association Annual Meetings in Boston, Massachusetts.

“Interest Rate Processes in Mortgage Pricing: Relevancy and Irrelevancy,”

Presented at the 1994 AREURA Annual Meetings in Boston, Massachusetts.

“Efficiency of Mortgage Pricing Models: A Comparison between the Numerical Method and the Closed Form Model,”

Presented at the 1993 AREURA Annual Meetings in Anaheim, California.

“Valuing Contingent Value Rights and Firm's Extension Decision,”

Presented at the 1992 Financial Management Association Annual Meetings in San Francisco, California.

“Implied Stock Volatility and Market Efficiency,”

Presented at the 1992 Eastern Finance Association Annual Meetings in Tampa, Florida.

“Distribution Family of Stock Prices for Option Pricing: Review, Critique, and Empirical Study,”

Presented at the 1991 Conference for Accounting and Quantitative Finance in Buffalo, New York.

“Maximum Likelihood Estimation of a Multi-Factor Equilibrium Model of the Term Structure of Interest Rates,”

Presented at the 1990 American Finance Association Annual Meetings in Washington D.C.

Presented at the 1990 Southern Finance Association Annual Meetings in Savannah, Georgia.

“Closed Form Solutions For Bond Futures And Options On Bond Futures,”

Presented at the 1990 Conference for Accounting and Quantitative Finance in New Brunswick, New Jersey.

Presented at the Waterloo 1989 Bond Options Conference in Waterloo, Canada.

WORKING PAPERS

completed

1. “Pricing Default-Triggered Credit Derivatives,” with Ben Sopranti, September, 2000, under the 3rd review of the *Journal of Financial and Quantitative Analysis*.
2. “Term Structure of Credit Spreads, Implied Forward Default Probability Curve, and the Valuation of Defaultable Claims,” July, 2000, under review at *Journal of Finance*.
3. “A No Arbitrage Model in a Multi-Asset Economy,” with Tyler Yang and S.L. Chung, January 2001, to be submitted to *Management Science*.
4. “Analytical Upper Bounds for American Option Prices,” March, 2000, under review at *Journal of Financial and Quantitative Analysis*.

5. "Multi-Factor CIR Models of the Term Structure: Estimates and Tests from a State-Space Model Using a Kalman Filter," with Louis O. Scott, December 1995, under the 5th review at *Review of Financial Studies*.
6. "Bounds for Treasury Bond Futures and the Delivery Options," March, 1997, under review at *Journal of Business*.
7. "Valuing Bond Futures with the Quality Option," Co-authored with Peter Carr, October, 1996.
8. "An Integrated Model for Term and Volatility Structures of Interest Rates," with Tyler Yang, October, 1996.

in progress

1. "On the Volatility Smile," with Oded Palmon and Judy Chen.
2. "On the Dynamic Behavior of the Forward Price under Stochastic Interest Rates," with Jay Huang.
3. "Implied Volatility and Yield Curve".
4. "The Information Content of the Implied Volatility on Eurodollar Futures Options Market," with John Wald.
5. "Pricing the Timing Option in T-Bond Futures Contracts," with Peter Carr and Louis Scott.
6. "Revisiting Capital Budgeting under Uncertainty: A Contingent Claim Approach," with C.F. Lee and Oded Palmon.

BOOKS AND BOOK CHAPTERS

1. *Understanding and Managing Interest Rate Risks*, World Scientific, 1996.
2. "Pricing and Hedging Interest Rate Risks with the Multi-Factor Cox-Ingersoll-Ross Model," with Louis Scott, a chapter in *Advances in Fixed Income Valuation Modeling and Risk Control*, edited by Frank Fabozzi, Fabozzi Publishing, 1996.
3. *Pricing Credit Derivatives*, with Domonic Okane (in progress).

OTHER PUBLISHED ARTICLES

1. "Pricing Bond Options through Factor Models," *Derivatives Week*, January 31, 1994.
2. "Net Present Value Method in Housing Price Estimation under Stochastic Interest Rates – an empirical study of Taipei (translated title)", in Chinese, with Yi-Yu Chen and Hsien-Hsing Liao, *Journal of the Land Bank*, September, 1994.
3. Efficiency of Mortgage backed Securities Pricing Models – Closed Form versus Non Closed Form (translated title)," in Chinese, with Hsien-Hsing Liao and Tyler Yang, *Journal of Securities Markets Development*, April, 1994.

HONORS

Recipient of 1998 FASIP Award (for excellent academic performances)
 Finalist of 1993 School of Business Thomas Mott Teaching Award
 Best paper on investments, Southwest Financial Association, 1993.
 Recipient of 1992 FASIP Award (for excellent academic performances)
 Finalist of 1992 School of Business Thomas Mott Teaching Award
 Finalist of 1991 School of Business Thomas Mott Teaching Award

Finalist of 1991 FMA Dissertation Contest

GRANTS RECEIVED

Faculty of Management	June, 1999 – May, 2000
University Research Council	June, 1992 – May, 1993
NSF Supercomputer Grant	January, 1992 – February, 1993
Chicago Board of Trade	August, 1991 – July, 1992
University Research Council	June, 1991 – May, 1992

ACADEMIC SERVICES

Associate editor of:

Review of Derivatives Research

Referee of:

Review of Economics and Statistics, Journal of Finance, Review of Financial Studies, Journal of Financial and Quantitative Analysis, Review of Quantitative Finance and Accounting, Journal of Banking and Finance, Journal of Futures Markets, Financial Management, Journal of Empirical Finance, Review of Derivatives Research, and others.