2012

Curriculum Vitae of Min DAI

1 Personal Information

Gender: Male;
Nationality: Chinese, Singapore PR
Marital Status: Married with one child
Postal Address: Dept of Math, National University of Singapore,
10 Lower Kent Ridge Road, Singapore 119076
Email address: matdm@nus.edu.sg
Tel: (65) 6516 2754; Fax: (65) 6779 5452

2 Education

Ph.D. in Mathematics, Fudan University, 2000

3 Academic Experiences

- Jul 2004 to present

  Associate Professor (since Jan 2010) and Assistant Professor (Jul 04-Dec 09), Department of Mathematics, National University of Singapore, Singapore

- June 2010 to June 2011

  Visiting Scholar, Olin Business School, Washington University in St. Louis, U.S.

- Jun 2002 to Jun 2004

  Associate Professor (Sep 03-Jun 04) and Lecturer (Jun 02-Aug 03), Department of Financial Mathematics, Peking University, Beijing, China

- Oct 2000 to May 2002

  Postdoctor, Institute of Mathematics, Peking University, Beijing, China

4 Research Interests

Mathematical Finance, Applied PDEs and Numerical PDEs, Stochastic Control

5 Professional Activities

Associate Editor (2010-), Journal of Economic Dynamics and Control

6 Research Grants

- Principal Investigator, "Systems of variational inequality equations arising in finance" (R-146-000-138-112). Source: Singapore MOE Academic Research Fund. Duration: 3 years from Apr 2011.
- Principal Investigator, "Liquidity premium and transaction costs under realistic market conditions" (R-146-000-124-720/646). Source: NUS RMI Research Grant. Duration: 2 year from May 2009.
- Principal Investigator, "Optimal trading strategy of a mutual fund with portfolio constraints and illiquidity" (R-146-000-117-720/646). Source: NUS RMI Research Grant. Duration: 1 year from May 2008.
- Principal Investigator, "Portfolio selection under realistic market conditions-bounded portfolio, transaction costs, and non-concave utility" (R-703-000-004-720/646). Source: NUS RMI Research Grant. Duration: 1 year from May 2007.
- Principal Investigator, "Continuous-time portfolio selection with transaction costs" (R-146-000-096-112). Source: Singapore MOE Academic Research Fund. Duration: 3 years from May 2007.
- Principal Investigator, "Pricing employee reload options under/beyond the Black-Scholes world" (R-146-000-062-101). Source: NUS Start-up Research Fund. Duration: 2 years from Nov 2004.
- Principal Investigator, "On some option pricing problems" (10301002). Source: National Natural Science Fund of China. Duration: 3 years from Nov 2003.

7 Recent Invited Presentations

Plenary and Invited Talks

- Frontier of Computational and Applied Mathematics, BICMR, Beijing, Oct 21-25, 2011
- Workshop on Stochastic Modeling and Applications, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, Jun 27-30, 2011
- Conference on Problems and Challenges in Risk Management and Financial Engineering, Tongji University and Shanghai Jiaotong University, Shanghai, Jun 23-26, 2011
- The Workshop on Stochastic Analysis & Finance, City University of Hong Kong, Hong Kong, June 29 - July 3, 2009
- (Plenary speaker) Conference on Numerical Methods in Finance, Ecole des Ponts, ParisTech, Paris, April 15-17, 2009
- International Conference on Credit Risk Analysis and Credit Derivative Pricing, Tongji University, Shanghai, Jun 15-16, 2008
- (Plenary speaker) The Second International Conference on Numerical Methods for Finance, Dublin, Ireland, Jun 3-6, 2008.

Colloquium/Seminar Talks

- 2011: Peking University, Chinese Academy of Sciences, Fudan University, Chinese University of Hong Kong, University of International Business and Economics, Nankai University, Hong Kong University of Science & Technology, University of Illinois at Chicago, University of South California, Columbia University, University of Iowa
- 2010: Wayne State University, Carnegie Mellon University, Nanjing University, Tongji University
- 2009: Chinese University of Hong Kong, East China Normal University, Shanghai Normal University, Suzhou University
- 2008: Peking University, Chinese Academy of Sciences, Zhejiang University, University of Oxford

8 Publications

1. M. Dai, Z. Yang, and Y.F. Zhong, Optimal stock selling based on the global maximum, accepted for publication in SIAM Journal on Control and Optimization

2. M. Dai, H.F. Wang, and Z. Yang, Leverage management in a bull-bear switching market, accepted for publication in Journal of Economic Dynamics and Control

3. N. Chen, M. Dai, and X.W. Wan, A non-zero-sum game approach to convertible bonds: tax benefit, bankruptcy cost and early/late calls, accepted for publication in Mathematical Finance

4. M. Dai and Y.F. Zhong, Optimal stock selling/buying strategy with reference to the ultimate average, Mathematical Finance, (2012), 22(1):165–184

5. B. Bian, M. Dai, L. Jiang, J. Zhang and Y.F. Zhong, Optimal decision for selling an illiquid stock, Journal of Optimization Theory and Applications, (2011), 151(2):402-417

6. M. Dai and Z.Q. Xu, Optimal redeeming strategy of stock loans with finite maturity, Mathematical Finance, (2011), 21(4):775-793

7. M. Dai, H.Q. Jin and H. Liu, Illiquidity, position limits, and optimal investment for mutual funds, Journal of Economic Theory, (2011), 146:1598–1630

8. M. Dai, Y.F. Zhong and Y.K. Kwok, Optimal arbitrage strategies on stock index futures under position limits, Journal of Futures Market, (2011), 31(4):394-406

9. M. Dai, Q. Zhang and Q. Zhu, Trend following trading under a regime switching model, SIAM Journal on Financial Mathematics, (2010), 1:780-810

10. M. Dai, H.Q. Jin, Y.F. Zhong, and X.Y. Zhou, Buy low and sell high, Contemporary Quantitative Finance: Essays in Honour of Eckhard Platen, edited by Chiarella, Carl and Novikov, Alexander, Springer, (2010), 317-334

11. M. Dai and Y.F. Zhong, Penalty methods for continuous-time portfolio selection with proportional transaction costs, Journal of Computational Finance, (2010), 13(3):1-31

12. M. Dai, Z.Q. Xu and X.Y. Zhou, Continuous-time mean-variance portfolio selection with proportional transaction costs, SIAM Journal on Financial Mathematics, (2010), 1(1):96-125

13. M. Dai, P.F. Li and J.E. Zhang, A lattice pricing algorithm for moving-average barrier options, Journal of Economic Dynamics and Control, (2010), 34(3):542-554

14. M. Dai, L. Jiang, P.F. Li and F.H. Yi, Finite horizon optimal investment and consumption with transaction costs, SIAM Journal on Control and Optimization, (2009), 48(2):1134-1154

15. M. Dai and F.H. Yi, Finite horizon optimal investment with transaction costs: a parabolic double obstacle problem, Journal of Differential Equations, (2009), 246:1445-1469

16. L.X. Wu and M. Dai, Pricing jump risk with utility indifference, Quantitative Finance, (2009), 9(2):177-186

17. M. Dai, Y.K. Kwok and J. Zong, Guaranteed minimum withdrawal benefit in variable annuities, Mathematical Finance (2008), 18(4):595-611

18. M. Dai and Y.K. Kwok, Optimal multiple stopping models of reload options and shout options, Journal of Economic Dynamics and Control (2008), 32(7):2269-2290

19. M. Dai, Y.K. Kwok and H. You, Intensity-based framework and penalty formulation of optimal stopping problems, Journal of Economic Dynamics and Control (2007), 31(12):3860-3880

20. Z. Yang, F.H. Yi and M. Dai, A parabolic variational inequality arising from the valuation of strike reset options, Journal of Differential Equations (2006), 230:481-501

21. M. Dai and Y.K. Kwok, Characterization of optimal stopping regions of American path dependent options, Mathematical Finance (2006), 16(1):63-82

22. M. Dai and Y.K. Kwok, Optimal policies of call with notice period requirement for American warrants and convertible bonds, Asia Pacific Financial Markets (2005), 12(4):353-373

23. M. Dai and Y.K. Kwok, American options with lookback payoff, SIAM Journal on Applied Mathematics (2005), 66(1):206-227

24. M. Dai and Y.K. Kwok, Options with combined reset rights on strike and maturity, Journal of Economic Dynamics and Control (2005), 29(9):1495-1515

25. M. Dai and Y.K. Kwok, Valuing employee reload options under time vesting requirement, Quantitative Finance (2005), 5(1):61-69

26. M. Dai, H.Y. Wong and Y.K. Kwok, Quanto lookback options, Mathematical Finance (2004), 14(3):445-467

27. M. Dai,Y.K. Kwok and L.X. Wu, Optimal shouting policies of options with strike reset rights, Mathematical Finance (2004), 14(3):383-401

28. M. Dai and Y.K. Kwok, Knock-in American options, Journal of Futures Markets (2004), 24(2):179-192

29. L. Jiang and M. Dai, Convergence of binomial tree method for European/American path-dependent options, SIAM Journal on Numerical Analysis (2004), 42(3):1094-1109

30. M. Dai, One-state variable binomial models for European-/American-style geometric Asian options, Quantitative Finance (2003), 3(4):288-295

31. M. Dai, Y.K. Kwok and L.X. Wu, Options with multiple reset rights, International Journal of Theoretical and Applied Finance (2003), 6(5):637-653

32. M. Dai, A closed form solution to perpetual American floating strike lookback option, Journal of Computational Finance (winter 2000/2001), 4(2):63-68

33. M. Dai, A modified binomial tree method for currency lookback options, Acta Mathematica Sinica, (2000), 16(3):445-454

34. L. Jiang and M. Dai, Convergence analysis of binomial tree method for American-type path-dependent options, Free boundary problems:

theory and applications, I (Chiba, 1999), 153-166, GAKUTO Internat. Ser. Math. Sci. Appl., 13, Tokyo, 2000

35. L. Jiang and M. Dai, Convergence of binomial tree method for American options, Partial differential equations and their applications (Wuhan, 1999), 106-118, World Sci. Publ., River Edge, NJ, 1999