

Curriculum Vitae of Min DAI

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1 Education

- Ph.D. in Mathematics, Fudan University, 2000

2 Academic Experiences

- Jul 2014 to present
Director, Center for Quantitative Finance, National University of Singapore
- Jul 2012 to present
Program Director, Master of Science in Quantitative Finance, National University of Singapore
- Jul 2004 to present
Professor (since Jul 2013), Associate Professor (Jan 2010-Jun 2013), and Assistant Professor (Jul 2004-Dec 2009), Department of Mathematics, National University of Singapore
- Nov 2014 to Oct 2018
Deputy Director in Industry Relation, Risk Management Institute, National University of Singapore
- Jun 2002 to Jun 2004
Associate Professor (Sep 2003-Jun 2004) and Lecturer (Jun 2002-Aug 2003), Department of Financial Mathematics, Peking University

3 Research Interests

Quantitative Finance and Economics

4 Awards and Grants

- 2015 Outstanding Scientist, Faculty of Science, NUS
- 2011 TCW Best Paper Award (US\$2,500), “Optimal consumption and investment with asymmetric long-term/short-term capital gains taxes” (joint with Hong Liu and Yifei Zhong)
- Postdoctoral Fellowship at Peking University (Oct 2000- May 2002)
- PI, “Global risk management: modeling, mathematical, and statistical issues”, Source: Singapore MOE Academic Research Fund. Duration: 3 years from Oct 2017. Amount: S\$530,600
- PI, “Merton’s problem with capital gains tax and transaction costs” (R-146-000-242-114), Source: Singapore MOE Academic Research Fund. Duration: 3 years from Apr 2017. Amount: S\$140,574.5
- PI, “Financial risk control and regulation: modelisation and numerical methods” (R-146-000-225-133), Source: USPC-SPO-NUS Fund. Duration: 1 year from Jul 2016. Amount: S\$22,900
- Co-PI, “Quantitative finance: modeling, mathematical, and statistical issues” (R-146-000-201-112). Source: Singapore MOE Academic Research Fund. Duration: 3 years from Oct 2014. Amount: S\$364,174
- PI, “Stochastic control problems arising from finance and economics” (R-146-000-188-112). Source: Singapore MOE Academic Research Fund. Duration: 3 years from Feb 2014. Amount: S\$96,074
- PI, “Lifecycle consumption and investment with illiquid housing, voluntary retirement and capital gain tax/stamp duty” (R-146-000-160-646). Source: Global Asia Institute - LCF Fund. Duration: 3 years from Apr 2012. Amount: S\$126,500
- PI, “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. Amount: S\$46,300
- PI, “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. Amount: S\$47,200

- PI, “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. Amount: S\$25,500.
- PI, “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. Amount: S\$36,000.
- PI, “Continuous-time portfolio selection with transaction costs” (R-146-000-096-112). Source: Singapore MOE Academic Research Fund. Duration: 3 years from May 2007. Amount: S\$102,128.
- PI, “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. Amount: S\$40,373.
- PI, “On some option pricing problems” (10301002). Source: National Natural Science Fund of China. Duration: 3 years from Nov 2003. Amount: RMB70,000

5 Professional Activities

- Editorial Board
 - Associate Editor (Jan 2010-), Journal of Economic Dynamics and Control
 - Associate Editor (May 2012-), Asia-Pacific Journal of Operational Research
 - Associate Editor (Jan 2016-), SIAM Journal on Financial Mathematics
 - Associate Editor (Jan 2017-), Mathematics and Financial Economics
 - Co-Editor (Dec 2018-), Digital Finance
- Organizing/Scientific Committee of Workshop/Conference/Summer School
 - Summer School on Financial Mathematics (2 Nov-23 Dec 2009 Singapore)

- NUS-Stanford Workshop on Risk and Regulation (17-18 Dec 2012 Singapore)
- The First Asian Quantitative Finance Conference (9-11 Jan 2013 Singapore)
- Summer Program on Nonlinear Expectation and Risk Measure (3 Jun-12 Jul 2013 Singapore)
- The 2013 IMS-FPS Workshop (19-21 Jun 2013 Singapore)
- The 1st and 2nd NUS-UTokyo Workshops on Quantitative Finance (26-27 Sep 2013 Singapore, 25-26 Sep 2014 Tokyo)
- The 2nd, 3rd, 4th, and 5th NUS Workshops on Risk and Regulation (9-10 Jan 2014 Singapore, 8-9 Jan 2015 Singapore, 7-8 Jan 2016 Singapore, 5-6 Jan 2017 Singapore)
- The 2nd NUS-Stanford Workshop in Quantitative Finance: Statistical Issues (16 May 2014 Singapore)
- The 1st and 2nd NUS-UParis Diderot Workshop on Quantitative Finance (4-5 Feb 2015 Singapore, 14-15 Sep 2015 Paris)
- Paris-Southeast Asia Conference in Mathematical Finance (7-11 Feb 2015 Cambodia)
- Risk Management and Quantitative Finance Forum (15-16 May 2015 Suzhou)
- Berlin-Princeton-Singapore Workshop on Quantitative Finance (29 Jun-1 Jul 2015 Singapore, 12-13 Jul 2016 Princeton)
- 2015 Graduate Summer School on Quantitative Finance (3-11 Jul 2015 Suzhou)
- 2015 Singapore-Suzhou Workshop on Quantitative Finance (12-13 Jul 2015 Suzhou)
- Risk Measures, XVA Analysis, Cost of Capital & Central Counterparties (18-19 Apr 2016 Singapore, 27-28 Oct 2016 Shanghai)
- Models and Numerical Methods for Financial Risk Management (6-7 Oct 2016 Paris)
- Second Paris-Asia Conferences in Quantitative Finance (23-27 May 2017 Suzhou)

6 Recent Invited Presentations

Invited Talks

- Quantitative Methods in Finance, Sydney, Australia, 12-15 Dec, 2017
- The 3rd Berlin-Princeton-Singapore Workshop on Quantitative Finance, Berlin, Germany, 19-22 April 2017
- The 5th Asian Quantitative Finance Conference, Seoul, South Korea, 24-26 Apr, 2017
- Winter Workshop on Operations Research, Finance, and Mathematics, Sapporo, Japan, 20-24 Feb 2017
- The 2nd Berlin-Princeton-Singapore Workshop on Quantitative Finance, Princeton, 12-13 Jul 2016
- The 4th Asian Quantitative Finance Conference, Osaka, Japan, 21-23 Feb, 2016
- The 3rd Asian Quantitative Finance Conference, Hong Kong, 6-8 Jul 2015
- The 1st Berlin-Princeton-Singapore Workshop on Quantitative Finance, Singapore, 29 Jun-1 Jul 2015
- Paris-Southeast Asia Conference in Mathematical Finance, Siem Reap, Cambodia, 7-11 Feb 2015
- Informs Annual Meeting 2014, San Francisco, US, 9-12 Nov 2014
- The 7th Chinese Education Forum in Financial Math and Financial Engineering, Lanzhou, China, 31 Jul 31-3 Aug 2014
- SYSU Workshop on Financial Engineering and Risk Management, Guangzhou, China, 25-28 Jul 2014
- International Symposium on Differential Equations and Stochastic Analysis in Mathematical Finance, Sanya, China, 12-16 Jul 2014
- The 7th BSDE Conference, Weihai, China, 22-17 Jun 2014
- The 2nd Asian Quantitative Finance Conference, Weihai, China, 19-21 Jun 2014
- Berlin-Singapore Workshop on Quantitative Finance, Berlin, Germany, 21-24 May 2014

- Informs Annual Meeting 2013, Minneapolis, US, 6-9 Oct 2013
- Advanced Method in Mathematical Finances, Angers, France, 3-6 Sep 2013
- The 2013 International Conference on Financial Engineering, Suzhou, 22-24 Mar 2013
- International Workshop on Quantitative Finance Daejeon, Korea, 18-19 Mar 2013
- Analysis and Control of Stochastic Partial Differential Equations, Shanghai, 3-6 Dec 2012
- Informs Annual Meeting 2012, Phoenix, US, 14-17 Oct 2012
- The 9th East China Partial Differential Equations Conference & Shanxi International Conference on Partial Differential Equations, Taiyuan, Shanxi, China, 16-19 Jul 2012
- Workshop on Probability and Statistics in Finance, UC Berkeley, CA, 30-31 May 2012
- Workshop on Quantitative Financial, City University of Hong Kong, Hong Kong, 5 May 2012
- Frontier of Computational and Applied Mathematics, BICMR, Beijing, 21-25 Oct 2011
- Workshop on Stochastic Modeling and Applications, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, 27-30 Jun 2011
- Conference on Problems and Challenges in Risk Management and Financial Engineering, Tongji University and Shanghai Jiaotong University, Shanghai, 23-26 Jun 2011
- Workshop on Stochastic Analysis & Finance, City University of Hong Kong, Hong Kong, 29 Jun- 3 July 2009
- Conference on Numerical Methods in Finance, Ecole des Ponts, Paris-Tech, Paris, 15-17 Apr 2009
- International Conference on Credit Risk Analysis and Credit Derivative Pricing, Tongji University, Shanghai, 15-16 Jun 2008

- The Second International Conference on Numerical Methods for Finance, Dublin, Ireland, 3-6 Jun 2008.

Invited Colloquium/Seminar Talks

- 2016: Nanjing U, Tongji U, Soochow U, Peking U, Tsinghua U, Ningbo Nortingham
- 2014: Peking University, ETH, London School of Economics & Political Sciences, University of Oxford, Xiamen University, Chinese Academy of Sciences, Yangzhou University, Fudan University, Shanghai Jiaotong University, Tongji University, Soochow University
- 2013: Hong Kong University of Science & Technology, Tongji University, Shanghai Jiaotong University
- 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, Soochow University
- 2008: Peking University, Chinese Academy of Sciences, Zhejiang University, University of Oxford

7 Publications

Publications in Refereed Journals

1. M. Dai, L. Goncalves-Pinto and J. Xu, How does illiquidity affect delegated portfolio choice? *Journal of Financial and Quantitative Analysis*, forthcoming
2. J. Cai, X. Chen, and M. Dai, Portfolio selection with capital gains tax, recursive utility, and regime switching, *Management Science*, (2018), 64(5), 2308-2324

3. M. Dai, Z. Yang, Q. Zhang, and Q. Zhu, Optimal trend following trading rules, *Mathematics of Operations Research*, (2016), 41(2), 626-642
4. M. Dai and Z. Yang, A note on finite horizon optimal investment and consumption with transaction costs, *Discrete and Continuous Dynamical Systems - Series B*, (2016), 21(5), 1445-1454
5. M. Dai, L. Tang and X.Y. Yue, Calibration of stochastic volatility models: A Tikhonov regularization approach, *Journal of Economic Dynamics and Control*, (2016), 64, 66-81
6. M. Dai, P.F. Li, H. Liu, and Y. Wang Portfolio choice with market closure and implications for liquidity premia, *Management Science*, (2016), 62(2), 368-386
7. M. Dai, H. Liu, C. Yang, and Y.F. Zhong, Optimal tax-timing with asymmetric long-term/short-term capital gains tax, *Review of Financial Studies*, (2015), 28(9), 2687-2721.
8. Y. Chen, M. Dai, J. Xu, and M. Xu Superhedging under ratio constraint *Journal of Economic Dynamics and Control*, (2015), 58, 250-264.
9. M. Dai, J. Keppo, and T. Maull, Hiring, firing and employment protection, *Journal of Economic Dynamics and Control*, (2015), 56, 55-81.
10. M. Dai, L. Jiang and J. Lin, Pricing corporate debt with finite maturity and Chapter 11 proceedings, *Quantitative Finance*, (2013), 13(2), 1855-1861.
11. X. Chen and M. Dai, Characterization of optimal strategy for multi-asset investment and consumption with transaction costs, *SIAM Journal on Financial Mathematics*, (2013), 4(1), 857-883.
12. 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, *Mathematical Finance*, (2013), 23(1), 57-93.
13. M. Dai, Z. Yang and Y.F. Zhong, Optimal stock selling based on the global maximum, *SIAM Journal on Control and Optimization*, (2012), 50, 1804-1822.

14. M. Dai, H.F. Wang and Z. Yang, Leverage management in a bull-bear switching market, *Journal of Economic Dynamics and Control*, (2012), 1585-1599.
15. M. Dai and Y.F. Zhong, Optimal stock selling/buying strategy with reference to the ultimate average, *Mathematical Finance*, (2012), 22(1):165–184.
16. 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.
17. M. Dai and Z.Q. Xu, Optimal redeeming strategy of stock loans with finite maturity, *Mathematical Finance*, (2011), 21(4):775-793
18. 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
19. 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
20. M. Dai, Q. Zhang and Q. Zhu, Trend following trading under a regime switching model, *SIAM Journal on Financial Mathematics*, (2010), 1:780-810
21. 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
22. 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
23. 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
24. 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

25. 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
26. L.X. Wu and M. Dai, Pricing jump risk with utility indifference, *Quantitative Finance*, (2009), 9(2):177-186
27. M. Dai, Y.K. Kwok and J. Zong, Guaranteed minimum withdrawal benefit in variable annuities, *Mathematical Finance* (2008), 18(4):595-611
28. 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
29. 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
30. 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
31. M. Dai and Y.K. Kwok, Characterization of optimal stopping regions of American path dependent options, *Mathematical Finance* (2006), 16(1):63-82
32. 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
33. M. Dai and Y.K. Kwok, American options with lookback payoff, *SIAM Journal on Applied Mathematics* (2005), 66(1):206-227
34. 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
35. M. Dai and Y.K. Kwok, Valuing employee reload options under time vesting requirement, *Quantitative Finance* (2005), 5(1):61-69
36. M. Dai, H.Y. Wong and Y.K. Kwok, Quanto lookback options, *Mathematical Finance* (2004), 14(3):445-467

37. 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
38. M. Dai and Y.K. Kwok, Knock-in American options, *Journal of Futures Markets* (2004), 24(2):179-192
39. 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
40. M. Dai, One-state variable binomial models for European-/American-style geometric Asian options, *Quantitative Finance* (2003), 3(4):288-295
41. 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
42. M. Dai, A closed form solution to perpetual American floating strike lookback option, *Journal of Computational Finance* (winter 2000/2001), 4(2):63-68
43. M. Dai, A modified binomial tree method for currency lookback options, *Acta Mathematica Sinica*, (2000), 16(3):445-454

Publications in Books

1. Y. Chen, M. Dai and K. Zhao, Finite horizon optimal investment and consumption with CARA Utility and proportional transaction costs *Stochastic Analysis and Applications to Finance, Essays in Honour of Jia-an Yan*, Eds. T. Zhang and X. Y. Zhou, 39-54, World Scientific, 2012
2. 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, 317-334, Springer, 2010