A Mathematical Finance Database

By Marek Rutkowski and Marek Musiela

References

[1] Aase, K.K. (1988) Contingent claim valuation when the security price is a combination of an Ito process and a random point process. *Stochastic Process. Appl.* 28, 185-220.

[2] Aase, K.K., Øksendal, B. (1988) Admissible investment strategies in continuous trading. *Stochastic Process. Appl.* 30, 291–301.

[3] Adams, P.D., Wyatt, S.B. (1987) Biases in option prices: evidence from the foreign currency option market. *J. Banking Finance* 11, 549–562.

[4] Ahn, C.M., Thompson, H.E. (1988) Jump-diffusion processes and the term structure of interest rates. *J. Finance* 43, 155–174.

[5] Ahn., H., Muni, A., Swindle, G. (1997) Misspecified asset price models and robust hedging strategies. To appear in *Appl. Math. Finance.*

[6] Aït-Sahalia, Y. (1996a) Nonparametric pricing of interest rate derivative securities. *Econometrica* 64, 527–560.

[7] Aït-Sahalia, Y. (1996b) Testing continuous-time models of the spot interest rate. *Rev. Finan. Stud.* 9, 385–426.

[8] Akahori, J. (1995) Some formulae for a new type of path-dependent option. *Ann. Appl. Probab.* 5, 383–388.

[9] Amin, K. (1991) On the computation of continuous time option prices using discrete approximations. *J. Finan. Quant. Anal.* 26, 477–496.

[10] Amin, K., Bodurtha, J. (1995) Discrete time valuation of American options with stochastic interest rates. *Rev. Finan. Stud.* 8, 193–234.

[11] Amin, K., Jarrow, R. (1991) Pricing foreign currency options under stochastic interest rates. *J. Internat. Money Finance* 10, 310–329.

[12] Amin, K., Jarrow, R. (1992) Pricing options on risky assets in a stochastic interest rate economy. *Math. Finance* 2, 217–237.

[13] Amin, K., Khanna, A. (1994) Convergence of American option values from discrete- to continuous-time financial models. *Math. Finance* 4, 289–304.

[14] Amin, K., Morton, A. (1994) Implied volatility functions in arbitrage-free term structure models. *J. Finan. Econom.* 35, 141–180.

[15] Ansel, J.-P., Stricker, C. (1992) Lois de martingale, densités et décomposition de Föllmer Schweizer. *Ann. Inst. H. Poincaré Probab. Statist.* 28, 375–392.

[16] Ansel, J.-P., Stricker, C. (1993) Unicité et existence de la loi minimale. In: *Lecture Notes in Math. 1557.* Springer, Berlin Heidelberg New York, pp. 22–29.

[17] Ansel, J.-P., Stricker, C. (1994) Couverture des actifs contingents. *Ann. Inst. H.Poincaré Probab. Statist.* 30, 303–315.

[18] Arak, M., Goodman, L.S. (1987) Treasury bond futures: valuing the delivery options. *J. Futures Markets* 7, 269–286.

[19] Arrow, K. (1964) The role of securities in the optimal allocation of risk-bearing. *Rev. Econom. Stud.* 31, 91–96.

[20] Arrow, K. (1970) *Essays in the Theory of Risk Bearing.* North-Holland, London.

[21] Artzner, P. (1996) On the numeraire portfolio. To appear in *Mathematics of Derivative Securities.* M.Dempster and S.Pliska, eds. Cambridge University Press, Cambridge.

[22] Artzner, P., Delbaen, F. (1989) Term structure of interest rates: the martingale approach. *Adv. in Appl. Math.* 10, 95–129.

[23] Artzner, P., Delbaen, F. (1992) Credit risk and prepayment option. *ASTIN Bull.* 22, 81–96.

[24] Artzner, P., Delbaen, F. (1995) Default risk insurance and incomplete markets. *Math. Finance* 5, 187-195.

[25] Artzner, P., Heath, D. (1995) Approximate completeness with multiple martingale measures. *Math. Finance* 5, 1–11.

[26] Asay, M., Edelberg, C. (1986) Can a dynamic strategy replicate the returns of an option? *J. Futures Markets* 6, 63–70.

[27] Avallaneda, M., Parás, A. (1994) Dynamic hedging portfolios for derivative securities in the presence of large transaction costs. *Appl. Math. Finance* 1, 165–194.

[28] Avallaneda, M., Parás, A. (1996) Portfolios of derivative securities: the Lagrangian uncertain volatility model. *Appl. Math. Finance* 3, 23–51.

[29] Avallaneda, M., Levy A., Parás, A. (1995) Pricing and hedging derivative securities in markets with uncertain volatilities. *Appl. Math. Finance* 2, 73–88.

[30] Babbs, S. (1990) A family of Itô process models for the term structure of interest rates. Working paper, University of Warwick.

[31] Babbs, S., Webber, N.J. (1993) A theory of the term structure with an official short rate. Working paper.

[32] Bachelier, L. (1900) Théorie de la spéculation. *Ann. Sci École Norm. Sup.* 17 (1900), 21–86. [English translation in: *The Random Character of Stock Market Prices,* P.Cootner, ed. MIT Press, Cambridge (Mass.) 1964, pp. 17–78.]

[33] Back, K. (1991) Asset pricing for general processes. *J. Math. Econom.* 20, 371–395.

[34] Back, K., Pliska, S. (1990) On the fundamental theorem of asset pricing with an infinite state space. *J. Math. Econom.* 20, 1–18.

[35] Bailey, W., Stulz, R. (1989) The pricing of stock index options in a general equilibrium model. *J. Finan. Quant. Anal.* 24, 1–12.

[36] Bajeux-Besnainou, I., Rochet, J.-C. (1996) Dynamic spanning: are options an appropriate instrument. *Math. Finance* 6, 1–16.

[37] Bakshi, G., Cao, C., Chen, Z. (1996) Option pricing and hedging performance under stochastic volatility and stochastic interest rates. Working paper.

[38] Ball, C.A., Torous, W.N. (1983a) A simplified jump process for common stock returns. *J. Finan. Quant. Anal.* 17, 53–66.

[39] Ball, C.A., Torous, W.N. (1983b) Bond price dynamics and options. *J. Finan. Quant. Anal.* 18, 517–531.

[40] Ball, C.A., Torous, W.N. (1984) The maximum likelihood estimation of security price volatility: theory, evidence and application to option pricing. *J. Business* 57, 97–112.

[41] Ball, C.A., Torous, W.N. (1985) On jumps in common stock prices and their impact on call option pricing. *J. Finance* 40, 155–173.

[42] Ball, C.A., Torous, W.N. (1986) Futures options and the volatility of futures prices. *J. Finance* 41, 857–870.

[43] Barles, G., Soner, M.H. (1997) Option pricing with transaction costs and a nonlinear Black-Scholes equation. To appear in *Finance and Stochastics.*

[44] Barles, G., Burdeau, J., Romano, M., Samsœn, N. (1993) Estimation de la frontière libre des options américaines au voisinage de l'échéance. *C.R. Acad. Sci. Paris, Série I* 316, 171–174.

[45] Barles, G., Burdeau, J., Romano, M., Samsœn, N. (1995) Critical stock price near expiration. *Math. Finance* 5, 77–95.

[46] Barone-Adesi, G., Elliott, R.J. (1991) Approximations for the values of American options. *Stochastic Anal. Appl.* 9, 115–131.

[47] Barone-Adesi, G., Whaley, R.E. (1986) The valuation of American call options and the expected ex-dividend stock price decline. *J. Finan. Econom.* 17, 91–111.

[48] Barone-Adesi, G., Whaley, R.E. (1987) Efficient analytic approximation of American option values. *J. Finance* 42, 301–320.

[49] Bardhan, I., Chao, X. (1993) Pricing options on securities with discontinuous returns. *Stochastic Process. Appl.* 48, 123–137.

[50] Bardhan, I., Chao, X. (1995) Martingale analysis for assets with discontinuous returns. *Math. Oper. Res.* 20, 243–256.

[51] Barndorff-Nielsen, O.E., Rejman, A., Weron, A., Weron, R. (1996) Option pricing for asset returns described by generalized hyperbolic distributions: discrete versus continuous models. Working paper.

[52] Barraquand, J., Pudet, T. (1996) Pricing of American path-dependent contingent claims. *Math. Finance* 6, 17-51.

[53] Barron, E.M., Jensen, R. (1990) A stochastic control approach to the pricing of options. *Math. Oper. Res.* 15, 49–79.

[54] Barron, E.M., Jensen, R. (1991) Total risk aversion and the pricing of options. *Appl. Math. Optim.* 23, 51–76.

[55] Baxter, M.W. (1995) General interest rate models and the universality of HJM. Preprint, University of Cambridge.

[56] Baxter, M.W., Rennie A. (1996) *Financial Calculus. An Introduction to Derivative Pricing.* Cambridge University Press, Cambridge.

[57] Beck, T.M. (1993) Black-Scholes revisited: some important details. *Finan. Review* 28, 77–90.

[58] Beckers, S. (1980) The constant elasticity of variance model and its implications for option pricing. *J. Finance* 35, 661–673.

[59] Beckers, S. (1981) Standard deviations implied in option prices as predictors of future stock price variability. *J. Banking Finance* 5, 363–381.

[60] Beckers, S. (1983) Variances of security price returns based on high, low, and closing prices. *J. Business* 56, 97–112.

[61] Benninga, S., Blume, M. (1985) On the optimality of portfolio insurance. *J. Finance* 40, 1341–1352.

[62] Bensaid, B., Lesne, J.-P., Pagès, H., Scheinkman, J. (1992) Derivative asset pricing with transaction costs. *Math. Finance* 2, 63–68.

[63] Bensoussan, A. (1984) On the theory of option pricing. *Acta Appl. Math.* 2, 139–158.

[64] Bensoussan, A., Elliott, R.J. (1995) Attainable claims in a Markov model. *Math. Finance* 5, 121–131.

[65] Bensoussan, A., Lions, J.-L. (1978) *Applications des inéquations variationelles en contrôle stochastique.* Dunod, Paris.

[66] Bensoussan, A., Crouhy, M., Galai, D. (1995) Stochastic equity volatility related to the leverage effect I: equity volatility behaviour. *Appl. Math. Finance* 1, 63-85.

[67] Bensoussan, A., Crouhy, M., Galai, D. (1995) Stochastic equity volatility related to the leverage effect II: valuation of European equity options and warrants. *Appl. Math. Finance* 2, 43-59.

[68] Bergman, Y.Z. (1982) Pricing of contingent claims in perfect and imperfect markets. Doctoral dissertation, University of California, Berkeley.

[69] Bergman, Y.Z., Grundy, D.B., Wiener, Z. (1996) General properties of option prices. Working paper, University of Pennsylvania.

[70] Bhattacharya, S., Constantinides, G., eds. (1989a) *Theory of Valuation, Frontiers of Modern Financial Theory. Vol.1.* Rowman and Littlewood, Totowa (New Jersey).

[71] Bhattacharya, S., Constantinides, G., eds. (1989b) *Financial Markets with Incomplete Information, Frontiers of Modern Financial Theory. Vol.2.* Rowman and Littlewood, Totowa (New Jersey).

[72] Biais, B., Rochet, J.-C., (1997) Risk sharing, adverse selection and market structure. To appear in: *Proceedings CIME Conference, Bressanone 1996,* W.Runggaldier, ed. *Lecture Notes in Math.* Springer, Berlin Heidelberg New York.

[73] Bibby, B., Sørensen, M. (1997) A hyperbolic diffusion model for stock prices. To appear in *Finance and Stochastics.*

[74] Bick, A. (1987) On the consistency of the Black-Scholes model with a general equilibrium model. *J. Finan. Quant. Anal.* 22, 259–275.

[75] Bick, A. (1990) On viable diffusion price processes of the market portfolio. *J. Finance* 45, 673–689.

[76] Bick, A., Willinger, W. (1994) Dynamic spanning without probabilities. *Stoch. Process. Appl.* 50, 349-374.

[77] Bierwag, G.O. (1977) Immunization, duration and the term structure of interest rates. *J. Finan. Quant. Anal.* 12, 725–742.

[78] Bierwag, G.O. (1987) *Duration analysis. Managing interest rate risk.* Ballinger Publ. Co., Cambridge (Mass.)

[79] Bierwag, G.O., Kaufman, G.G. (1983) Immunization strategies for funding multiple liabilities. *J. Finan. Quant. Anal.* 17, 113–124.

[80] Bierwag, G.O., Kaufman, G.G. (1988) Duration of non-default-free securities. *Finan. Analysts J.* 44, 39–46.

[81] Bierwag, G.O., Kaufman, G.G., Khang, C. (1978) Duration and bond portfolio analysis: an overview. *J. Finan. Quant. Anal.* 13, 671–681.

[82] Bierwag, G.O., Kaufman, G.G., Toevs, A.L. (1983) *Innovations in Bond Portfolio Management: Duration Analysis and Immunization.* Bierwag, G.O., Kaufman, G.G., Toevs, A.L., eds. JAI Press, Greenwich (Conn.)

[83] Biger, N., Hull, J. (1983) The valuation of currency options. *Financial Management* 12, 24–28.

[84] Björk, T. (1995) On the term structure of discontinuous interest rates. *Survey Industr. Appl. Math.* 2, 626–657.

[85] Björk, T. (1997) Interest rate theory. To appear in: *Proceedings CIME Conference, Bressanone 1996,* W.Runggaldier, ed. *Lecture Notes in Math.* Springer, Berlin Heidelberg New York.

[86] Björk, T., Di Masi, G., Kabanov, Y., Runggaldier, W. (1997a) Towards a general theory of bond market. To appear in *Finance and Stochastics.*

[87] Björk, T., Kabanov, Y., Runggaldier, W. (1997b) Bond market structure in the presence of marked point processes. To appear in *Math. Finance.*

[88] Black, F. (1972) Capital market equilibrium with restricted borrowing. *J. Business* 45, 444–454.

[89] Black, F. (1975) Fact and fantasy in the use of options. *Finan. Analysts J.* 31(4), 36–41, 61–72.

[90] Black, F. (1976a) Studies of stock price volatility changes. In: *Proceedings of the 1976 Meetings of the American Statistical Association,* pp. 177–181.

[91] Black, F. (1976b) The pricing of commodity contracts. *J. Finan. Econom.* 3, 167–179.

[92] Black, F. (1986) Noise. *J. Finance* 41, 529–543.

[93] Black, F., Cox, J. (1976) Valuing corporate securities: some effects of bond indenture provisions. *J. Finance* 31, 351–367.

[94] Black, F., Karasinski, P. (1991) Bond and option pricing when short rates are lognormal. *Finan. Analysts J.* 47(4), 52–59.

[95] Black, F., Scholes, M. (1972) The valuation of option contracts and a test of market efficiency. *J. Finance* 27, 399–417.

[96] Black, F., Scholes, M. (1973) The pricing of options and corporate liabilities. *J. Political Econom.* 81, 637–654.

[97] Black, F., Jensen, M., Scholes, M. (1972) The capital asset pricing model: some empirical tests. In: *Studies in the Theory of Capital Markets,* M.Jensen, ed. Praeger, New York, pp. 79–121.

[98] Black, F., Derman, E., Toy, W. (1990) A one-factor model of interest rates and its application to Treasury bond options. *Finan. Analysts J.* 46(1), 33–39.

[99] Blattberg, R.C., Gonedes, N.J. (1974) A comparison of the stable and Student distributions as statistical models for stock prices. *J. Business* 47, 244–280.

[100] Blomeyer, E.C. (1986) An analytic approximation for the American put price for options on stock with dividends. *J. Finan. Quant. Anal.* 21, 229–233.

[101] Blomeyer, E.C., Johnson, H. (1988) An empirical examination of the pricing of American put options. *J. Finan. Quant. Anal.* 23, 13–22.

[102] Bodie, Z., Taggart, R.A. (1978) Future investment opportunities and the value of call provision on a bond. *J. Finance* 33, 1187–1200.

[103] Bodurtha, J.N., Courtadon, G.R. (1987) Tests of an American option pricing model on the foreign currency options market. *J. Finan. Quant. Anal.* 22, 153–167.

[104] Bollerslev, T., Chou, R., Kroner, K. (1992) ARCH modeling in finance: a review of the theory and empirical evidence. *J. Econometr.* 52, 5–59.

[105] Bookstaber, R.M. (1981) *Option Pricing and Strategies in Investing.* Addison-Wesley, Reading (Mass.)

[106] Bookstaber, R., Clarke, R. (1984) Option portfolio strategies: measurement and evaluation. *J. Business* 57, 469–492.

[107] Bookstaber, R., Clarke, R. (1985) Problems in evaluating the performance of portfolios with options. *Finan. Analysts J.* 41(1), 48–62.

[108] Bookstaber, R., McDonald, J.B. (1987) A general distribution for describing security price returns. *J. Business* 60, 401–424.

[109] Bookstaber, R., Jacob, D.P., Langsam, J.A. (1986) The arbitrage-free pricing of options on interest sensitive instruments. *Adv. in Futures Options Res.* 1, 1–23

[110] Bouaziz, L., Briys, E., Crouhy, M. (1994) The pricing of forward-starting asian options. *J. Banking Finance* 18, 823–839.

[111] Bouleau, N., Lamberton, D. (1989) Residual risks and hedging strategies in Markovian markets. *Stochastic Process. Appl.* 33, 131–150.

[112] Boyle, P.P. (1977) Options: a Monte-Carlo approach. *J. Finan. Econom.* 4, 323–338.

[113] Boyle, P.P. (1986) Option valuation using a three jump process. *Internat. Options J.* 3, 7–12.

[114] Boyle, P.P. (1988) A lattice framework for option pricing with two state variables. *J. Finan. Quant. Anal.* 23, 1–12.

[115] Boyle, P.P. (1989) The quality option and timing option in futures contracts. *J. Finance* 44, 101–113.

[116] Boyle, P.P., Ananthanarayanan, A.L. (1977) The impact of variance estimation in option valuation models. *J. Finan. Econom.* 5, 375–387.

[117] Boyle, P.P., Emanuel, D. (1980) Discretely adjusted option hedges. *J. Finan. Econom.* 8, 259–282.

[118] Boyle, P.P. and Tse, Y.K. (1990) An algorithm for computing values of options on the maximum or minimum of several assets. *J. Finan. Quant. Anal.* 25, 215–227.

[119] Boyle, P.P. and Vorst, T. (1992) Option replication in discrete time with transaction costs. *J. Finance* 47, 271–293.

[120] Boyle, P.P., Evnine, J., Gibbs, S. (1989) Numerical evaluation of multivariate contingent claims. *Rev. Finan. Stud.* 2, 241–250.

[121] Brace, A., Musiela, M. (1994a) A multifactor Gauss Markov implementation of Heath, Jarrow, and Morton. *Math. Finance* 4, 259–283.

[122] Brace, A., Musiela, M. (1995) Duration, convexity and Wiener chaos. Working paper, University of New South Wales.

[123] Brace, A., Musiela, M. (1996) Swap derivatives in a Gaussian HJM framework. To appear in: *Mathematics of Derivative Securities.* M.Dempster and S.Pliska, eds. Cambridge University Press, Cambridge.

[124] Brace, A., Gątarek, D., Musiela, M. (1997) The market model of interest rate dynamics. To appear in *Math. Finance.*

[125] Breeden, D. (1979) An intertemporal asset pricing model with stochastic consumption and investment opportunities. *J. Finan. Econom.* 7, 265–296.

[126] Breeden, D., Litzenberger, R. (1978) Prices of state-contingent claims implicit in option price. *J. Business* 51, 621–651.

[127] Brennan, M.J. (1970) Taxes, market valuation and corporate financial policy. *National Tax J.* 23, 417–427.

[128] Brennan, M.J. (1979) The pricing of contingent claims in discrete time models. *J. Finance* 34, 53–68.

[129] Brennan, M.J., Schwartz, E.S. (1977a) The valuation of American put options. *J. Finance* 32, 449–462.

[130] Brennan, M.J., Schwartz, E.S. (1977b) Convertible bonds: valuation and optimal strategies for call and conversion. *J. Finance* 32, 1699–1715.

[131] Brennan, M.J., Schwartz, E.S. (1977c) Savings bonds, retractable bonds and callable bonds. *J. Finan. Econom.* 5, 67–88.

[132] Brennan, M.J., Schwartz, E.S. (1978a) Finite-difference methods and jump processes arising in the pricing of contingent claims: a synthesis. *J. Finan. Quant. Anal.* 13, 462–474.

[133] Brennan, M.J., Schwartz, E.S. (1978b) Corporate income taxes, valuation and the problem of optimal capital structure. *J. Business* 51, 103–114.

[134] Brennan, M.J., Schwartz, E.S. (1979a) A continuous-time approach to the pricing of bonds. *J. Bank. Finance* 3, 135–155.

[135] Brennan, M.J., Schwartz, E.S. (1979b) Conditional predictions of bond prices and returns. *J. Finance* 35, 405–416.

[136] Brennan, M.J., Schwartz, E.S. (1980) Analyzing convertible bonds. *J. Finan. Quant. Anal.* 15, 907–929.

[137] Brennan, M.J., Schwartz, E.S. (1982) An equilibrium model of bond pricing and a test of market efficiency. *J. Finan. Quant. Anal.* 17, 301–329.

[138] Brenner, M., Galai, D. (1986) Implied interest rates. *J. Business* 59, 493–507.

[139] Brenner, M., Courtadon, G., Subrahmanyan, M. (1985) Options on the spot and options on futures. *J. Finance* 40, 1303–1317.

[140] Briys, E., Crouhy, M., Schöbel, R. (1991) The pricing of default-free interest rate cap, floor, and collar agreements. *J. Finance* 46, 1879–1892.

[141] Broadie, M., Detemple, J. (1995) American capped call options on dividend-paying assets. *Rev. Finan. Studies* 8, 161–191.

[142] Broadie, M., Detemple, J. (1996) American option valuation: new bounds, approximations, and a comparison of existing methods. *Rev. Finan. Studies* 9, 1211-1250.

[143] Broadie, M., Detemple, J. (1997a) The valuation of American options on multiple assets. To appear in *Math. Finance.*

[144] Broadie, M., Detemple, J. (1997b) Recent advances in American option pricing. To appear in *Numerical Methods in Financial Mathematics.* L.C.G.Rogers and D.Talay, eds. Cambridge University Press, Cambridge.

[145] Broadie, M., Glasserman, P. (1997) Pricing American-style securities using simulation. To appear in *J. Econom. Dynamics Control.*

[146] Broadie, M., Cvitanić, J., Soner, M. (1996) Optimal replication of contingent claims under portfolio constraints. Working paper, Columbia University.

[147] Brown, S.J., Dybvig, P.H. (1986) The empirical implications of the Cox, Ingersoll and Ross theory of the term structure of interest rates. *J. Finance* 41, 617–632.

[148] Brown, R.H., Schaefer, S.M. (1994) The term structure of real interest rates and the Cox, Ingersoll, and Ross model. *J. Finan. Econom.* 35, 3–42.

[149] Buckdahn, R. (1995) Backward stochastic differential equations. Option hedging under additional cost. In: *Seminar on Stochastic Analysis, Random Fields and Applications,* E.Bolthausen , eds. Birkhäuser, Boston Basel Berlin, pp. 307–317.

[150] Bunch, D., Johnson, H.E. (1992) A simple and numerically efficient valuation method for American puts, using a modified Geske-Johnson approach. *J. Finance* 47, 809–816.

[151] Burghardt, G., Hoskins, B. (1995) A question of bias. *Risk* 8(3), 63–70.

[152] Butler, J.S., Schachter, B. (1986) Unbiased estimation of the Black/Scholes formula. *J. Finan. Econom.* 15, 341–357.

[153] Büttler, H.-J., Waldvogel, J. (1996) Pricing callable bonds by means of Green's function. *Math. Finance* 6, 55–88.

[154] Cakici, N., Chatterjee, S. (1991) Pricing stock index futures with stochastic interest rates. *J. Futures Markets* 11, 441–452.

[155] Campbell, J.Y. (1986) A defense of traditional hypotheses about the term structure of interest rates. *J. Finance* 41, 183–193.

[156] Carleton, W.T., Cooper, I.A. (1976) Estimation and uses of the term structure of interest rates. *J. Finance* 31, 1067–1083.

[157] Carr, P. (1987) Treasury bond futures and the quality option. Working paper, UCLA.

[158] Carr, P. (1995) Two extensions to barrier option valuation. *Appl. Math. Finance* 2, 173–209.

[159] Carr, P., Chen, R.R. (1993) Valuing bond futures and the quality option. Working paper, Cornell University.

[160] Carr, P., Faguet, D. (1994) Fast accurate valuation of American options. Working paper, Cornell University.

[161] Carr, P., Jarrow, R. (1990) The stop-loss start-gain paradox and option valuation: a new decomposition into intrinsic and time value. *Rev. Finan. Stud.* 3, 469–492.

[162] Carr, P., Jarrow, R., Myneni, R. (1992) Alternative characterizations of American put options. *Math. Finance* 2, 87–106.

[163] Carr, P., Ellis, K., Gupta, V. (1997) Static hedging of exotic options. To appear in *J. Finance.*

[164] Carverhill, A.P. (1994) When is the short rate Markovian? *Math. Finance* 4, 305–312.

[165] Carverhill, A.P. (1995) A simplified exposition of the Heath, Jarrow and Morton model. *Stochastics Stochastics Rep.* 53, 227–240.

[166] Carverhill, A.P., Clewlow, L.J. (1990) Flexible convolution. *Risk* 3(4), 25–29.

[167] Carverhill, A.P., Pang, K. (1995) Efficient and flexible bond option valuation in the Heath, Jarrow and Morton framework. Working paper.

[168] Cass, D., Stiglitz, J. (1970) The structure of investor preferences and asset returns, and separability in portfolio allocation: a contribution to the pure theory of mutual funds. *J. Econom. Theory* 2, 122–160.

[169] Chamberlain, G. (1983) A characterization of the distributions that imply mean-variance utility functions. *J. Econom. Theory* 29, 185–201.

[170] Chamberlain, G. (1988) Asset pricing in multiperiod security markets. *Econometrica* 56, 1283–1300.

[171] Chambers, D.R., Carleton, W.T., Waldman, D.W. (1984) A new approach to estimation of the term structure of interest rates. *J. Finan. Quant. Anal.* 19, 233–252.

[172] Chan, K.C., Karolyi, G.A., Longstaff, F.A., Sanders, A.B. (1992) The volatility of short-term interest rates: an empirical comparison of alternative models of the term structure of interest rates. *J. Finance* 47, 1209–1227.

[173] Chance, D. (1989) *An Introduction to Options and Futures.* Dryden Press, Orlando.

[174] Chance, D., Hemler, M. (1992) The impact of delivery options on futures prices: a survey. *J. Futures Markets* 13, 127–155.

[175] Chatelain, M., Stricker, C. (1994) On componentwise and vector stochastic integration. *Math. Finance* 4, 57–65.

[176] Chatelain, M., Stricker, C. (1995) Componentwise and vector stochastic integration with respect to certain multi-dimensional continuous local martingales. In: *Seminar on Stochastic Analysis, Random Fields and Applications,* E.Bolthausen , eds. Birkhäuser, Boston Basel Berlin, pp. 319–325.

[177] chennnxChen (1996) Chen, L. (1996) *Interest Rate Dynamics, Derivatives Pricing, and Risk Management. Lecture Notes in Econom. and Math. Systems 435.* Springer, Berlin Heidelberg New York.

[178] Chen, N., Johnson, H. (1985) Hedging options. *J. Finan. Econom.* 14 , 309–316.

[179] Chen, R., Scott, L. (1992) Pricing interest rate options in a two-factor Cox-Ingersoll-Ross model of the term structure. *Rev. Finan. Stud.* 5, 613–636.

[180] Cheng, B.N., Rachev, S.T. (1995) Multivariate stable futures prices. *Math. Finance* 5, 133–153.

[181] Cheng, S.T. (1991) On the feasibility of arbitrage-based option pricing when stochastic bond price processes are involved. *J. Econom. Theory* 53, 185–198.

[182] Cherubini, U., Esposito, M. (1995) Options *in* and *on* interest rate futures contracts: results from martingale pricing theory. *Appl. Math. Finance* 2, 1–15.

[183] Chesney, M., Scott, L. (1989) Pricing European currency options: a comparison of the modified Black-Scholes model and a random variance model. *J. Finan. Quant. Anal.* 24, 267–284.

[184] Chesney, M., Elliott, R., Gibson, R. (1993a) Analytical solutions for the pricing of American bond and yield options. *Math. Finance* 3, 277–294.

[185] Chesney, M., Elliott, R.J., Madan, D., Yang, H. (1993b) Diffusion coefficient estimation and asset pricing when risk premia and sensitivities are time varying. *Math. Finance* 3, 85–99.

[186] Chesney, M., Geman, H., Jeanblanc-Picqué, M., Yor, M. (1996) Some combinations of Asian, Parisian and barrier options. To appear in: *Mathematics of Derivative Securities.* M.Dempster and S.Pliska, eds. Cambridge University Press, Cambridge.

[187] Chesney, M., Jeanblanc-Picqué, M., Yor, M. (1997) Brownian excursions and Parisian barrier options. To appear in *Adv. in Appl. Probab.*

[188] Cheuk, T.H.F., Vorst, T.C.F. (1996) Complex barrier options. *J. Portfolio. Manag.* 4, 8–22.

[189] Cheyette, O. (1990) Pricing options on multiple assets. *Adv. in Futures Options Res.* 4, 69–81.

[190] Cho, D.C., Frees, E.W. (1988) Estimating the volatility of discrete stock prices. *J. Finance* 43, 451–466.

[191] Christensen, P.O., Sørensen, B.G. (1994) Duration, convexity, and time value. *J. Portfolio Manag.* 20 (2), 51–60.

[192] Christie, A. (1982) The stochastic behaviour of common stock variances: value, leverage and interest rate effects. *J. Finan. Econom.* 10, 407–432.

[193] Christopeit, N., Musiela, M. (1994) On the existence and characterization of arbitrage-free measures in contingent claim valuation. *Stochastic Anal. Appl.* 12, 41–63.

[194] Chung, K.L., Williams, R. (1983) *Introduction to Stochastic Integration.* Birkhäuser, Basel Berlin Boston.

[195] Chung, Y.P. (1991) A transaction data test of stock index futures market efficiency and index arbitrage profitability. *J. Finance* 46, 1791–1809.

[196] Cohen, H. (1991) Testing pricing models for the Treasury bond futures contracts. Doctoral dissertation, Cornell University, Ithaca.

[197] Cohen, H. (1995) Isolating the wild card option. *Math. Finance* 5, 155–165.

[198] Colwell, D.B., Elliott, R.J., Kopp, P.E. (1991) Martingale representation and hedging policies. *Stochastic Process. Appl.* 38, 335–345.

[199] Connors, G. (1987) Notes on the arbitrage pricing theory. In: *Frontiers of Financial Theory,* G.M.Constantinides and S.Bhattacharya, eds. Rowman and Littlewood, Totowa (New Jersey).

[200] Constantinides, G.M. (1980) Admissible uncertainty in the intertemporal asset pricing model. *J. Finan. Econom.* 8, 71–86.

[201] Constantinides, G.M. (1986) Capital market equilibrium with transactions costs. *J. Political Econom.* 94, 842–862.

[202] Constantinides, G.M. (1987) Warrant exercise and bond conversion in competitive markets. *J. Finan. Econom.* 13, 371–398.

[203] Constantinides, G.M. (1992) A theory of the nominal term structure of interest rates. *Rev. Finan. Stud.* 5, 531–552.

[204] Constantinides, G.M. (1993) Option pricing bounds with transaction costs. Working paper, University of Chicago.

[205] Constantinides, G.M., Bhattacharya, S., eds. (1987) *Frontiers of Financial Theory.* Rowman and Littlewood, Totowa, New Jersey.

[206] Constantinides, G.M., Ingersoll, J.E. (1984) Optimal bond trading with personal taxes. *J. Finan. Econom.* 13, 299–351.

[207] Conze, A., Viswanathan (1991) Path dependent options: the case of lookback options. *J. Finance* 46, 1893–1907.

[208] Cooper, I., Mello, A. (1991) The default risk of swaps. *J. Finance* 46, 597–620.

[209] Cootner, P., ed. (1964) *The Random Character of Stock Market Prices.* MIT Press, Cambridge (Mass.)

[210] Cornell, B. (1981) Taxes and the pricing of stock index futures: empirical results. *J. Futures Markets* 1, 303–316.

[211] Cornell, B., French, K.R. (1983a) The pricing of stock index futures. *J. Futures Markets* 3, 1–14.

[212] Cornell, B., French, K.R. (1983b) Taxes and the pricing of stock index futures. *J. Finance* 38, 675–694.

[213] Cornell, B., Reinganum, M.R. (1991) Forward and futures prices: evidence from the foreign exchange markets. *J. Finance* 36, 1035–1045.

[214] Courtadon, G. (1982a) The pricing of options on default-free bonds. *J. Finan. Quant. Anal.* 17, 75–100.

[215] Courtadon, G. (1982b) A more accurate finite-difference approximation for the valuation of options. *J. Finan. Quant. Anal.* 18, 697–703.

[216] Cox, J.C. (1975) Notes on options pricing I: constant elasticity of variance diffusions. Working paper, Stanford University.

[217] Cox, J.C., Huang, C.-F. (1989) Optimal consumption and portfolio policies when asset prices follow a diffusion process. *J. Econom. Theory* 49, 33–83.

[218] Cox, J.C., Ross, S.A. (1975) The pricing of options for jump processes. Working Paper, University of Pennsylvania.

[219] Cox, J.C., Ross, S.A. (1976a) A survey of some new results in financial options pricing theory. *J. Finance* 31, 382–402.

[220] Cox, J.C., Ross, S.A. (1976b) The valuation of options for alternative stochastic processes. *J. Finan. Econom.* 3, 145–166.

[221] Cox, J.C., Rubinstein, M. (1983) A survey of alternative option-pricing models. In: *Option Pricing, Theory and Applications.* M.Brenner, ed. Toronto, pp. 3–33.

[222] Cox, J.C., Rubinstein, M. (1985) *Options Markets.* Prentice-Hall, Englewood Cliffs (New Jersey).

[223] Cox, J.C., Ross, S.A., Rubinstein, M. (1979a) Option pricing: a simplified approach. *J. Finan. Econom.* 7, 229–263.

[224] Cox, J.C., Ingersoll, J.E., Ross, S.A. (1979b) Duration and the measurement of basic risk. *J. Business* 52, 51–61.

[225] Cox, J.C., Ingersoll, J.E., Ross, S.A. (1981a) A re-examination of traditional hypotheses about the term structure of interest rates. *J. Finance* 36, 769–799.

[226] Cox, J.C., Ingersoll, J.E., Ross, S.A. (1981b) The relation between forward prices and futures prices. *J. Finan. Econom.* 9, 321–346.

[227] Cox, J.C., Ingersoll, J.E., Ross, S.A. (1985a) An intertemporal general equilibrium model of asset prices. *Econometrica* 53, 363–384.

[228] Cox, J.C., Ingersoll, J.E., Ross, S.A. (1985b) A theory of the term structure of interest rates. *Econometrica* 53, 385–407.

[229] Cvitanić, J. (1996) Nonlinear financial markets: hedging and portfolio optimization. To appear in: *Mathematics of Derivative Securities.* M.Dempster and S.Pliska, eds. Cambridge University Press, Cambridge.

[230] Cvitanić, J. (1997) Optimal trading under constraints. To appear in: *Proceedings CIME Conference, Bressanone 1996,* W.Runggaldier, ed. *Lecture Notes in Math.* Springer, Berlin Heidelberg New York.

[231] Cvitanić, J., Karatzas, I. (1992) Convex duality in constrained portfolio optimization. *Ann. Appl. Probab.* 2, 767–818.

[232] Cvitanić, J., Karatzas, I. (1993) Hedging contingent claims with constrained portfolios. *Ann. Appl. Probab.* 3, 652–681.

[233] Cvitanić, J., Karatzas, I. (1996) Hedging and portfolio optimization under transaction costs: a martingale approach. *Math. Finance* 6, 133-165.

[234] Cvitanić, J., Ma, J. (1996) Hedging options for a large investor and Forward-Backward SDE's. *Ann. Appl. Probab.* 6, 370–398.

[235] Cutland, N., Kopp, E., Willinger, W. (1991) A nonstandard approach to option pricing. *Math. Finance* 1, 1–38.

[236] Cutland, N., Kopp, E., Willinger, W. (1993a) A nonstandard treatment of options driven by Poisson processes. *Stochastic Process. Appl.* 42, 115–133.

[237] Cutland, N., Kopp, E., Willinger, W. (1993b) From discrete to continuous financial models: new convergence results for option pricing. *Math. Finance* 3, 101–123.

[238] Cutland, N., Kopp, E., Willinger, W. (1995) Stock price returns and the Joseph effect: a fractional version of the Black-Scholes model. In: *Seminar on Stochastic Analysis, Random Fields and Applications,* E.Bolthausen , eds. Birkhäuser, Boston Basel Berlin, pp. 327–351.

[239] Cutland, N.J., Kopp, P.E., Willinger, W., Wyman, M.C. (1996) Convergence of Snell envelopes and critical prices in the American put. To appear in *Mathematics of Derivative Securities,* M.Dempster and S.Pliska, eds. Cambridge University Press, Cambridge.

[240] Dalang, R.C., Morton, A., Willinger, W. (1990) Equivalent martingale measures and no-arbitrage in stochastic securities market model. *Stochastics Stochastics Rep.* 29, 185–201.

[241] Das, S. (1994) *Swaps and Financial Derivatives: The Global Reference to Products, Pricing, Applications and Markets,* 2d ed. Law Book Co., Sydney.

[242] Das, S., Tufano, P. (1995) Pricing credit-sensitive debt when interest rates, credit ratings and credit spreads are stochastic. Working paper, Harvard Business School.

[243] Dassios, A. (1995) The distribution of the quantile of a Brownian motion with drift and the pricing of related path-dependent options. *Ann. Appl. Probab.* 5, 389–398.

[244] Davis, M.H.A. (1988) Local time on the stock exchange. In: *Stochastic Calculus in Application,* J.R.Norris, ed. Longman Scientific and Technical, Harrow (Essex), pp. 4–28.

[245] Davis, M.H.A., Clark, J.M.C. (1994) A note on super-replicating strategies. *Phil. Trans. Roy. Soc. London Ser.A* 347, 485–494.

[246] Davis, M.H.A., Norman, A.R. (1990) Portfolio selection with transaction costs. *Math. Oper. Res.* 15, 676–713.

[247] Davis, M.H.A., Panas, V.P. (1994) The writing price of a European contingent claim under proportional transaction costs. *Comp. Appl. Math.* 13, 115–157.

[248] Davis, M.H.A., Panas, V.P., Zariphopoulou, T. (1993) European option pricing with transaction costs. *SIAM J. Control Optim.* 31, 470–493.

[249] Decamps, J.-P., Rochet, J.-C. (1993) A variational approach for pricing options and corporate bonds. *Journées Internationales de Finance, IGR-AFFI,* La Baule, June 1993.

[250] Deelstra, G., Delbaen, F. (1995a) Long-term returns in stochastic interest rate models. *Insurance Math. Econom.* 17, 163–169.

[251] Deelstra, G., Delbaen, F. (1995b) Long-term returns in stochastic interest rate models: convergence in law. *Stochastics Stochastics Rep.* 55, 253–277.

[252] Delbaen, F. (1992) Representing martingale measures when asset prices are continuous and bounded. *Math. Finance* 2, 107–130.

[253] Delbaen, F. (1993) Consols in CIR model. *Math. Finance* 3, 125–134.

[254] Delbaen, F., Haezendonck, J. (1989) A martingale approach to premium calculation principles in an arbitrage free market. *Insurance Math. Econom.* 8, 269–277.

[255] Delbaen, F., Schachermayer, W. (1994a) Arbitrage and free lunch with bounded risk for unbounded continuous processes. *Math. Finance* 4, 343–348.

[256] Delbaen, F., Schachermayer, W. (1994b) A general version of the fundamental theorem of asset pricing. *Math. Ann.* 300, 463–520.

[257] Delbaen, F., Schachermayer, W. (1995a) Arbitrage possibilities in Bessel processes and their relations to local martingales. *Probab. Theory Rel. Fields* 102, 357–366.

[258] Delbaen, F., Schachermayer, W. (1995b) The no-arbitrage property under a change of numéraire. *Stochastics Stochastics Rep.* 53, 213–226.

[259] Delbaen, F., Schachermayer, W. (1995c) The existence of absolutely continuous local martingale measures. *Ann. Appl. Probab.* 5, 926–945.

[260] Delbaen, F., Schachermayer, W. (1996) The variance-optimal martingale measure for continuous processes. *Bernoulli* 2, 81–105.

[261] Delbaen F., Monat, P., Schachermayer, W., Schweizer, M., Stricker, C. (1997) Weighted norm inequalities and hedging in incomplete markets. To appear in *Finance and Stochastics.*

[262] Dellacherie, C., Meyer, P.-A. (1980) *Probabilités et potentiel. Théorie des martingales.* Hermann, Paris.

[263] Demsetz, H. (1968) The cost of transacting. *Quart. J. Econom.* 82, 33–53.

[264] Dengler, H. (1993) Poisson approximations to continuous security market models. Working paper, Cornell University.

[265] Derman, E., Kani, I., Chriss, N. (1996) The volatility smile and its implied tree. *J. Derivatives* 3/4, 7–22.

[266] Derman, E., Karasinski, P., Wecker, J. (1990) Understanding guaranteed exchange-rate contracts in foreign stock investments. Working paper, Goldman Sachs.

[267] Dermody, J.C., Prisman, E.Z. (1993) No arbitrage and valuation in markets with real transaction costs. *J. Finan. Quant. Anal.* 28, 65–80.

[268] Dermody, J.C., Rockafellar, R.T. (1991) Cash stream valuation in the face of transaction costs and taxes. *Math. Financ.Sonnenschein, eds. Elsevier*, pp. 1615–1682.

[269] Duffie, D. (1996) *Dynamic Asset Pricing Theory.* 2d ed. Princeton University Press, Princeton.

[270] Duffie, D. (1996a) State-space models of the term stucture of interest rates. In: *Stochastic Analysis and Related Topics V,* H.Körezlioglu, B.Øksendal, A.Üstünel, eds. Birkhäuser, Boston Basel Berlin, pp. 41–67.

[271] Duffie, D. (1996b) Special repo rates. *J. Finance* 51, 493–526.

[272] Duffie, D., Epstein, L.G. (1992b) Stochastic differential utility. *Econometrica* 60, 353–394.

[273] Duffie, D., Glynn, P. (1996) Efficient Monte Carlo estimation of security prices. *Ann. Appl. Probab.* 5, 897–9

[274] Duffie, D., Harrison, J.M. (1993) Arbitrage pricing of Russian options and perpetual lookback options. *Ann. Appl. Probab.* 3, 641–649.

[275] Duffie, D., Huang, C.-F. (1985) Implementing Arrow-Debreu equilibria by continuous trading of few long-lived securities. *Econometrica* 53, 1337–1356.

[276] Duffie, D., Huang, C.-F. (1986) Multiperiod security markets with differential information; martingales and resolution times. *J. Math. Econom.* 15, 283–303.

[277] Duffie, D., Huang, M. (1996) Swap rates and credit quality. *J. Finance* 51, 921–949.

[278] Duffie, D., Jackson, M. (1990) Optimal hedging and equilibrium in a dynamic futures market. *J. Econom. Dynamics Control* 14, 21–33.

[279] Duffie, D., Kan, R. (1994) Multi-factor interest rate models. *Phil. Trans. Roy. Soc. London Ser. A* 347, 577–586.

[280] Duffie, D., Kan, R. (1996) A yield-factor model of interest rates. *Math. Finance* 6, 379–406.

[281] Duffie, D., Protter, P. (1992) From discrete to continuous time finance: weak convergence of the financial gain process. *Math. Finance* 2, 1–15.

[282] Duffie, D., Richardson, H.R. (1991) Mean-variance hedging in continuous time. *Ann. Appl. Probab.* 1, 1–15.

[283] Duffie, D., Singleton, K. (1993) Simulated moments estimation of Markov models of asset prices. *Econometrica* 61, 929–952.

[284] Duffie, D., Singleton, K. (1994a) Modeling term structures of defaultable bonds. Working paper, Stanford University.

[285] Duffie, D., Singleton, K. (1994b) An econometric model of the term structure of interest rate swap yields. Working paper, Stanford University.

[286] Duffie, D., Stanton, R. (1992) Pricing continuously resettled contingent claims. *J. Econom. Dynamics Control* 16, 561–573.

[287] Duffie, D., Ma, J., Yong, J. (1995a) Black's consol rate conjecture. *Ann. Appl. Probab.* 5, 356–382.

[288] Duffie, D., Schroder, M., Skiadas, C. (1995b) Recursive valuation of defaultable securities and the timing of resolution of uncertainty. Working paper, Northwestern University.

[289] Dufresne, D. (1990) The distribution of a perpetuity, with applications to risk theory and pension funding. *Scand. Actuarial J.* 39–79.

[290] Dumas, B., Luciano, E. (1991) An exact solution to a dynamic portfolio choice problem under transaction costs. *J. Finance* 46, 577–595.

[291] Dybvig, P.H. (1988) Bond and bond option pricing based on the current term structure. Working paper, Washington University.

[292] Dybvig, P., Huang, C.-F. (1988) Nonnegative wealth, absence of arbitrage, and feasible consumption plans. *Rev. Finan. Studies* 1, 377–401.

[293] Dybvig, P.H., Koo, H.K. (1995) Investment with taxes. Working paper.

[294] Dybvig, P.H., Ross, S.A. (1996) Tax clienteles and asset pricing. *J. Finance* 41, 751–763.

[295] Eberlein, E. (1992) On modeling questions in security valuation. *Math. Finance* 2, 17–32.

[296] Eberlein, E., Jacod, J. (1997) On the range of options prices. To appear in *Finance and Stochastics.*

[297] Eberlein, E., Keller, U. (1995) Hyperbolic distributions in finance. *Bernoulli* 1, 281–299.

[298] Edirisinghe, C., Naik, V., Uppal, R. (1993) Optimal replication of options with transactions costs and trading restrictions. *J. Finan. Quant. Anal.* 28, 117–138.

[299] Edwards, F.R., Ma, C.W. (1992) *Futures and Options.* McGraw-Hill, New York.

[300] Eisenberg, L., Jarrow, R. (1994) Option pricing with random volatilities in complete markets. *Rev. Quant. Finance Accounting* 4, 5–17.

[301] El Karoui, N. (1981) Les aspects probabilistes du contrôle stochastique. In: *Lecture Notes in Math. 876.* Springer, Berlin Heidelberg New York, pp. 73–238.

[302] El Karoui, N., Geman, H. (1994) A probabilistic approach to the valuation of floating rate notes with an application to interest rate swaps. *Adv. in Futures Options Res.* 7, 47–63.

[303] El Karoui, N., Karatzas, I. (1991) A new approach to the Skorohod problem and its applications. *Stochastics Stochastics Rep.* 34, 57–82.

[304] El Karoui, N., Lacoste, V. (1992) Multifactor models of the term structure of interest rates. Working paper, CERESSEC, Cergy Pontoise.

[305] El Karoui, N., Quenez, M.C. (1995) Dynamic programming and pricing of contingent claims in an incomplete market. *SIAM J. Control Optimiz.* 33, 29–66.

[306] El Karoui, N., Quenez, M.C. (1997) Non-linear pricing theory and backward stochastic differential equations. To appear in: *Proceedings CIME Conference, Bressanone 1996,* W.Runggaldier, ed. *Lecture Notes in Math.* Springer, Berlin Heidelberg New York.

[307] El Karoui, N., Rochet, J.C. (1989) A pricing formula for options on coupon bonds. Working paper, SDEES.

[308] El Karoui, N., Saada, D. (1992) A review of the Ho and Lee's model. *International Conference in Finance,* Paris, June 1992.

[309] El Karoui, N., Lepage, C., Myneni, R., Roseau, N., Viswanathan, R. (1991) The valuation and hedging of contingent claims with Markovian interest rates. Working paper, Université Paris VI.

[310] El Karoui, N., Myneni, R., Viswanathan, R. (1992) Arbitrage pricing and hedging of interest rate claims with state variables, theory and applications. Working paper, Stanford University and Université Paris VI.

[311] El Karoui, N., Geman, H., Lacoste, V. (1995a) On the role of state variables in interest rates models. Working paper, Université Paris VI and ESSEC.

[312] El Karoui, N., Geman, H., Rochet, J.C. (1995b) Changes of numeraire, changes of probability measures and pricing of options. *J. Appl. Probab.* 32, 443–458.

[313] El Karoui, N., Jeanblanc-Picqué, M., Shreve, S. (1997a) Robustness of the Black and Scholes formula. To appear in *Math. Finance.*

[314] El Karoui, N., Peng, S., Quenez, M.C. (1997b) Backward stochastic differential equations in finance. To appear in *Math. Finance.*

[315] Elliott, R.J. (1982) *Stochastic Calculus and Applications.* Springer, Berlin Heidelberg New York.

[316] Elliott, R.J., Myneni, R., Viswanathan, R. (1990) A theorem of El Karoui and Karatzas applied to the American option. Working paper.

[317] Elliott, R.J., Hunter, W.C., Kopp, P.E., Madan, D. (1995) Pricing via multiplicative price decomposition. *J. Finan. Engineering* 4, 247–262.

[318] Elliott, R.J., Rishell, R.W. (1994) Estimating the implicit interest rate of a risky asset. *Stochastic Process. Appl.* 49, 199–206.

[319] Elton, E.J., Gruber, M.J. (1995) *Modern Portfolio Theory and Investment Analysis,* 5th ed., J.Wiley, New York.

[320] Elton, E.J., Gruber, M.J., Roni, M. (1990) The structure of spot rates and immunization. *J. Finance* 45, 621–641.

[321] Emanuel, D. (1983) Warrant valuation and exercise strategy. *J. Finan. Econom.* 12, 211–235.

[322] Embrechts, P., Rogers, L.C.G., Yor, M. (1995) A proof of Dassios' representation for the α-quantile of Brownian motion with drift. *Ann. Appl. Probab.* 5, 757–767.

[323] Embrechts, P., Klüppelberg, C., Mikosh, T. (1997) *Modelling Extremal Events for Insurance and Finance.* Springer, Berlin Heildelberg New York.

[324] Engle, R.F., Bollerslev, T. (1986) Modelling the persistence of conditional variances. *Econometric Rev.* 5, 1–50.

[325] Eunine, J., Rudd, A. (1985) Index options: the early evidence. *J. Finance* 40, 743–756.

[326] Evans, L.T., Keef, S.P., Okunev, J. (1994) Modelling real interest rates. *J. Banking Finance* 18, 153–165.

[327] Fama, E.F. (1965) The behaviour of stock market prices. *J. Business* 38, 34–105.

[328] Fama, E.F. (1976) Forward rates as predictors of future spot rates. *J. Finan. Econom.* 3, 361–377.

[329] Fama, E.F. (1981) Stock returns, real activity, inflation, and money. *Amer. Econom. Rev.* 71, 545–565.

[330] Fama, E.F. (1984a) Information in the term structure of interest rates. *J. Finan. Econom.* 13, 509–528.

[331] Fama, E.F. (1984b) Term premiums in bond returns. *J. Finan. Econom.* 13, 529–546.

[332] Fama, E.F. (1990) Stock returns, expected returns and real activity. *J. Finance* 45, 1089–1108.

[333] Fama, E.F., French, K.R. (1992) The cross-section of expected stock returns. *J. Finance* 47, 427–465.

[334] Fama, E.F., MacBeth, J. (1973) Risk, return and equilibrium: empirical tests. *J. Political Econom.* 81, 607–636.

[335] Fama, E.F., Schwert, G.W. (1977) Asset returns and inflation. *J. Finan. Econom.* 5, 115–146.

[336] Feiger, G., Jacquillat, B. (1979) Currency option bonds, puts and calls on spot exchange and the hedging of contingent claims. *J. Finance* 34, 1129–1139.

[337] Feldman, D. (1989) The term structure of interest rates in a partially observed economy. *J. Finance* 44, 789–811.

[338] Figlewski, S. (1989) Options arbitrage in imperfect markets. *J. Finance* 44, 1289–1311.

[339] Fisher, L. (1959) Determinants of risk premium of corporate bonds. *J. Political Econom.* 67, 217–237.

[340] Flesaker, B. (1991) The relationship between forward and futures contracts: a comment. *J. Futures Markets* 11, 113–115.

[341] Flesaker, B. (1993a) Testing the Heath-Jarrow-Morton/Ho-Lee model of interest rate contingent claims pricing. *J. Finan. Quant. Anal.* 28, 483–495.

[342] Flesaker, B. (1993b) Arbitrage free pricing of interest rate futures and forward contracts. *J. Futures Markets* 13, 77–91.

[343] Flesaker, B., Hughston, L. (1996) Positive interest. *Risk* 9(1), 46–49.

[344] Föllmer and Schweizer Föllmer, H., Schweizer, M. (1989) Hedging by sequential regression: an introduction to the mathematics of option trading. *ASTIN Bulletin* 18, 147–160.

[345] Föllmer, H., Schweizer, M. (1991) Hedging of contingent claims under incomplete information. In: *Applied Stochastic Analysis,* M.H.A.Davis and R.J.Elliott, eds. Gordon and Breach, London New York, pp. 389–414.

[346] Föllmer, H., Schweizer, M. (1993) A microeconomic approach to diffusion models for stock prices. *Math. Finance* 3, 1–23.

[347] Föllmer, H., Sondermann, D. (1986) Hedging of non-redundant contingent claims. In: *Contributions to Mathematical Economics in Honor of Gérard Debreu,* W.Hildenbrand and A.Mas-Colell, eds. North Holland, Amsterdam, pp. 205–223.

[348] Fong, G.H., Vasicek, O.A. (1983) The tradeoff between return and risk in immunized portfolios. *Finan. Analysts J.* 39(5), 73–78.

[349] Fong, G.H., Vasicek, O.A. (1986) A risk minimizing strategy for portfolio immunization. *J. Finance* 39, 1541–1546.

[350] Fong, G.H., Vasicek, O.A. (1991) Fixed-income volatility management. *J. Portfolio Management* Summer, 41–46.

[351] Fournié, E., Lasry, J.M., Touzi, N. (1997) Monte Carlo methods for stochastic volatility models. To appear in *Numerical Methods in Financial Mathematics.* L.C.G.Rogers and D.Talay, eds. Cambridge University Press, Cambridge.

[352] Frachot, A. (1995) Factor models of domestic and foreign interest rates with stochastic volatilities. *Math. Finance* 5, 167–185.

[353] Frachot, A. (1996) A reexamination of the uncovered interest rate parity hypothesis. *J. Internat. Money Finance* 15, 419–437.

[354] Fraine, H.G., Mills, R.H. (1961) The effect of default and credit deterioration on yields on corporate bonds. *J. Finance* 16, 423–433.

[355] French, K.R. (1980) Stock returns and the weekend effect. *J. Finan. Econom.* 8, 55–69.

[356] French, K.R. (1983) A comparison of futures and forward prices. *J. Finan. Econom.* 12, 311–342.

[357] French, K.R. (1984) The weekend effect on the distribution of stock prices: implication for option pricing. *J. Finan. Econom.* 13, 547–560.

[358] French, K.R., Roll, R. (1986) Stock return variances: the arrival of information and the reaction of traders. *J. Finan. Econom.* 17, 5–26.

[359] French, K.R., Schwert, W.G., and Stambaugh, R.F. (1987) Expected stock returns and volatility. *J. Finan. Econom.* 19, 3–29.

[360] Galai, D. (1977) Tests of market efficiency of the Chicago Board Options Exchange. *J. Business* 50, 167–197.

[361] Galai, D. (1983) The components of the return from hedging options with stocks. *J. Business* 56, 45–54.

[362] Garman, M. (1985) The duration of option portfolios. *J. Finan. Econom.* 14, 309–315.

[363] Garman, M., Klass, M.J. (1980) On the estimation of security price volatilities from historical data. *J. Business* 53, 67–78.

[364] Garman, M., Kohlhagen, S. (1983) Foreign currency option values. *J. Internat. Money Finance* 2, 231–237.

[365] Gątarek, D. (1996) Pricing American swaptions in an approximate lognormal model. Working paper, University of New South Wales.

[366] Gay, G., Manaster, S. (1984) The quality option implicit in futures contracts. *J. Finan. Econom.* 13, 353–370.

[367] Gay, G., Manaster, S. (1986) Implicit delivery options and optimal delivery strategies for financial futures constraints. *J. Finan. Econom.* 16, 41–72.

[368] Geman, H. (1989) The importance of the forward neutral probability in a stochastic approach of interest rates. Working paper, ESSEC.

[369] Geman, H., Eydeland, A. (1995) Domino effect. *Risk* 8(4), 65–67.

[370] Geman, H., Yor, M. (1992) Quelques relations entre processus de Bessel, options asiatiques, et fonctions confluentes hypergéométriques. *C.R. Acad Sci. Paris, Série I* 314, 471–474.

[371] Geman, H., Yor, M. (1993) Bessel processes, Asian options and perpetuities. *Math. Finance* 3, 349–375.

[372] Geman, H., Yor, M. (1996) Pricing and hedging double-barrier options: a probabilistic approach. *Math. Finance* 6, 365–378.

[373] Gentle, D. (1993) Basket weaving. *Risk* 6(6), 51–52.

[374] Gerber, H.U., Shiu, E.S.W. (1994) Option pricing by Esscher transforms *Trans. Soc. Actuaries* 46, 51–92.

[375] Gerber, H.U., Shiu, E.S.W. (1996) Martingale approach to pricing perpetual American options on two stocks. *Math. Finance* 6, 303–322.

[376] Geske, R. (1977) The valuation of corporate liabilities as compound options. *J. Finan. Quant. Anal.* 12, 541–552.

[377] Geske, R. (1978) Pricing of options with stochastic dividend yield. *J. Finance* 33, 617–625.

[378] Geske, R. (1979a) The valuation of compound options. *J. Finan. Econom.* 7, 63–81.

[379] Geske, R. (1979b) A note on an analytical valuation formula for an unprotected American call options with known dividends. *J. Finan. Econom.* 7, 375–380.

[380] Geske, R., Johnson, H.E. (1984) The American put option valued analytically. *J. Finance* 39, 1511–1524.

[381] Geske, R., Roll, R. (1984) On valuing American call options with the Black-Scholes European formula. *J. Finance* 39, 443–455.

[382] Geske, R., Shastri, K. (1985a) Valuation by approximation: a comparison of alternative option valuation techniques. *J. Finan. Quant. Anal.* 20, 45–71.

[383] Geske, R., Shastri, K. (1985b) The early exercise of American puts. *J. Business Finance* 9, 207–219.

[384] Gibbons, M.R. (1982) Multivariate tests of financial models: a new approach. *J. Finan. Econom.* 10, 3–27.

[385] Gibbons, M.R., Ferson, W. (1985) Testing asset pricing models with changing expectations and an unobservable market portfolio. *J. Finan. Econom.* 14, 217–236.

[386] Gibbons, M.R., Ramaswamy, K. (1993) A test of the Cox, Ingersoll and Ross model of the term structure. *Rev. Finan. Stud.* 6, 619–658.

[387] Gilster, J.E., Lee, W. (1984) The effects of transaction costs and different borrowing and lending rates on the option pricing model: a note. *J. Finance* 39, 1215–1221.

[388] Goldberg, L. (1996) Volatility of the short rate in the rational lognormal model. Working paper, BARRA.

[389] Goldenberg, D.H. (1991) A unified method for pricing options on diffusion processes. *J. Finan. Econom.* 29, 3–34.

[390] Goldman, B., Sosin, H., Gatto, M. (1979a) Path dependent options: buy at the low, sell at the high. *J. Finance* 34, 1111–1128.

[391] Goldman, B., Sosin, H., Shepp, L.A. (1979b) On contingent claims that insure ex-post optimal stock market timing. *J. Finance* 34, 401–414.

[392] Goldman, D., Heath, D., Kentwell, G., Platen, E. (1995) Valuation of two-factor term structure models. *Adv. in Futures Options Res.* 8, 263–291.

[393] Goldys, B. (1997) A note on pricing interest rate derivatives when the forward LIBOR rates are lognormal. To appear in *Finance and Stochastics.*

[394] Goldys, B., Musiela, M. (1996) On partial differential equations related to term structure models. Working paper, University of New South Wales.

[395] Goldys, B., Musiela, M., Sondermann, D. (1994) Lognormality of rates and term structure models. Working paper, University of New South Wales.

[396] Goodman, L.S., Ross, S., Schmidt, F. (1985) Are foreign currency options overvalued? The early experience of the Philadelphia Stock Exchange. *J. Futures Markets* 5, 349–359.

[397] Gould, J.P., Galai, D. (1974) Transaction costs and the relationship between put and call prices. *J. Finan. Econom.* 1, 105–130.

[398] Grabbe, J. O. (1983) The pricing of call and put options on foreign exchange. *J. Internat. Money Finance* 2, 239–253.

[399] Grannan, E.R., Swindle, G.H. (1996) Minimizing transaction costs of option hedging strategies. *Math. Finance* 6, 341–364.

[400] Greene, R.C., Jarrow, R. (1987) Spanning and completeness in markets with contingent claims. *J. Econom. Theory* 41, 202–210.

[401] Greene, M.T., Fielitz, B.D. (1977) Long-term dependence in common stock returns. *J. Finan. Econom.* 4, 339–349.

[402] Greene, M.T., Fielitz, B.D. (1979) The effect of long term dependence on risk-return models of common stocks. *Operations Res.* 27, 944-951.

[403] Grinold, R.C., Kahn, R.N. (1995) *Active Portfolio Managament. Quantitative Theory and Applications.* Probus Publ. Co., Chicago (Illinois).

[404] Grossman, S., Laroque, G. (1990) Asset pricing and optimal portfolio choice in the presence of illiquid durable consumption goods. *Econometrica* 58, 25–51.

[405] Grundy, B. (1991) Option prices and the underlying asset's return distribution. *J. Finance* 46, 1045–1069.

[406] Gultekin, N., Rogalski, R., Tinic, S. (1982) Option pricing model estimates: some empirical results. *Finan. Manag.* 11, 58–69.

[407] Harrison, J.M. (1985) *Brownian Motion and Stochastic Flow Systems.* Wiley, New York.

[408] Harrison, J.M., Kreps, D.M. (1979) Martingales and arbitrage in multiperiod securities markets. *J. Econom. Theory* 20, 381–408.

[409] Harrison, J.M., Pliska, S.R. (1981) Martingales and stochastic integrals in the theory of continuous trading. *Stochastic Process. Appl.* 11, 215–260.

[410] Harrison, J.M., Pliska, S.R. (1983) A stochastic calculus model of continuous trading: complete markets. *Stochastic Process. Appl.* 15, 313–316.

[411] Harrison, J.M., Pitbladdo, R., Schaefer, S.M. (1984) Continuous price processes in frictionless markets have infinite variation. *J. Business* 57, 353–365.

[412] He, H. (1990) Convergence from discrete to continuous-time contingent claims prices. *Rev. Finan. Stud.* 3, 523–546.

[413] Heath, D., Jarrow, R. (1987) Arbitrage, continuous trading, and margin requirement. *J. Finance* 42, 1129–1142.

[414] Heath, D., Jarrow, R. (1988) Ex-dividend stock price behavior and arbitrage opportunities. *J. Business* 61, 95–108.

[415] Heath, D., Jarrow, R., Morton, A. (1990a) Bond pricing and the term structure of interest rates: a discrete time approximation. *J. Finan. Quant. Anal.* 25, 419–440.

[416] Heath, D., Jarrow, R., Morton, A. (1990b) Contingent claim valuation with a random evolution of interest rates. *Rev. Futures Markets* 9, 54–76.

[417] Heath, D., Jarrow, R., Morton, A. (1992a) Bond pricing and the term structure of interest rates: a new methodology for contingent claim valuation. *Econometrica* 60, 77–105.

[418] Heath, D., Jarrow, R., Morton, A., Spindel, M. (1992b) Easier done than said. *Risk* 5(9), 77–80.

[419] Hegde, S. (1988) An empirical analysis of implicit delivery options in Treasury bond futures contracts. *J. Banking Finance* 12, 469–492.

[420] Heitmann, F., Trautmann, S. (1995) Gaussian multi-factor interest rate models: theory, estimation, and implications for options pricing. Working paper, Johannes Gutenberg-University Mainz.

[421] Hemler, M. (1990) The quality delivery option in Treasury bond futures contracts. *J. Finance* 45, 1565–1586.

[422] Henrotte, P. (1991) Transaction costs and duplication strategies. Working paper, Stanford University and HEC.

[423] Heston, S.L. (1993) A closed-form solution for options with stochastic volatility with applications to bond and currency options. *Rev. Finan. Stud.* 6, 327–343.

[424] Heynen, R.C., Kat, H.M. (1994) Partial barrier options. *J. Finan. Engineering* 3, 253–274.

[425] Heynen, R.C., Kat, H.M. (1995) Lookback options with discrete and partial monitoring of the underlying price. *Appl. Math. Finance* 2, 273–284.

[426] Ho, T.S.Y., Lee, S.-B. (1986) Term structure movements and pricing interest rate contingent claims. *J. Finance* 41, 1011–1029.

[427] Ho, T., Singer, R. (1982) Bond indenture provisions and the risk of corporate debt. *J. Finance* 41, 375–406.

[428] Ho, T., Singer, R. (1984) The value of corporate debt with a sinking fund provision. *J. Business* 57, 315–336.

[429] Hodges, S., Neuberger, A. (1989) Optimal replication of contingent claims under transaction costs. *Rev. Futures Markets* 8, 222–239.

[430] Hoffman, I.D. (1993) Lognormal processes in finance. Doctoral dissertation, University of New South Wales, Sydney.

[431] Hofmann, N., Platen, E., Schweizer, M. (1992) Option pricing under incompleteness and stochastic volatility. *Math. Finance* 2, 153–187.

[432] Hoggard, T., Whalley, A.E., Wilmott, P. (1994) Hedging option portfolios in the presence of transaction costs. *Adv. in Futures Options Res.* 7, 21-35.

[433] Hogan, M. (1993) Problems in certain two-factor term structure models. *Ann. Appl. Probab.* 3, 576–581.

[434] Hogan, M., Weintraub, K. (1993) The log-normal interest rate model and Eurodollar futures. Working paper, Citibank, New York.

[435] Hsu, D.A., Miller, R., Wichern, D. (1974) On the stable Paretian behavior of stock market prices. *J. Amer. Statist. Assoc.* 69, 108–113.

[436] Huang, C.-F. (1985a) Information structures and equilibrium asset prices. *J. Econom. Theory* 35, 33–71.

[437] Huang, C.-F. (1985b) Information structures and viable price systems. *J. Math. Econom.* 14, 215–240.

[438] Huang, C.-F. (1987) An intertemporal general equilibrium asset pricing model: the case of diffusion information. *Econometrica* 55, 117–142.

[439] Huang, C.-F., Litzenberger, R.H. (1988) *Foundations for Financial Economics.* North-Holland, New York.

[440] Huberman, G. (1983) A simplified approach to arbitrage pricing theory. *J. Econom. Theory* 28, 1983–1991.

[441] Hull, J. (1991) *Introduction to Futures and Options Markets.* Prentice-Hall, Englewood Cliffs (New Jersey).

[442] Hull, J. (1993) *Options, Futures, and Other Derivative Securities.* 2d ed. Prentice-Hall, Englewood Cliffs (New Jersey).

[443] Hull, J., White, A. (1987a) The pricing of options on assets with stochastic volatilities. *J. Finance* 42, 281–300.

[444] Hull, J., White, A. (1987b) Hedging the risks from writing foreign currency options. *J. Internat. Money Finance* 6, 131–152.

[445] Hull, J., White, A. (1988a) The use of the control variate technique in option pricing. *J. Finan. Quant. Anal.* 23, 237–252.

[446] Hull, J., White, A. (1988b) An analysis of the bias in option pricing caused by a stochastic volatility. *Adv. in Futures Options Res.* 3, 29–61.

[447] Hull, J., White, A. (1988c) An overview of the pricing of contingent claims. *Canad. J. Admin. Sci.* 5, 55–61.

[448] Hull, J., White, A. (1990a) Pricing interest-rate derivative securities. *Rev. Finan. Stud.* 3, 573–592.

[449] Hull, J., White, A. (1990b) Valuing derivative securities using the explicit finite difference method. *J. Finan. Quant. Anal.* 25, 87–100.

[450] Hull, J., White, A. (1993a) Bond option pricing based on a model for the evolution of bond prices. *Adv. in Futures Options Res.* 6, 1–13.

[451] Hull, J., White, A. (1993b) One-factor interest rate models and the valuation of interest rate derivative securities. *J. Finan. Quant. Anal.* 28, 235–254.

[452] Hull, J., White, A. (1993c) Efficient procedures for valuing European and American path-dependent options. *J. Derivatives,* 1, 21–31.

[453] Hull, J., White, A. (1994) The pricing of options on interest-rate caps and floors using the Hull-White model. *J. Financial Engineering* 2, 287–296.

[454] Hull, J., White, A. (1995) The impact of default risk on the prices of options and other derivatives. *J. Banking Finance* 19, 299–322.

[455] Hurst, S.R., Platen, E., Rachev, S.T. (1996a) Option pricing in a logstable asset price model. Working paper, Australian National University, Canberra.

[456] Hurst, S.R., Platen, E., Rachev, S.T. (1996b) Subordinated market index models: a comparison. Working paper, Australian National University, Canberra.

[457] Huynh, C.B. (1994) Back to baskets. *Risk* 7(5), 59–61.

[458] Hutchinson, J., Lo, A., Poggio, T. (1994) A nonparametric approach to pricing and hedging derivative securities via learning networks. *J. Finance* 49, 851–890.

[459] Ingersoll, J.E., Jr. (1987) *Theory of Financial Decision Making.* Rowman and Littlefield, Totowa (New Jersey).

[460] Jacka, S.D. (1991) Optimal stopping and the American put. *Math. Finance* 1, 1–14.

[461] Jacka, S.D. (1992) A martingale representation result and an application to incomplete financial markets. *Math. Finance* 2, 239–250.

[462] Jacka, S.D. (1993) Local times, optimal stopping and semimartingales. *Ann. Probab.* 21, 329–339.

[463] Jacod, J. (1979) *Calcul stochastique et problèmes de martingales. Lecture Notes in Math. 714.* Springer, Berlin Heidelberg New York.

[464] Jagannathan, R.K. (1984) Call options and the risk of underlying securities. *J. Finan. Econom.* 13, 425–434.

[465] Jaillet, P., Lamberton, D., Lapeyre, B. (1990) Variational inequalities and the pricing of American options. *Acta Appl. Math.* 21, 263–289.

[466] Jamshidian, F. (1987) Pricing of contingent claims in the one factor term structure model. Working paper, Merrill Lynch Capital Markets.

[467] Jamshidian, F. (1988) The one-factor Gaussian interest rate model: theory and implementation. Working paper, Merrill Lynch Capital Markets.

[468] Jamshidian, F. (1989a) An exact bond option pricing formula. *J. Finance* 44, 205–209.

[469] Jamshidian, F. (1989b) The multifactor Gaussian interest rate model and implementation. Working paper, Merrill Lynch Capital Markets.

[470] Jamshidian, F. (1991a) Bond and option evaluation in the Gaussian interest rate model. *Res. Finance* 9, 131–170.

[471] Jamshidian, F. (1991b) Forward induction and construction of yield curve diffusion models. *J. Fixed Income,* June, 62–74.

[472] Jamshidian, F. (1992) An analysis of American options. *Rev. Futures Markets* 11, 72–80.

[473] Jamshidian, F. (1993a) Option and futures evaluation with deterministic volatilities. *Math. Finance* 3, 149–159.

[474] Jamshidian, F. (1993b) Price differentials. *Risk* 6(7), 48–51.

[475] Jamshidian, F. (1994a) Corralling quantos. *Risk* 7(3), 71–75.

[476] Jamshidian, F. (1994b) Hedging quantos, differential swaps and ratios. *Appl. Math. Finance* 1, 1–20.

[477] Jamshidian, F. (1995) A simple class of square-root interest-rate models. *Appl. Math. Finance* 2, 61–72.

[478] Jamshidian, F. (1996a) Bond, futures and options evaluation in the quadratic interest rate model. *Appl. Math. Finance* 3, 93–115.

[479] Jamshidian, F. (1997) Libor and swap market models and measures. To appear in *Finance and Stochastics.*

[480] Jarrow, R. (1987) The pricing of commodity options with stochastic interest rates. *Adv. in Futures Options Res.* 2, 19–45.

[481] Jarrow, R. (1988) *Finance Theory.* Prentice-Hall, Englewood Cliffs (New Jersey).

[482] Jarrow, R. (1996) *Modelling Fixed Income Securities and Interest Rate Options.* McGraw-Hill, New York.

[483] Jarrow, R., Madan, D.B. (1991) A characterization of complete markets on a Brownian filtration. *Math. Finance* 1, 31–43.

[484] Jarrow, R., Madan, D.B. (1995) Option pricing using the term structure of interest rates to hedge systematic discontinuities in asset returns. *Math. Finance* 5, 311–336.

[485] Jarrow, R., O'Hara, M. (1989) Primes and scores: an essay on market imperfections. *J. Finance* 44, 1265–1287.

[486] Jarrow, R., Oldfield, G.S. (1981) Forward contracts and futures contracts. *J. Finan. Econom.* 9, 373–382.

[487] Jarrow, R., Oldfield, G.S. (1981) Forward options and futures options. *Adv. in Futures Options Res.* 3, 15–28.

[488] Jarrow, R., Rudd, A. (1982) Approximate option valuation for arbitrary stochastic processes. *J. Finan. Econom.* 10, 347-369.

[489] Jarrow, R., Rudd, A. (1983) *Option Pricing.* Dow Jones-Irwin, Homewood (Illinois).

[490] Jarrow, R., Rudd, A. (1983b) A comparison of the APT and CAPM. *J. Banking Finance* 7, 295–30.

[491] Jarrow, R., Turnbull, S. (1994) Delta, gamma and bucket hedging of interest rate derivatives. *Appl. Math. Finance* 1, 21–48.

[492] Jarrow, R., Turnbull, S. (1995a) Pricing derivatives on financial securities subject to credit risk. *J. Finance* 50, 53–85.

[493] Jarrow, R., Turnbull, S. (1995b) *Derivative Securities.* Southwestern Publishers, Cleveland.

[494] Jarrow, R., Wiggins, J.B. (1989) Option pricing and implicit volatilities. *J. Econom. Surveys* 3, 59–81.

[495] Jarrow, R., Lando, D., Turnbull, S. (1994) A Markov model for the term structure of credit risk spreads. Working paper, Cornell University.

[496] Jensen, B., Nielsen, J. (1991) The structure of binomial lattice models for bonds. Working paper, Institut for Finansiering, Copenhagen.

[497] Ji, D.M., Yin, G. (1993) Weak convergence of term structure movements and the connection of prices and interest rates. *Stochastic Anal. Appl.* 11, 61–76.

[498] Johnson, H. (1983) An analytic approximation to the American put price. *J. Finan. Quant. Anal.* 18, 141–148.

[499] Johnson, H. (1987) Options on the maximum or minimum of several assets. *J. Finan. Quant. Anal.* 22, 277–283.

[500] Johnson, H., Shanno, D. (1987) Option pricing when the variance is changing. *J. Finan. Quant. Anal.* 22, 143–151.

[501] Johnson, H., Stulz, R. (1987) The pricing of options under default risk. *J. Finance* 42, 267–280.

[502] Johnson, L.L. (1960) The theory of hedging and speculation in commodity futures markets. *Rev. Econom. Stud.* 27, 139–151.

[503] Jones, C., Milne, F. (1993) Tax arbitrage, existence of equilibrium, and bounded tax rebates. *Math. Finance* 3, 189–196.

[504] Jones, E.P. (1983) Option arbitrage and strategy with large price changes. *J. Finan. Econom.* 13, 91–113.

[505] Jouini, E. (1997) Financial markets with frictions: equilibrium and arbitrage. To appear in: *Proceedings CIME Conference, Bressanone 1996,* W.Runggaldier, ed. *Lecture Notes in Math.* Springer, Berlin Heidelberg New York.

[506] Jouini, E., Carassus, L. (1997) Investment and arbitrage opportunities with short sales constraints. To appear in *Math. Finance.*

[507] Jouini, E., Kallal, H. (1995a) Martingales and arbitrage in securities markets with transaction costs. *J. Econom. Theory* 66, 178–197.

[508] Jouini, E., Kallal, H. (1995b) Arbitrage in securities markets with short-sales constraints. *Math. Finance* 5, 197–232.

[509] Kabanov, Yu.M., Kramkov, D.O. (1994) No-arbitrage and equivalent martingale measures: an elementary proof of the Harrison-Pliska theorem. *Theory Probab. Appl.* 39, 523-527.

[510] Kabanov, Yu.M., Kramkov, D.O. (1997) Asymptotic arbitrage in large financial markets. To appear in *Finance and Stochastics.*

[511] Kabanov, Yu.M., Safarian, M. (1997) On Leland's strategy of option pricing with transaction costs. To appear in *Finance and Stochastics.*

[512] Kalay, A. (1982) The ex-dividend day behavior of stock prices: a re-examination of the clientele effect. *J. Finance* 37, 1059–1070.

[513] Kalay, A. (1984) The ex-dividend day behavior of stock prices: a re-examination of the clientele effect: a reply. *J. Finance* 39, 557–561.

[514] Kane, A., Marcus, A.F. (1986) Valuation and optimal exercise of the wild card option in Treasury bond futures markets. *J. Finance* 41, 195–207.

[515] Kaplanis, C. (1986) Options, taxes, and ex-dividend day behavior. *J. Finance* 41, 411–424.

[516] Karatzas, I. (1988) On the pricing of American options. *Appl. Math. Optim.* 17, 37–60.

[517] Karatzas, I. (1989) Optimization problems in the theory of continuous trading. *SIAM J. Control Optim.* 27, 1221–1259.

[518] Karatzas, I., Kou, S.-G. (1997) Hedging American contingent claims with constraint portfolios. To appear in *Finance and Stochastcis.*

[519] Karatzas, I., Ocone, D.L. (1992) A generalized Clark representation formula with application to optimal portfolios. *Stochastics Stochastics Rep.* 34, 187–220.

[520] Karatzas, I., Shreve, S. (1988) *Brownian Motion and Stochastic Calculus.* Springer, Berlin Heidelberg New York.

[521] Karatzas, I., Shreve, S. (1997) *Methods of Mathematical Finance.* Springer, Berlin Heidelberg New York.

[522] Karatzas, I., Xue, X.-X. (1991) A note on utility maximization under partial observations. *Math. Finance* 1, 57–70.

[523] Karatzas, I., Lehoczky, J.P., Sethi, S.P., Shreve, S.E. (1986) Explicit solution of a general consumption/investment problem. *Math. Oper. Res.* 11, 261–294.

[524] Karatzas, I., Lehoczky, J.P., Shreve, S.E. (1997) Optimal portfolio and consumption decisions for a "small investor" on a finite horizon. *SIAM J. Control Optim.* 25, 1557–1586.

[525] Karatzas, I., Lehoczky, J.P., Shreve, S.E. (1990) Existence and uniqueness of multi-agent equilibrium in a stochastic, dynamic consumption/investment model. *Math. Oper. Res.* 15, 80–128.

[526] Karatzas, I., Lehoczky, J.P., Shreve, S.E. (1991a) Equilibrium models with singular asset prices. *Math. Finance* 1, 11–29.

[527] Karatzas, I., Ocone, D.L., Li, J. (1991b) An extension of Clark's formula. *Stochastics Stochastics Rep.* 32, 127–131.

[528] Karatzas, I., Lehoczky, J.P., Shreve, S.E., Xu, G.-L. (1991c) Martingale and duality methods for utility maximization in an incomplete market. *SIAM J. Control Optim.* 29, 702–730.

[529] Keim, D.B., Stambaugh, R.F. (1986) Predicting returns in the stock and bond markets. *J. Finan. Econom.* 17, 357–390.

[530] Kemna, A.G.Z., Vorst, T.C.F. (1990) A pricing method for options based on average asset values. *J. Bank. Finance* 14, 113–129.

[531] Kennedy, D.P. (1994) The term structure of interest rates as a Gaussian random field. *Math. Finance* 4, 247–258.

[532] Kennedy, D.P. (1995) Characterizing and filtering Gaussian models of the term structure of interest rates. Working paper, University of Cambridge.

[533] Kim, I.J. (1990) The analytic valuation of American options. *Rev. Finan. Stud.* 3, 547–572.

[534] Kim, I.J., Ramaswamy, K., Sundaresan, S. (1993) Does default risk in coupons affect the valuation of corporate bonds? *Finan. Manag.* 22, 117–131.

[535] Kind, P., Liptser, R.S., Runggaldier, W.J. (1991) Diffusion approximation in past dependent models and applications to option pricing. *Ann. Appl. Probab.* 1, 379–405.

[536] Klein, I., Schachermayer, W. (1996) Asymptotic arbitrage in non-complete large financial markets. *Theory Probab. Appl.* 41.

[537] Kleinberg, N.L. (1995) A note on finite securities market models. *Stochastic Anal. Appl.* 13, 543–554.

[538] Klemkosky, R.C., Lee, J.H. (1991) The intraday ex post and ex ante profitability of index arbitrage. *J. Futures Markets* 11, 291–311.

[539] Klemkosky, R.C., Resnick, B.G. (1979) Put-call parity and market efficiency.*J. Finance* 34, 1141–1157.

[540] Kloeden, P.E., Platen, E. (1995) *Numerical Solution of Stochastic Differential Equations.* 2nd ed. Springer, Berlin Heidelberg New York.

[541] Knight Knight, F.B. (1981) *Essentials of Brownian Motion and Diffusion.* Math. Survey 18. Amer. Math. Soc., Providence, Rhode Island.

[542] Kolb, R.W. (1991) *Understanding Futures Markets.* 3d ed. Kolb Publishing, Miami.

[543] Kon, S.J. (1984) Models of stock returns - a comparison. *J. Finance* 39, 147–165.

[544] Korn, R. (1993) The pricing of look back options and a Fubini theorem for Itô- and Lebesque-integrals. In: *Stochastic Processes and Optimal Control,* H.J.Engelbert , eds. Gordon and Breach, New York, pp. 105–113.

[545] Kramkov, D. (1996) Optional decomposition of supermartingales and hedging contingent claims in incomplete security markets. *Probab. Theory Rel. Fields* 105, 459–479.

[546] Kramkov, D.O., Mordecki, E. (1994) Integral option. *Theory Probab. Appl.* 39, 162–171.

[547] Kramkov, D.O., Shiryayev, A.N. (1994) On the pricing of the "Russian option" for the symmetrical binomial model of (B,S)-market. *Theory Probab. Appl.* 39, 153–161.

[548] Kramkov, D.O., Vishnyakov, A.N. (1994) Closed form representations for the minimal hedging portfolios of American type contingent claims. Working paper, University of Bonn.

[549] Kreps, D. (1981) Arbitrage and equilibrium in economies with infinitely many commodities. *J. Math. Econom.* 8, 15–35.

[550] Kunitomo, N., Ikeda, M. (1992) Pricing options with curved boundaries. *Math. Finance* 2, 275–298.

[551] Kusuoka, S. (1995) Limit theorem on option replication cost with transaction costs. *Ann. Appl. Probab.* 5, 198–221.

[552] Lacoste, V. (1996) Wiener chaos: a new approach to option hedging. *Math. Finance* 6, 197–213.

[553] Lakner, P. (1993) Martingale measure for a class of right-continuous processes. *Math. Finance* 3, 43–53.

[554] Lakonishok, J., Vermaelen, T. (1983) Tax reform and ex-dividend day price behavior. *J. Finance* 38, 1157–1179.

[555] Lakonishok, J., Vermaelen, T. (1986) Tax-induced trading around ex-dividend days. *J. Finan. Econom.* 16, 287–319.

[556] Lamberton, D. (1993) Convergence of the critical price in the approximation of American options. *Math. Finance* 3, 179–190.

[557] Lamberton, D. (1995) Critical price for an American option near maturity. In: *Seminar on Stochastic Analysis, Random Fields and Applications,* E.Bolthausen , eds. Birkhäuser, Boston Basel Berlin, pp. 353–358.

[558] Lamberton, D., Lapeyre, B. (1993) Hedging index options with few assets. *Math. Finance* 3, 25–42.

[559] Lando, D. (1994) On Cox processes and credit risky bonds. Working paper.

[560] Langetieg, T.C. (1980) A multivariate model of the term structure. *J. Finance* 35, 71–97.

[561] Latané, H., Rendleman, R. (1976) Standard deviations of stock price ratios implied in option prices. *J. Finance* 31, 369–381.

[562] Lauterbach, B., Schultz, P. (1990) Pricing warrants: an empirical study of the Black-Scholes model and its alternatives. *J. Finance* 45, 1181–1209.

[563] Leland, H.E. (1980) Who should buy portfolio insurance? *J. Finance* 35, 581–594.

[564] Leland, H.E. (1985) Option pricing and replication with transaction costs. *J. Finance* 40, 1283–1301.

[565] Levental, S., Skorohod, A.S. (1995) A necessary and sufficient condition for absence of arbitrage with tame portfolios. *Ann. Appl. Probab.* 5, 906–925.

[566] Levy, A. (1989) A note on the relationship between forward and futures prices. *J. Futures Markets* 9, 171–173.

[567] Levy, A., Avallaneda, M., Parás, A. (1994) A new approach for pricing derivative securities in markets with uncertain volatility: a "case study" on the trinomial tree. Working paper, Courant Institute of Mathematical Sciences.

[568] Levy, E. (1992) The valuation of average rate currency options. *J. Internat. Money Finance* 11, 474–491.

[569] Levy, E., Turnbull, S. (1992) Average intelligence, *Risk* 5(2), 53–59.

[570] Lintner, J. (1965) The valuation of risky assets and the selection of risky investments in stock portfolios and capital budgets. *Rev. Econom. Statist.* 47, 13–37.

[571] Lintner, J. (1965) Security prices, risk, and maximal gains from diversification. *J. Finance* 20, 587–616.

[572] Liptser, R.S., Shiryayev, A.N. (1977) *Statistics of Random Processes I. General Theory.* Springer, Berlin Heidelberg New York.

[573] Litzenberger, R., Ramaswamy, K. (1982) The effects of dividends on common stock prices. *J. Finance* 37, 429–443.

[574] Lo, A., MacKinlay, C. (1988) Stock markets do not follow random walks: evidence from a simple specification test. *Rev. Finan. Studies* 1, 41–66.

[575] Lo, A., Wang, J. (1995) Implementing option pricing models when asset returns are predictable. *J. Finance* 50, 87–129.

[576] Longstaff, F.A. (1989) A nonlinear general equilibrium model of the term structure of interest rates. *J. Finan. Econom.* 23, 195–224.

[577] Longstaff, F.A. (1990a) The valuation of options on yields. *J. Finan. Econom.* 26, 97–123.

[578] Longstaff, F.A. (1990b) Pricing options with extendible maturities: analysis and applications. *J. Finance* 45, 935–957.

[579] Longstaff, F.A. (1990c) Time-varying term premia and traditional hypotheses about the term structure. *J. Finance* 45, 1307–1314.

[580] Longstaff, F.A. (1993) The valuation of options on coupon bonds. *J. Bank. Finance* 17, 27–42.

[581] Longstaff, F.A., Schwartz, E.S. (1992a) Interest rate volatility and the term structure: a two-factor general equilibrium model. *J. Finance* 47, 1259–1282.

[582] Longstaff, F.A., Schwartz, E.S. (1992b) A two-factor interest rate model and contingent claims valuation. *J. Fixed Income* 3, December, 16–23.

[583] MacBeth, J.D., Merville, L.J. (1979) An empirical examination of the Black-Scholes call option pricing model. *J. Finance* 34, 1173–1186.

[584] MacBeth, J.D., Merville, L.J. (1980) Tests of the Black-Scholes and Cox call option valuation models. *J. Finance* 35, 285–303.

[585] McConnell, J.J., Schallheim, J.S. (1983) Valuation of asset leasing contracts. *J. Finan. Econom.* 12, 237–261.

[586] McCulloch, J.H. (1971) Measuring the term structure of interest rates. *J. Business* 44, 19–31.

[587] McCulloch, J.H. (1975a) An estimate of the liquidity premium. *J. Political Econom.* 83, 95–119.

[588] McCulloch, J.H. (1975b) The tax-adjusted yield curve. *J. Finance* 30, 811–830.

[589] McCulloch, J.H. (1993) A reexamination of traditional hypotheses about the term structure: a comment. *J. Finance* 48, 779–789.

[590] McDonald, R., Siegel, D. (1984) Option pricing when the underlying asset earns a below-equilibrium rate of return: a note. *J. Finance* 39, 261–265.

[591] McKean, H.P., Jr. (1965) Appendix: A free boundary problem for the heat equation arising from a problem in mathematical economics. *Industr. Manag. Review* 6, 32–39.

[592] MacKinlay A.C. (1987) On multivariate tests of the CAPM. *J. Finan. Econom.* 18, 341–371.

[593] MacMillan, L.W. (1986) Analytic approximation for the American put option. *Adv. in Futures Options Res.* 1, 119–139.

[594] Madan, D.B., Milne, F. (1991) Option pricing with V.G. martingale components. *Math. Finance* 1, 39–55.

[595] Madan, D.B., Milne, F. (1994) Contingent claims valued and hedged by pricing and investing in a basis. *Math. Finance* 3, 223-245.

[596] Madan, D.B., Seneta, E. (1990) The variance gamma (V.G.) model for share market returns. *J. Business* 63, 511–524.

[597] Madan, D.B., Milne, F., Shefrin, H. (1989) The multinomial option pricing model and its Brownian and Poisson limits. *Rev. Finan. Stud.* 2, 251–265.

[598] Madsen, C. (1994a) The pricing of options on coupon bonds. Working paper, Realkredit Danmark, Copenhagen.

[599] Madsen, C. (1994b) The pricing of interest rate contingent claims. Working paper, Realkredit Danmark, Copenhagen.

[600] Maghsoodi, Y. (1996) Solution of the extended CIR term structure and bond option valuation. *Math. Finance* 6, 89-109.

[601] Magill, M.J.P., Constantinides, G.M. (1976) Portfolio selection with transactions costs. *J. Econom. Theory* 13, 245–263.

[602] Manaster, S., Koehler, G. (1982) The calculation of implied variances from the Black-Scholes model: a note. *J. Finance* 37, 227–230.

[603] Mandelbrot, B. (1960) The Pareto-Lévy law and the distribution of income. *Internat. Econom. Rev.* 1, 79–106.

[604] Mandelbrot, B. (1963) The variation of certain speculative prices. *J. Business* 36, 394–419.

[605] Markowitz, H.M. (1952) Portfolio selection. *J. Finance* 7, 77–91.

[606] Markowitz, H.M. (1987) *Mean-Variance Analysis in Portfolio Choice and Capital Markets.* Basil Blackwell, Cambridge, Mass.

[607] Margrabe, W. (1978) The value of an option to exchange one asset for another. *J. Finance* 33, 177–186.

[608] Marsh, T.A., Rosenfeld, E.R. (1986) Non-trading, market marking, and estimates of stock price volatility. *J. Finan. Econom.* 15, 359–372.

[609] Mas-Collel, A. (1985) *The Theory of General Economic Equilibrium. A Differentiable Approach.* Cambridge University Press, Cambridge.

[610] Melino, A., Turnbull, S.M. (1990) Pricing foreign currency options with stochastic volatility. *J. Econometrics* 45, 239–265.

[611] Mercurio, F., Runggaldier, W.J. (1993) Option pricing for jump-diffusions: approximations and their interpretation. *Math. Finance* 3, 191–200.

[612] Mercurio, F., Vorst, T. (1996a) Option pricing with hedging at fixed trading dates. *Appl. Math. Finance* 3, 135–158.

[613] Mercurio, F., Vorst, T. (1996b) Option pricing and hedging in discrete time with transaction costs. To appear in: *Mathematics of Derivative Securities.* M.Dempster and S.Pliska, eds. Cambridge University Press, Cambridge.

[614] Merrick, J.J. (1990) *Financial Futures Markets: Structure, Pricing and Practice.* Harper and Row (Ballinger), New York.

[615] Merton, R.C. (1969) Lifetime portfolio selection under uncertainty: the continuous-time model. *Rev. Econom. Statist.* 51, 247–257.

[616] Merton, R.C. (1971) Optimum consumption and portfolio rules in a continuous-time model. *J. Econom. Theory* 3, 373–413.

[617] Merton, R.C. (1973a) Theory of rational option pricing. *Bell J. Econom. Manag. Sci.* 4, 141–183.

[618] Merton, R.C. (1973b) An intertemporal capital asset pricing model. *Econometrica* 41, 867–888.

[619] Merton, R.C. (1974) On the pricing of corporate debt: the risk structure of interest rates. *J. Finance* 29, 449–470.

[620] Merton, R.C. (1976) Option pricing when underlying stock returns are discontinuous. *J. Finan. Econom.* 3, 125–144.

[621] Merton, R.C. (1980) On estimating the expected return on the market: an exploratory investigation. *J. Finan. Econom.* 8, 323–361.

[622] Merton, R.C. (1990) *Continuous-Time Finance.* Basil Blackwell, Oxford.

[623] Meulbroek, L. (1992) A comparison of forward and futures prices of an interest rate-sensitive financial assets. *J. Finance* 47, 381–396.

[624] Miller, M.H. (1977) Debt and taxes. *J. Finance* 33, 261–275.

[625] Miltersen, K.R. (1994) An arbitrage theory of the term structure of interest rates. *Ann. Appl. Probab.* 4, 953–967.

[626] Miltersen, K., Sandmann, K., Sondermann, D. (1997) Closed form solutions for term structure derivatives with log-normal interest rates. To appear in *J. Finance.*

[627] Mittnik, S., Rachev, S.T. (1993) Modeling asset returns with alternative stable distributions. *J. Econometric Rev.* 12, 261–330, 347–389.

[628] Miura, R. (1992) A note on look-back options based on order statistics. *Hitotsubashi J. Commerce Manag.* 27, 15–28.

[629] Modest, D.M. (1984) On the pricing of stock index futures. *J. Portfolio Manag.* 10, 51–57.

[630] Mohamed, B. (1994) Simulations of transaction costs and optimal rehedging. *Appl. Math. Finance* 1, 49–62.

[631] Monat, P., Stricker, C. (1993) Fermeture de $G_T(\Theta)$ et de $c + G_T(\Theta)$. Working paper, Université de Franche-Comté, Besançon.

[632] Monat, P., Stricker, C. (1995) Föllmer-Schweizer decomposition and mean-variance hedging of general claims. *Ann. Probab.* 23, 605–628.

[633] Morse, J.N. (1988) Index futures and the implied volatility of options. *Rev. Futures Markets* 7, 324–333.

[634] Morton, A.J. (1989) Arbitrage and martingales. Doctoral dissertation, Cornell University, Ithaca.

[635] Morton, A.J., Pliska, S.R. (1995) Optimal portfolio management with fixed transaction costs. *Math.Finance* 5, 337-356.

[636] Mossin, J. (1966) Equilibrium in a capital asset market. *Econometrica* 35, 768–783.

[637] Mulinacci, S. (1996) An approximation of American option prices in a jump-diffusion model. *Stoch. Process. Appl.* 62, 1–17.

[638] Müller, S. (1985) *Arbitrage Pricing of Contingent Claims. Lecture Notes in Econom. and Math. Systems 254.* Springer, Berlin Heidelberg New York.

[639] Müller, S. (1989) On complete securities markets and the martingale property of securities prices. *Econom. Lett.* 31, 37–41.

[640] Musiela Musiela, M. (1993) Stochastic PDEs and term structure models. *Journées Internationales de Finance, IGR-AFFI.* La Baule, June 1993.

[641] Musiela Musiela, M. (1994) Nominal annual rates and lognormal volatility structure. Working paper, University of New South Wales.

[642] Musiela, M. (1995) General framework for pricing derivative securities. *Stochastic Process. Appl.* 55, 227–251.

[643] Musiela, M., Rutkowski, M. (1997) Continuous-time term structure models: a forward measure approach. To appear in *Finance and Stochastics.*

[644] Musiela, M., Sondermann, D. (1993) Different dynamical specifications of the term structure of interest rates and their implications. Working paper, University of Bonn.

[645] Musiela, M., Turnbull, S.M., Wakeman, L.M. (1993) Interest rate risk management. *Rev. Futures Markets* 12, 221–261.

[646] Myneni, R. (1992) The pricing of the American option. *Ann. Appl. Probab.* 2, 1–23.

[647] Nachman, D. (1989) Spanning and completeness with options. *Rev. Finan. Stud.* 1, 311–328.

[648] Naik, V., Uppal, R. (1994) Leverage constraints and the optimal hedging of stock and bond options. with transactions costs and trading restrictions. *J. Finan. Quant. Anal.* 29, 199-222.

[649] Natenberg, S. (1994) *Option Volatility and Pricing: Advanced Trading Strategies and Techniques.* Probus Publ. Co., Chicago (Illinois).

[650] Nelson, D.B. (1991) Conditional heteroskedasticity in asset returns: a new approach. *Econometrica* 59, 347–370.

[651] Nelson, D., Ramaswamy, K. (1990) Simple binomial processes as diffusion approximations in financial models. *Rev. Finan. Studies* 3, 393–430.

[652] Neuberger, A. (1990) Pricing swap options using the forward swap market. Working paper, London Business School.

[653] Nielsen, J.Aa., Sandmann, K. (1996) The pricing of Asian options under stochastic interest rates. *Appl. Math. Finance* 3, 209–236.

[654] Nyborg, K.G. (1996) The use and pricing of convertible bonds. *Appl. Math. Finance* 3, 167–190.

[655] Ocone, D.L., Karatzas, I. (1991) A generalized Clark representation formula with application to optimal portfolios. *Stochastics Stochastics Rep.* 34, 187–220.

[656] Omberg, E. (1987a) The valuation of American put options with exponential exercise policies. *Adv. in Futures Options Res.* 2, 117–142.

[657] Omberg, E. (1987b) A note on the convergence of binomial pricing and compound option models. *J. Finance* 42, 463–470.

[658] Ouknine, Y., Rutkowski, M. (1995) Local times of functions of continuous semimartingales. *Stochastic Anal. Appl.* 13, 211–231.

[659] Pagès H. (1987) Optimal consumption and portfolio policies when markets are incomplete. Working paper, MIT.

[660] Park, H.Y., Chen, A.H. (1985) Differences between futures and forward prices: a further investigation of the marking-to-market effects. *J. Futures Markets* 5, 77–88.

[661] Park, H.Y., Sears, R.S. (1985) Estimating stock index futures volatility through the prices of their options. *J. Futures Markets* 5, 223–237.

[662] Parkinson, M. (1977) Option pricing: the American put. *J. Business* 50, 21–36.

[663] Parkinson, M. (1980) The extreme value method for estimating the variance of the rate of return. *J. Business* 53, 61–66.

[664] Pearson, N.D., Sun, T.-S. (1994) Exploiting the conditional density in estimating the term structure: an application to the Cox, Ingersoll and Ross model. *J. Finance* 49, 1279–1304.

[665] Perrakis, S., Ryan, P.J. (1984) Option pricing bounds in discrete time. *J. Finance* 39, 519–525.

[666] Peters, E. (1989) Fractal structure in the capital markets. *Finan. Analysts J.* 45(4), 32–37.

[667] Pham, H., Touzi, N. (1996) Equilibrium state prices in a stochastic volatility model. *Math. Finance* 6, 215-236.

[668] Pham, H., Rheinländer, T., Schweizer, M. (1997) Mean-variance hedging for continuous processes: new proofs and examples. To appear in *Finance and Stochastics.*

[669] Picqué, M., Pontier, M. (1990) Optimal portfolio for a small investor in a market with discontinuous prices. *Appl. Math. Optimization* 22, 287–310.

[670] Platen, E. (1996) Explaining interest rate dynamics. Working paper, Australian National University, Canberra.

[671] Platen, E., Rebolledo, R. (1994) Pricing via anticipative stochastic calculus. *Ann. Appl. Probab.* 26, 1006–1021.

[672] Platen, E., Rebolledo, R. (1996) Principles for modelling financial markets. To appear in *J. Appl. Probab.* 33.

[673] Pliska, S.R. (1986) A stochastic calculus model of continuous trading: optimal portfolios. *Math. Oper. Res.* 11, 371–382.

[674] Pliska, S.R., Shalen, C.T. (1991) The effects of regulations on trading activity and return volatility in futures markets. *J. Futures Markets* 11, 135–151.

[675] Polakoff, M.A., Dizz, F. (1992) The theoretical source of autocorrelation in forward and futures price relationships. *J. Futures Markets* 12, 459–473.

[676] Poterba, J.M., Summers, L.H. (1988) Mean reversion in stock prices: evidence and implications. *J. Finan. Econom.* 22, 27–60.

[677] Praetz, P.D. (1972) The distribution of share price changes. *J. Business* 45, 49–55.

[678] Protter, P. (1990) *Stochastic Integration and Differential Equations.* Springer, Berlin Heidelberg New York.

[679] Rachev, S.T., Rüschendorf, L. (1994) Models for option prices. *Theory Probab. Appl.* 39, 120–152.

[680] Rady, S., Sandmann, K. (1994) The direct approach to debt option pricing. *Rev. Futures Markets* 13, 461–514.

[681] Ramaswamy, K., Sundaresan, S.M. (1985) The valuation of options on futures contracts. *J. Finance* 40, 1319–1340.

[682] Ramaswamy, K., Sundaresan, S.M. (1986) The valuation of floating-rate instruments, theory and evidence. *J. Finan. Econom.* 17, 251–272.

[683] Ray, C.I. (1993) *The Bond Market. Trading and Risk Management.* Irwin, Homewood (Illinois).

[684] Redhead, K. (1990) *Introduction to Financial Futures and Options.* Woodhead-Faulkner, Cambridge (Mass.)

[685] Reiner, E. (1992) Quanto mechanics. *Risk* 5(3), 59–63.

[686] Renault, E., Touzi, N. (1996) Option hedging and implied volatilities in a stochastic volatility model. *Math. Finance* 6, 279–302.

[687] Rendleman, R., Bartter, B. (1979) Two-state option pricing. *J. Finance* 34, 1093-1110.

[688] Rendleman, R., Bartter, B. (1980) The pricing of options on debt securities. *J. Finan. Quant. Anal.* 15, 11–24.

[689] Revuz, D., Yor, M. (1991) *Continuous Martingales and Brownian Motion.* Springer, Berlin Heidelberg New York.

[690] Richard, S.F. (1978) An arbitrage model of the term structure of interest rates. *J. Finan. Econom.* 6, 33–57.

[691] Richard, S.F., Sundaresan, M. (1981) A continuous time model of forward and futures prices in a multigood economy. *J. Finan. Econom.* 9, 347–372.

[692] Ritchken, P. (1987) *Options: Theory, Strategy and Applications.* Scott, Foresman and Co., Glenview (Illinois). bibitemritchk Ritchken, P. (1995) On pricing barrier options. it J. Derivatives 3, Winter 1995, 19–28.

[693] Ritchken, P., Sankarasubramanian, L. (1992) Pricing the quality option in Treasury bond futures. *Math. Finance* 2, 197–214.

[694] Ritchken, P., Sankarasubramanian, L. (1995a) Volatility structures of forward rates and the dynamics of the term structure. *Math. Finance* 5, 55–72.

[695] Ritchken, P., Sankarasubramanian, L. (1995b) The importance of forward rate volatility structures in pricing interest rate-sensitive claims. *J. Derivatives,* Fall 1995, 25–41.

[696] Rogers, L.C.G. (1995) Which model for term-structure of interest rates should one use? In: *IMA Vol. 65: Mathematical Finance,* M.H.A.Davis , eds. Springer, Berlin Heidelberg New York, pp. 93–116.

[697] Rogers, L.C.G. (1994) Equivalent martingale measures and no-arbitrage. *Stochastics Stochastics Rep.* 51, 41–49.

[698] Rogers, L.C.G. (1996) Gaussian errors. *Risk* 9(1), 42–45.

[699] Rogers, L.C.G. (1997) Arbitrage from fractional Brownian motion. *Math. Finance* 7, 95–105.

[700] Rogers, L.C.G., Satchell, S.E. (1991) Estimating variance from high, low and closing prices. *Ann. Appl. Probab.* 1, 504–512.

[701] Rogers, C., Shi, Z. (1995) The value of an Asian option. *J. Appl. Prob.* 32, 1077–1088.

[702] Rogers, L.C.G., Williams, D. (1987) *Diffusions, Markov Processes and Martingales, Volume 2: Itô Calculus.* Wiley, Chichester New York.

[703] Roll, R. (1977a) An analytic valuation formula for unprotected American call options on stocks with known dividends. *J. Finan. Econom.* 5, 251–258.

[704] Roll, R. (1977b) A critique of the asset pricing theory's tests. *J. Finan. Econom.* 5, 129–176.

[705] Roll, R., Ross, S.A. (1980) An empirical investigation of the arbitrage pricing theory. *J. Finance* 35, 1073–1104.

[706] Rosenburg, B., Marathe, V. (1979) Tests of capital asset pricing hypothesis. *Res. Finance* 1, 115–223.

[707] Ross, S.A. (1976a) The arbitrage theory of capital asset pricing. *J. Econom. Theory* 13, 341–360.

[708] Ross, S.A. (1976b) Options and efficiency. *Quart. J. Econom.* 90, 75-89.

[709] Ross, S.A. (1978) Mutual fund separation in financial theory: the separation distributions. *J. Econom. Theory* 17, 254–286.

[710] Ross, S.A. (1985) Debt and taxes and uncertainty. *J. Finance* 40, 637–657.

[711] Ross, S.A. (1987) Arbitrage and martingales with taxation. *J. Political Economy* 95, 371–393.

[712] Ross, S.A. (1995) Hedging long run commitments: exercises in incomplete market pricing. Working paper, Yale School of Management.

[713] Rubinstein, M. (1976) The valuation of uncertain income streams and the pricing of options. *Bell J. Econom.* 7, 407–425.

[714] Rubinstein, M. (1983) Displaced diffusion option pricing. *J. Finance* 38, 213–217.

[715] Rubinstein, M. (1984) A simple formula for the expected rate of return of an option over a finite holding period. *J. Finance* 39, 1503–1509.

[716] Rubinstein, M. (1985) Nonparametric tests of alternative option pricing models using all reported trades and quotes on the thirty most active CBOE option classes from August 23, 1976 through August 31, 1978. *J. Finance* 40, 455–480.

[717] Rubinstein, M. (1991a) Somewhere over the rainbow. *Risk* 4(11), 61–63.

[718] Rubinstein, M. (1991b) Exotic options. Working paper, University of California, Berkeley.

[719] Rubinstein, M. (1994) Implied binomial trees. *J. Finance* 49, 771–818.

[720] Rubinstein, M., Reiner, E. (1991) Breaking down the barriers. *Risk* 4(8), 28–35.

[721] Rudd, A., Clasing, H.K. (1988) *Modern Portfolio Theory.* 2nd ed. Andrew Rudd, Orinda (Cal.)

[722] Runggaldier, W., Schweizer, M. (1995) Convergence of option values under incompleteness. In: *Seminar on Stochastic Analysis, Random Fields and Applications,* E.Bolthausen , eds. Birkhäuser, Boston Basel Berlin, pp. 365–384.

[723] Rutkowski, M. (1994) The early exercise premium representation of foreign market American options. *Math. Finance* 4, 313–325.

[724] Rutkowski, M. (1995) On continuous-time models of term structure of interest rates. In: *Applied Stochastic Analysis,* H.J.Engelbert, ed. Gordon and Breach, New York.

[725] Rutkowski, M. (1996a) Valuation and hedging of contingent claims in the HJM model with deterministic volatilities. *Appl. Math. Finance* 3, 237–267.

[726] Rutkowski, M. (1996b) Risk-minimizing hedging of contingent claims in incomplete models of financial markets. *Matematyka Stosowana* 39, 41–73.

[727] Rutkowski, M. (1997) Optimality of replication in the CRR model with transaction costs. To appear in *Appl. Mathematicae.*

[728] Ruttiens, A. (1990) Currency options on average exchange rates pricing and exposure management. *20th Annual Meeting of the Decision Science Institute,* New Orleans 1990.

[729] Samuelson, P.A. (1965) Rational theory of warrant prices. *Industr. Manag. Rev.* 6, 13–31.

[730] Samuelson, P.A. (1969) Lifetime portfolio selection by dynamic stochastic programming. *Rev. Econom. Statist.* 51, 239–246.

[731] Samuelson, P.A. (1970) The fundamental approximation theorem of portfolio analysis in terms of means, variances, and higher moments. *Rev. Econom. Stud.* 37, 537–542.

[732] Samuelson, P.A. (1973) Mathematics of speculative prices. *SIAM Review* 15, 1–42.

[733] Samuelson, P.A., Merton, C. (1969) A complete model of warrant pricing that maximizes utility. *Industr. Manag. Rev.* 10, 17–46.

[734] Sandmann, K. (1993) The pricing of options with an uncertain interest rate: a discrete-time approach. *Math. Finance* 3, 201–216.

[735] Sandmann, K., Sondermann, D. (1989) A term structure model and the pricing of interest rate options. Working paper, University of Bonn.

[736] Sandmann, K., Sondermann, D. (1993) A term structure model and the pricing of interest rate derivatives. *Rev. Futures Markets* 12, 391–423.

[737] Sandmann, K., Sondermann, D. (1994) On the stability of lognormal interest rate models and the pricing of Eurodollar futures. Working paper, University of Bonn.

[738] Sandmann, K., Sondermann, D., Miltersen, K.R. (1995) Closed form term structure derivatives in a Heath-Jarrow-Morton model with log-normal annually compounded interest rates. In: *Proceedings of the Seventh Annual European Futures Research Symposium Bonn, 1994.* Chicago Board of Trade, pp. 145–165.

[739] Schachermayer, W. (1992) A Hilbert space proof of the fundamental theorem of asset pricing in finite discrete time. *Insurance Math. Econom.* 11, 249–257.

[740] Schachermayer, W. (1993) A counter-example to several problems in the theory of asset pricing. *Math. Finance* 3, 217–229.

[741] Schachermayer, W. (1994) Martingale measures for discrete time processes with infinite horizon. *Math. Finance* 4, 25–55.

[742] Schaefer, S.M. (1981) Measuring a tax specific term structure of interest rates in the market for British government securities. *Econom. J.* 91, 415–438.

[743] Schaefer, S.M., Schwartz, E.S. (1984) A two-factor model of the term structure: an approximate analytical solution. *J. Finan. Quant. Anal.* 4, 413–424.

[744] Schaefer, S.M., Schwartz, E.S. (1987) Time-dependent variance and the pricing of bond options. *J. Finance* 42, 1113–1128.

[745] Schäl, M. (1994) On quadratic cost criteria for option hedging. *Math. Oper. Res.* 19, 121–131.

[746] Scheinkman, J.A., LeBaron, B. (1989) Nonlinear dynamics and stock returns. *J. Business* 62, 311–337.

[747] Schlögl, E., Sommer, D. (1994) On short rate processes and their implications for term structure movements. Working paper, University of Bonn.

[748] Schmalensee, R., Trippi, R. (1978) Common stock volatility expectations implied by option premia. *J. Finance* 33, 129–147.

[749] Schmidt, W.M. (1994) On a general class of one-factor models for the term structure of interest rates. To appear in *Finance and Stochastics.*

[750] Scholes, M. (1976) Taxes and the pricing of options. *J. Finance* 31, 319–332.

[751] Schwartz, E.S. (1977) The valuation of warrants: implementing a new approach. *J. Finan. Econom.* 4, 79–93.

[752] Schweizer, M. (1990) Risk-minimality and orthogonality of martingales. *Stochastics Stochastics Rep.* 30, 123–131.

[753] Schweizer, M. (1991) Option hedging for semimartingales. *Stochastic Process. Appl.* 37, 339–363.

[754] Schweizer, M. (1992a) Mean-variance hedging for general claims. *Ann. Appl. Probab.* 2, 171–179.

[755] Schweizer, M. (1992b) Martingale densities for general asset prices. *J. Math. Econom.* 21, 363–378.

[756] Schweizer, M. (1994a) A projection result for semimartingales. *Stochastics Stochastics Rep.* 50, 175–183.

[757] Schweizer, M. (1994b) Risk-minimizing hedging strategies under restricted information. *Math. Finance* 4 , 327–342.

[758] Schweizer, M. (1994c) Approximating random variables by stochastic integrals. *Ann. Probab.* 22, 1536–1575.

[759] Schweizer, M. (1995a) On the minimal martingale measure and the Föllmer-Schweizer decomposition. *Stochastic Anal. Appl.* 13, 573–599.

[760] Schweizer, M. (1995b) Variance-optimal hedging in discrete-time. *Math. Oper. Res.* 20, 1–32.

[761] Schweizer, M. (1996) Approximation pricing and the variance-optimal martingale measure. *Ann. Appl. Prob.* 24, 206-236.

[762] Schwert, G.W. (1989) Why does the stock market volatility change over time? *J. Finance* 44, 1115–1153.

[763] Schwert, G.W. (1990) Stock market volatility. *Finan. Analysts J.* 46(3), 23–34.

[764] Schwert, G.W., Seguin, P.J. (1990) Heteroskedasticity in stock returns. *J. Finance* 45, 1129–1155.

[765] Scott, L.O. (1987) Option pricing when the variance changes randomly: theory, estimation, and an application. *J. Finan. Quant. Anal.* 22, 419–438.

[766] Scott, L.O. (1991) Random-variance option pricing: empirical tests of the model and delta-sigma hedging. *Adv. in Futures Options Res.* 5, 113–135.

[767] Shanken, J. (1992) The current state of arbitrage pricing theory. *J. Finance* 47, 1569–1574.

[768] Sharpe, W. (1964) Capital asset prices: a theory of market equilibrium under conditions of risk. *J. Finance* 19, 425–442.

[769] Sharpe, W. (1970) *Portfolio Theory and Capital Markets.* McGraw-Hill, New York.

[770] Sharpe, W. (1978) *Investments.* Prentice-Hall, Englewood Cliffs (New Jersey).

[771] Shastri, K., Tandon, K. (1986a) Valuation of foreign currency options: some empirical tests. *J. Finan. Quant. Anal.* 21, 145–160.

[772] Shastri, K., Tandon, K. (1986b) An empirical test of a valuation model for American options on futures contracts. *J. Finan. Quant. Anal.* 21, 377–392.

[773] Shastri, K., Tandon, K. (1986c) On the use of European models to price American options on foreign currency. *J. Futures Markets* 6, 93–108.

[774] Shastri, K., Wethyavivorn, K. (1987) The valuation of currency options for alternate stochastic processes. *J. Finan. Res.* 10, 283–293.

[775] Shea, G.S. (1984) Pitfalls in smoothing interest rate term structure data: equilibrium models and spline approximations. *J. Finan. Quant. Anal.* 19, 253–270.

[776] Shen, Q. (1990) Bid-ask prices for call options with transaction costs. Working paper, University of Pennsylvania.

[777] Shepp, L.A., Shiryayev, A.N. (1993) The Russian option: reduced regret. *Ann. Appl. Probab.* 3, 631–640.

[778] Shepp, L.A., Shiryayev, A.N. (1994) A new look at the "Russian option". *Theory Probab. Appl.* 39, 103–119.

[779] Shirakawa, H. (1991) Interest rate option pricing with Poisson-Gaussian forward rate curve processes. *Math. Finance* 1, 77–94.

[780] Shirakawa, H., Konno, H. (1995) Pricing of options under the proportional transaction costs. Working paper, Tokyo Institute of Technology.

[781] Shiryayev, A.N. (1984) *Probability.* Springer, Berlin Heidelberg New York.

[782] Shiryayev, A.N. (1994) On some basic concepts and some basic stochastic models used in finance. *Theory Probab. Appl.* 39, 1–13.

[783] Shiryayev, A.N., Kabanov, Y.M., Kramkov, D.O., Melnikov, A.V. (1994a) Toward the theory of pricing of options of both European and American types. I. Discrete time. *Theory Probab. Appl.* 39, 14–60.

[784] Shiryayev, A.N., Kabanov, Y.M., Kramkov, D.O., Melnikov, A.V. (1994b) Toward the theory of pricing of options of both European and American types. II. Continuous time. *Theory Probab. Appl.* 39, 61–102.

[785] Shreve, S.E. (1991) A control theorist's view of asset pricing. In: *Applied Stochastic Analysis,* M.H.A.Davis and R.J.Elliott, eds. Gordon and Breach, New York, pp. 415–445.

[786] Shreve, S.E., Soner, H.M. (1994) Optimal investment and consumption with transaction costs. *Ann. Appl. Probab.* 4, 609–692.

[787] Shreve, S.E., Soner, H.M., Xu, G.-L. (1991) Optimal investment and consumption with two bonds and transaction costs. *Math. Finance* 1, 53–84.

[788] Siegel, D.R., Siegel, D.F. (1990) *The Futures Markets.* Probus Publ. Co., Chicago (Illinois).

[789] Skinner, D.J. (1989) Options markets and stock return volatility. *J. Finan. Econom.* 23, 61–78.

[790] Smith, C.W., Jr. (1976) Option pricing: a review. *J. Finan. Econom.* 3, 3–54.

[791] Soner, H.M., Shreve, S.E., Cvitanić, J. (1995) There is no nontrivial hedging portfolio for option pricing with transaction costs. *Ann. Appl. Probab.* 5, 327–355.

[792] Sprenkle, C.M. (1964) Warrant prices as indicators of expectations and preferences. In: *The Random Character of Stock Market Prices,* P.Cootner, ed. MIT Press, Cambridge (Mass.), pp. 412–474.

[793] Stambaugh, R.F. (1988) The information in forward rates: implications of models of the term structure. *J. Finan. Econom.* 21, 41–70.

[794] Stapleton, R.C., Subrahmanyam, A.(1984) The valuation of multivariate contingent claims in discrete time models. *J. Finance* 39, 207–228.

[795] Stein, E.M., Stein, J.C. (1991) Stock price distributions with stochastic volatility: an analytic approach. *Rev. Finan. Stud.* 4, 727–752.

[796] Sterk, W.E. (1982) Tests of two models for valuing call options on stocks with dividends. *J. Finance* 37, 1229–1238.

[797] Stigler, R.J. (1990) The term structure of interest rates. In: *Handbook of Monetary Economics, Vol. I.,* B.M.Friedman and F.H.Hahn, eds. North-Holland, Amsterdam New York, pp. 627–722.

[798] Stricker, C. (1984) Integral representation in the theory of continuous trading. *Stochastics* 13, 249–257.

[799] Stricker, C. (1990) Arbitrage et lois de martingale. *Ann. Inst. H.Poincaré Probab. Statist.* 26, 451–460.

[800] Stulz, R.M. (1981) A model of international asset pricing. *J. Finan. Econom.* 9, 383–407.

[801] Stulz, R.M. (1982) Options on the minimum or maximum of two risky assets. *J. Finan. Econom.* 10, 161–185.

[802] Stulz, R.M. (1984) Optimal hedging policies. *J. Finan. Quant. Anal.* 19, 127–140.

[803] Subrahmanyam, A. (1991) A theory of trading in stock index futures. *Rev. Finan. Stud.* 4, 17–51.

[804] Sundaresan, S. (1991) Futures prices on yields, forward prices, and implied forward prices from term structure. *J. Finan. Quant. Anal.* 26, 409–424.

[805] Sutcliffe, C.M.S. (1993) *Stock Index Futures.* Chapman & Hall, London.

[806] Swidler S., Diltz, J.D. (1992) Implied volatilities and transaction costs. *J. Finan. Quant. Anal.* 27, 437–447.

[807] Taksar, M., Klass, M.J., Assaf, D. (1988) A diffusion model for optimal portfolio selection in the presence of brokerage fees. *Math. Oper. Res.* 13, 277–294.

[808] Tanudjaja, S. (1996) American option valuation in Gaussian HJM. Doctoral dissertation, University of New South Wales, Sydney.

[809] Taqqu, M.S., Willinger, W. (1987) The analysis of finite security markets using martingales. *Adv. in Appl. Probab.* 19, 1–25.

[810] Taylor, S.J. (1994) Modeling stochastic volatility: a review and comparative study. *Math. Finance* 4, 183–204.

[811] Titman, S., Torous, W. (1989) Valuing commercial mortgages: an empirical investigation of the contingent claims approach to pricing risky debt. *J. Finance* 44, 345–373.

[812] Torous, W.N. (1985) Differential taxation and the equilibrium structure of interest rates. *J. Business Finance* 9, 363–385.

[813] Tourin, A., Zariphopoulou, T. (1995) Portfolio selection with transaction costs. In: *Seminar on Stochastic Analysis, Random Fields and Applications,* E.Bolthausen , eds. Birkhäuser, Boston Basel Berlin, pp. 385–391.

[814] Tucker, A.L., Peterson, D.R., Scott, E. (1988) Tests of the Black-Scholes and constant elasticity of variance currency option valuation model. *J. Finan. Res.* 11, 201–213.

[815] Turnbull, S.M., Milne, F. (1991) A simple approach to the pricing of interest rate options. *Rev. Finan. Stud.* 4, 87–120.

[816] Turnbull, S.M., Wakeman, L.M. (1991) A quick algorithm for pricing European average options. *J. Finan. Quant. Anal.* 26, 377–389.

[817] van Horne, J.C. (1982) Implied tax rates and the valuation of discount bonds. *J. Business Finance* 6, 145–159.

[818] van Moerbeke, P. (1976) On optimal stopping and free boundary problem. *Arch. Rational Mech. Anal.* 60, 101–148.

[819] Vargiolu, T. (1996) Invariant measures for a Langevin equation describing forward rates in an arbitrage free market. Working paper, Scuola Normale Superiore, Pisa.

[820] Vasicek, O. (1977) An equilibrium characterisation of the term structure. *J. Finan. Econom.* 5, 177–188.

[821] Vorst, T. (1992) Prices and hedge ratios of average exchange rate options. *Internat. Rev. Finan. Anal.* 1, 179–193.

[822] West, K.D. (1988) Bubbles, fads and stock price volatility tests: a partial evaluation. *J. Finance* 43, 639–656.

[823] Whaley, R. (1982) Valuation of American call options on dividend-paying stocks: empirical tests. *J. Finan. Econom.* 10, 29–58.

[824] Whaley, R. (1986) Valuation of American futures options: theory and empirical tests. *J. Finance* 41, 127–150.

[825] Whalley, E., Wilmott, P. (1992) Derivative pricing and transaction costs. Working paper, Oxford University.

[826] Whalley, E., Wilmott, P. (1993a) A hedging strategy and option valuation model with transaction costs. Working paper, Oxford University.

[827] Whalley, E., Wilmott, P. (1993b) A comparison of hedging strategies. Working paper, Oxford University.

[828] Wiggins, J.B. (1987) Option values under stochastic volatility: theory and empirical estimates. *J. Finan. Econom.* 19, 351–372.

[829] Williams, D. (1979) *Diffusions, Markov Processes and Martingales, Volume 1: Foundations.* Wiley, Chichester New York.

[830] Willinger, W., Taqqu, M.S. (1989) Pathwise stochastic integration and applications to the theory of continuous trading. *Stochastic Process. Appl.* 32, 253–280.

[831] Willinger, W., Taqqu, M.S. (1991) Toward a convergence theory for continuous stochastic securities market models. *Math. Finance* 1, 55–99.

[832] Wilmott, P., Dewynne, J.N., Howison, S. (1993) *Option Pricing: Mathematical Models and Computation.* Oxford Financial Press, Oxford.

[833] Wilmott, P., Howison, S., Dewynne, J. (1995) *The Mathematics of Financial Derivatives. A Student Introduction.* Cambridge University Press, Cambridge.

[834] Wolf, A. (1982) Fundamentals of commodity options on futures. *J. Futures Markets* 2, 391–408.

[835] Yor, M. (1992) On some exponential functionals of Brownian motion. *Adv. in Appl. Probab.* 24, 509–531.

[836] Yor, M. (1993) From planar Brownian wingdings to Asian options. *Insurance Math. Econom.* 13, 23–34.

[837] Yor, M. (1995) The distribution of Brownian quantiles. *J. Appl. Probab.* 32, 405–416.926–945.