

**Merton, Robert C.**

**Optimum consumption and portfolio rules in a continuous-time model.** (English)

Zbl 1011.91502

J. Econ. Theory 3, No. 4, 373-413 (1971).

From the introduction: In an earlier paper [the author, Rev. Econ. Stat. 51, 247-257 (1969)], we examined the continuous-time consumption-portfolio problem for an individual whose income is generated by capital gains on investments in assets with prices assumed to satisfy the 'geometric Brownian motion' hypothesis; i.e., we studied  $\text{Max} E \int_0^T U(C, t) dt$ . The present paper extends these results for more general utility functions, price behavior assumptions, and for income generated also from noncapital gains sources. It is shown that if the 'geometric Brownian motion' hypothesis is accepted, then a general 'separation' or 'mutual fund' theorem can be proved such that, in this model, the classical Tobin mean-variance rules hold without the objectionable assumptions of quadratic utility or of normality of distributions for prices."

**MSC:**

91G10 Portfolio theory

91B16 Utility theory

Cited in **17** Reviews  
Cited in **968** Documents

**Full Text:** [DOI](#)

**References:**

- [1] Cass, D.; Stiglitz, J. E.: The structure of investor preferences and asset returns, and separability in portfolio allocation: A contribution to the pure theory of mutual funds. J. econ. Theory 2, 122-160 (1970)
- [2] Cootner, P.: The random character of stock market prices. (1964)
- [3] Cox, D. A.; Miller, H. D.: The theory of stochastic processes. (1968) · [Zbl 0149.12902](#)
- [4] Dreyfus, S. E.: Dynamic programming and the calculus of variations. (1965) · [Zbl 0193.19401](#)
- [5] Fischer, S.: Essays on assets and contingent commodities. Ph.d. dissertation (August, 1969)
- [6] N. H. Hakansson, Optimal investment and consumption strategies under risk for a class of utility functions, Econometrica to appear. · [Zbl 0205.48902](#)
- [7] Itô, K.: On stochastic differential equations. Mem. amer. Math. soc., No. No. 4 (1951) · [Zbl 0045.07603](#)
- [8] Itô, K.; Jr., H. P. McKean: Diffusion processes and their sample paths. (1964)
- [9] Kushner, H. J.: Stochastic stability and control. (1967) · [Zbl 0244.93065](#)
- [10] Leland, H. E.: Dynamic portfolio theory. Ph.d. dissertation (May, 1968)
- [11] Jr., H. P. McKean: Stochastic integrals. (1969) · [Zbl 0191.46603](#)
- [12] Merton, R. C.: Lifetime portfolio selection under uncertainty: the continuous-time case. Rev. econ. Statist. 51, 247-257 (August, 1969)
- [13] Samuelson, P. A.: Lifetime portfolio selection by dynamic stochastic programming. Rev. econ. Statist. 51, 239-246 (August 1969)
- [14] Samuelson, P. A.: The fundamental approximation theorem of portfolio analysis in terms of means, variances and higher moments. Rev. econ. Stud. (October, 1970) · [Zbl 0212.52001](#)
- [15] Stratonovich, R. L.: Conditional Markov processes and their application to the theory of optimal control. (1968) · [Zbl 0159.46804](#)
- [16] Black, F.: Individual investment and consumption strategies under uncertainty. Associates in finance financial note no. 6C (September, 1970)

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