



On the Mathematics and Economic Assumptions of Continuous-Time Models (Classic Reprint)

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Excerpt from *On the Mathematics and Economic Assumptions of Continuous-Time Models* The second component of cost is that the mathematical tools required for the formal manipulations used to derive the continuous-time equations are somewhat specialized and, therefore, may not be familiar. For example, the sample paths for stochastic variables generated by diffusion processes, while continuous, are almost nowhere differentiable in the usual sense, and therefore a more general type of differential equation is required to express the dynamics of such processes. While there is a substantial mathematics literature on these generalized stochastic equations, the derivations, although elegant, are often cryptic and difficult to follow. Moreover, these derivations provide little insight into the relationships between the formal mathematical assumptions and the corresponding economic assumptions. Hence, this paper attempts to bridge this gap by using only elementary probability methods to derive the basic mathematical theorems required for continuous time analysis and as part of the derivations to make explicit the economic assumptions implicitly imbedded in the mathematical assumptions. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully any imperfections that remain are intentionally left to preserve the state of such historical works.

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