

Multi-Stage Financial Planning Models: Integrating Stochastic Programs and Policy Simulators

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July 19, 2007

Abstract

This chapter reviews multi-stage financial planning models, with a focus on practical approaches for optimizing investors' performance over time. We discuss two major frameworks for constructing financial planning models: 1) policy rule simulation and optimization; and 2) multi-stage stochastic programming. We advocate an integrated approach, in which a stylized stochastic program helps the investor discover robust decision/policy rules. In the second stage, the policy optimizer compares policy rules as well as provides detailed information about future investment performance. To illustrate benefits, we apply the dual strategy to defined benefit pension plans in the United States.