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A. Duran* (ahd1@pitt.edu), University of Pittsburgh, Department of Mathematics, 301 Thackeray Hall, Pittsburgh, PA 15260, and **G. Caginalp** (caginalp@pitt.edu), University of Pittsburgh, Department of Mathematics, 301 Thackeray Hall, Pittsburgh, PA 15260. *Differential Equations and Computational Optimization for Closed End Funds.*

Differential equations are powerful tools to understand price dynamics and the corresponding cognitive and emotional factors in financial markets. In this paper, we study overreaction behavior and computational optimization techniques for a large set of closed end funds such as Specialized Equity Funds (SEF), General Equity Funds (GEF) and World Equity Funds (WEF), trading in US markets. We propose a mathematical model by combining an implementation of a state-of-the-art optimization algorithm and a system of nonlinear differential equations to describe price dynamics. The results of our statistical methods in real data confirm the model. (Received September 26, 2005)