Abstract: The thesis studies the problem of inefficiencies in the financial markets. The first section describes the fundamental concepts, such as the efficient market hypothesis and futures contracts. The necessary mathematics is summarized in the second part, which deals with the link between the futures price and the martingale. The nonlinear regression is introduced and the greatest emphasis is placed on the description of the functional linear model with a scalar response. The main part focuses on the application of this theory. Two models are proposed for predicting prices based on their historical changes. The first model is nonlinear and is based on the assumption that the impact of the price change on the prediction process diminishes exponentially with time. The second one is linear and directly estimates the effect of particular changes. Both models are compared in terms of their ability to predict inefficiencies, calculation costs and stability.