Chapter 19
A Competitive Approach to Financial Issues: Modern Finance Theory

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ABSTRACT
Efficient Market Hypothesis (EMH) is a cornerstone in modern finance theory. Efficient market hypothesis states that it is impossible to make abnormal returns in financial markets because financial asset prices always reflect all available information. This chapter was undertaken in order to give a brief survey of modern finance theory by mainly focusing on the efficient market hypothesis. The authors also discuss the empirical foundations of the efficient market hypothesis. Finally, the main challenges to the efficient market hypothesis are introduced in order to point out a perspective for future research.

INTRODUCTION
There is one important caveat to the notion that we live in a new economy, and that is human psychology...which appears essentially immutable. - Alan Greenspan, September 4th, 1998

In Modern Finance literature, much of economic and financial theory is based on the notion that individuals act rationally and consider all available information in the decision-making process. The Efficient Markets Hypothesis (EMH) is one of the most crucial building blocks of modern finance theory. The EMH argues that competition between investors seeking abnormal profits drives prices to their “correct” value. The EMH does not assume that all investors are rational, but it does assume that markets are rational. The EMH does not assume that markets can foresee the future, but it does assume that markets make unbiased forecasts of the future. In contrast, behavioral finance assumes that, in some circumstances, financial markets are informationally inefficient. Contrary to EMH theory, human decision-making is the starting point for behavioral finance.

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First of all, this section will make a brief survey of conventional finance theory, focusing on the main topics of this area in literature. These main topics include the following: non-behavioral finance built on the efficient market hypothesis; rational expectations hypothesis and random walk hypothesis. Then the link between market efficiency and security returns will be introduced with the help of empirical findings of previous studies from the literature. Finally the challenges to the efficient market hypothesis will be briefly discussed in order to show the possible direction for the future research in this area. And the concluding remarks are presented in the final section of this chapter.

MODERN FINANCE THEORY: THEORETICAL BACKGROUND

In recent years, the majority of financial and economic theory has been based upon the idea that individuals’ actions are guided by rationality—that people make decisions in light of all the information available to them. Andrikopoulos noted that the years between 1950 and 1960 were the most productive period in finance thought. This was the period in which finance changed from a descriptive discipline to a modern science full of new ideas that needed to be refined. Finance literature focused on exploiting the full potential of mathematical probabilistic and optimisation models. These techniques led to the construction of new theories and models, such as portfolio optimization theory, the capital asset pricing model, and the efficient markets hypothesis. These principles would constitute key influences in the years to come (Andrikopoulos, 2007, p. 53), during which empirical research focused on EMH testing and asset prices modelling.

Among these financial theories, special interest was directed to EMH, which represents the cornerstone of standard academic finance to this day. Although EMH is an appealing description of competitive market equilibrium, it is difficult to follow the developments in financial economics of today’s global world in a single direction. This difficulty arises because schools of thought overlap, theories and empirical research are lagging, and technology has greatly changed the way academics think and do research (Buchanan & Bowman, 1995, p. 156). Within two decades of the introduction of these ideas, contradictory evidence from financial markets around the world began to emerge. The appearance of many anomalies led some academics to reconsider their initial beliefs about the applicability of the leading theories of modern finance. This was the beginning of a new era -- the era of behavioral finance. As the new ideas of behavioral finance were introduced, a rigorous academic debate commenced on the validity of these new theories.

MAIN FOCUS OF THE CHAPTER

Modern finance is the body of knowledge built on the pillars of the arbitrage principles of Miller and Modigliani, the portfolio principles of Markowitz, the capital asset pricing theory of Sharpe, Lintner, and Black, and the option-pricing theory of Black, Scholes, and Merton. Modern finance is also based upon Fama’s Efficient Market Hypothesis, which is both the most regarded and the most criticized of the principles. Modern finance is compelling because it uses a minimum number of tools to build a unified theory intended to answer all the questions of finance. However, few theories are consistent with all the empirical evidence, and modern finance is no exception. The Efficient Market Hypothesis (EMH) is based on a simple assumption that risk is defined by volatility. According to the theory, investors are risk adverse: they will accept lower returns for a less volatile investment, but are willing to accept more risk for higher payoffs. The theory is simple and elegant, and leads into ingenious mathematical proofs and equations, which may be why it has become so widely accepted (Morien, 2005, p. 1).