Market Efficiency

The economic reasoning behind market efficiency is deceptively simple. If an investor knows that an asset price will increase tomorrow, then he buys it today. If all investors try to buy the asset today, then in market equilibrium the price increases today to equal tomorrow's expected price. Market efficiency implies there are no expected (excess) returns, or (approximately) that price changes are unpredictable.

Eugene Fama in a famous article(1970, Efficient Capital Markets: A Review of Theory and Empirical Work, Journal of Finance, 25, 383-417) formalized the notion of an efficient market and presented tests of efficiency. Burton Makiel (1992, Random Walk Down Wall Street) expands on Fama's definition:

> A capital market is said to be efficient if it fully and correctly reflects all relevant information in determining security prices. Formally, the market is said to be efficient with respect to some information set…if security prices would be unaffected by revealing that information to all participants. Moreover, efficiency with respect to an information set….implies that it is impossible to make economic profits by trading on the basis of [that information set].

The classic taxonomy of information sets distinguishes among

Weak-form Efficiency: The information set includes only the history of prices or returns.
Semistrong-form Efficiency: The information set includes all publicly available information.
Strong-form Efficiency: The information set includes all (public and private) information.

Our task is to test for **Weak-form Efficiency**. A good starting reference is Campbell, Lo, and MacKinlay, The Econometrics of Financial Markets, Chapters 1 & 2.