Efficient Markets Hypothesis

Financial Markets

A market is a place where the negotiated exchange of assets and liabilities occurs

Characteristics of financial markets

Many buyers and sellers - frequently the same

Very liquid and highly volatile

Lots of cheap and widely available information

London Stock Exchange

£4 - £6 billion /day

International FOREX

$1- 1.5 trillion / day

Types of Financial Markets

Open outcry markets

Buyers and sellers meet face to face

Commodity markets

Quote driven systems

Buyers and sellers interact through communication systems

Private markets

Inter-bank foreign exchange markets

Arrangements for 'suitable' parties

Characteristics of buyers and sellers

Rational

Profit driven

Well informed

Seek a reward for a risk

Characteristics of a market price

Equilibrium price

Function of supply and demand

For every buyer there is a seller

In general it is often the operations of speculators and arbitrageurs who constantly seek bargains that forces markets and prices back to equilibrium

Understanding market efficiency

In terms of stock markets and capital markets – generally refers to pricing efficiency

Pricing efficiency

Refers to the notion that prices reflect rapidly in an unbiased way all available information

Investment in financial assets should not on average produce abnormal returns

Other types of efficiency

Operational efficiency

Refers to the level of costs of carrying out transactions in capital markets

Allocational efficiency

Refers to the extent to which capital is allocated to the most profitable enterprise
(This should be a product of pricing efficiency)

Pricing efficiency emerges because the price of assets are adjusted to reflect expected future cash flows

Efficient markets and perfect markets

A perfect market has the following characteristics

Free information
No transaction costs
No taxes
Perfect competition between market participants
Financial assets are infinitely divisible
Bankruptcies are costless

Perfect markets imply efficient markets

However

Efficient markets do not require perfect markets

The importance of market efficiency

Promotes investor trust in the market and thus encourages capital investment

Promotes allocational efficiency

Improves market information and therefore choice of investments

Efficient Market Hypothesis

A security price is an equilibrium price between rational, well-informed, profit seeking decision makers.

Such buy/sell decisions are based on available information

THEREFORE

Price of a financial security is based on available information

THE FORMAL HYPOTHESIS

ALL AVAILABLE INFORMATION IN THE PUBLIC DOMAIN IS DISCOUNTED INTO THE PRICE OF A FINANCIAL SECURITY

Proving the efficient markets hypothesis

The hypothesis cannot be proved directly

Fama (1970) suggested 3 levels of efficiency

Weak form efficiency
Semi strong form efficiency
Strong form efficiency

Weak form efficiency

Prices reflect all historical public information

Weak form efficiency tests

Tests the theory that prices follow patterns that can be used to predict future prices.

Various researchers

Bachelier (1900); Working (1934); Roberts (1959 - 67); Fama & Blume (1966)

No study has found any pattern that can be used to predict future prices

Studies show that prices follow a random walk

(serial co-variances are zero)

More simply - security prices have no memory
or
Yesterday cannot predict tomorrow

Only new information causes price changes

Semi strong form efficiency

Prices reflect all public information, past and present

Semi strong form tests

Tests the theory that security prices fully reflect all information in the public domain

If this is not true it should be possible to earn exceptional returns by studying public domain information.

Various studies have looked at all sorts of available information

Fama (1960's); Proxmire (1968); Fisher, Jenson and Roll (1969); Kaplan & Roll (1972)

There is no evidence to suggest that exceptional returns are possible

Strong form efficiency

Prices reflect all public and private information, past and present

Strong form tests

Tests the theory that security prices reflect all information (including insider information)

Various studies

Niderhoffer and Osborne (1966); Scholes (1972)

Generally studies tend to suggest that corporate insiders (and market specialists) can and do make exceptional returns

∴ Markets are inefficient at strong form level

General conclusions

Markets generally follow a weak form efficiency – that is pricing is generally regarded as inefficient

Possible reasons

Varying price of risk
Incomplete arbitrage
Persistent losers

Implications of market efficiency for financial managers

Financial models can be relied upon to maximise shareholder wealth

No point in creative accounting

No point in agonising over the timing of funding issues

No point in trying to spot under-valuations