

## Efficient Markets Hypothesis (EMH)

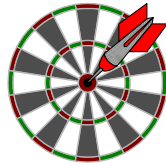
### Concept

Asset price reflects all relevant information about that asset  
Therefore, the asset is fairly priced (price = value, i.e., equilibrium prevails)

### Implications for Investors

You can't beat the market (unless you know something no one else does)

- You can't pick stocks
- You can't time the market
- Security analysis is useless
- There are no magic trading strategies



EMH does not mean you can't get lucky; it does mean you shouldn't plan on it

*Recommendation: buy and hold a globally-diversified no-load index fund*

### Implications for Corporate Managers

Window-dressing is useless

You can't time the market

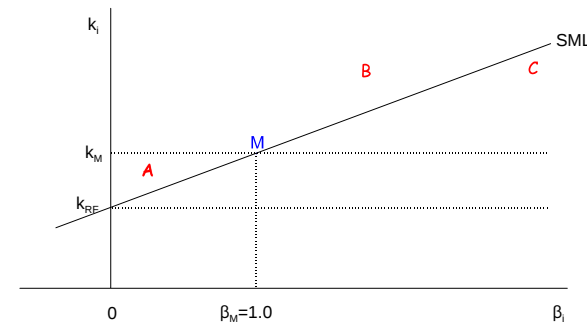
Mis-pricing rare: shouldn't whine (unless they really do know something)

10/9/98, page 1

## Beating the Market

### Definition

Consistently earning abnormal returns (above asset's required return, along SML)  
*It is not enough to earn more than the market portfolio (the average stock)*



10/9/98, page 2

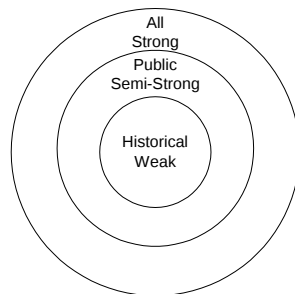
## Degrees of Market Efficiency

### Information

How efficient a market is depends on how much information is incorporated into prices

| Degree      | Information Set Incorporated into Prices                |
|-------------|---------------------------------------------------------|
| Strong      | all (including insider information)                     |
| Semi-strong | public: annual reports, analysts reports, press stories |
| Weak        | historical                                              |

Both info and efficiency are "nested":  
strong-form efficiency (incorporating all info), also implies semi-strong efficiency (incorporating public info); semi-strong implies weak form efficiency



### Implications for Security Analysis

Weak technical analysis is useless

Semi-strong fundamental analysis is useless

10/9/98, page 3

## The Incorporation of Information

### Process

Since being systematically wrong about investments is expensive, investors will

1. use any relevant information in estimating an asset's value
2. compare value and current price
3. deal

$$\text{If Value } \begin{cases} > \\ < \end{cases} \text{ Price, then } \begin{cases} \text{Buy} \\ \text{Sell} \end{cases}$$

As a result, prices change until they reflect values (and the underlying information)

$$\text{Info Value Buy/Sell } \Delta \text{Price}$$

### What kind of information?

Anything bearing on the size, timing, or risk of the asset's cash flows  
for example, changes in  $g$ ,  $\beta$ ,  $CF$ ,  $\hat{k}$ ,  $k_{RF}$

10/9/98, page 4

## The Impact of Information

### Surprise

Only News affects prices (by changing values)

Information is not News unless it is unexpected (and could not be predicted)

e.g., the dividend growth rate can rise, and the stock price still fall, if the increase was less than expected

True News arrives randomly

Asset prices change randomly (cannot be predicted)

Malkiel's *A Random Walk Down Wall Street*

### Caution

This does *not* imply prices are random and senseless

- Prices reflect fundamental values
- Price changes reflect changes in fundamental values, driven by random news