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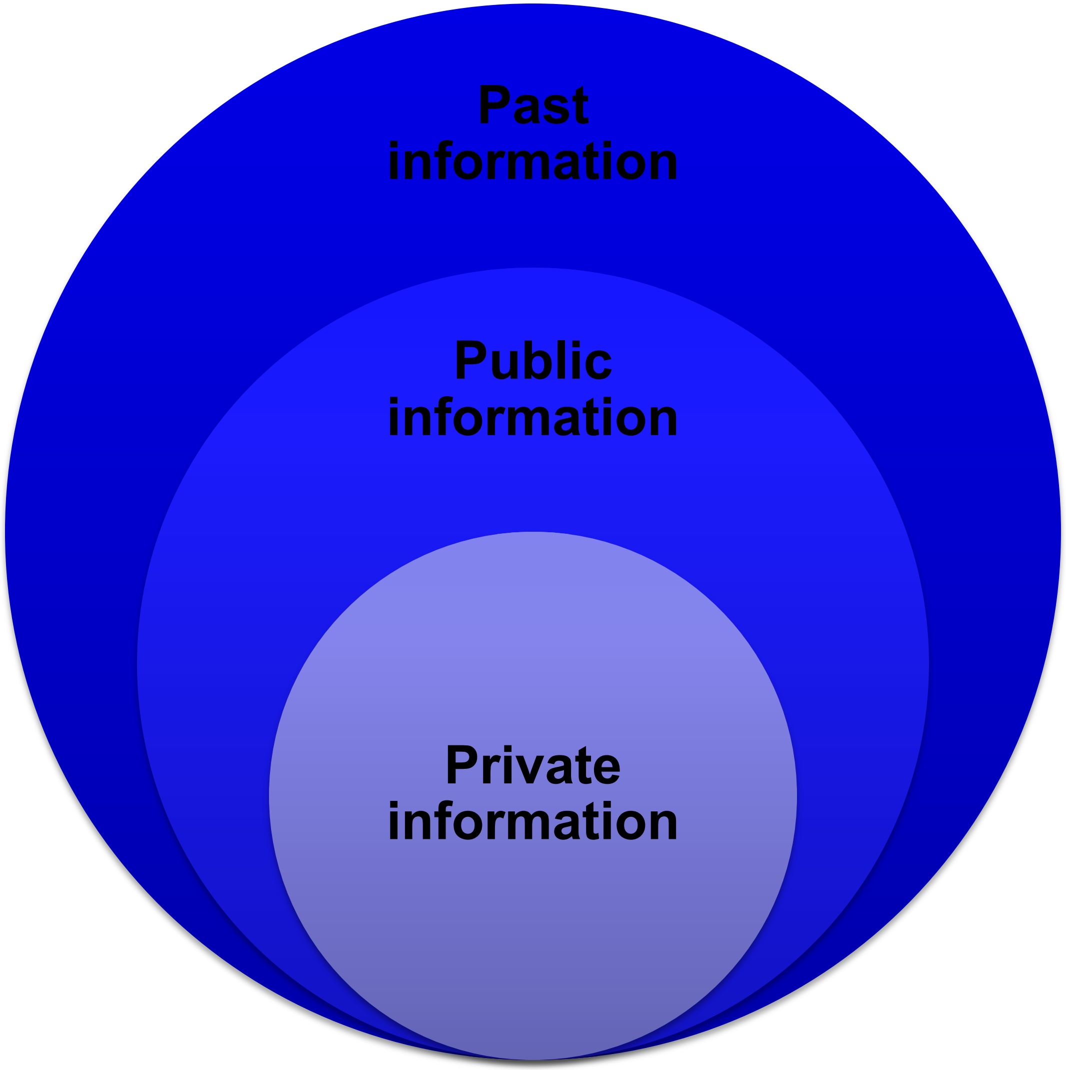
Financial Investments

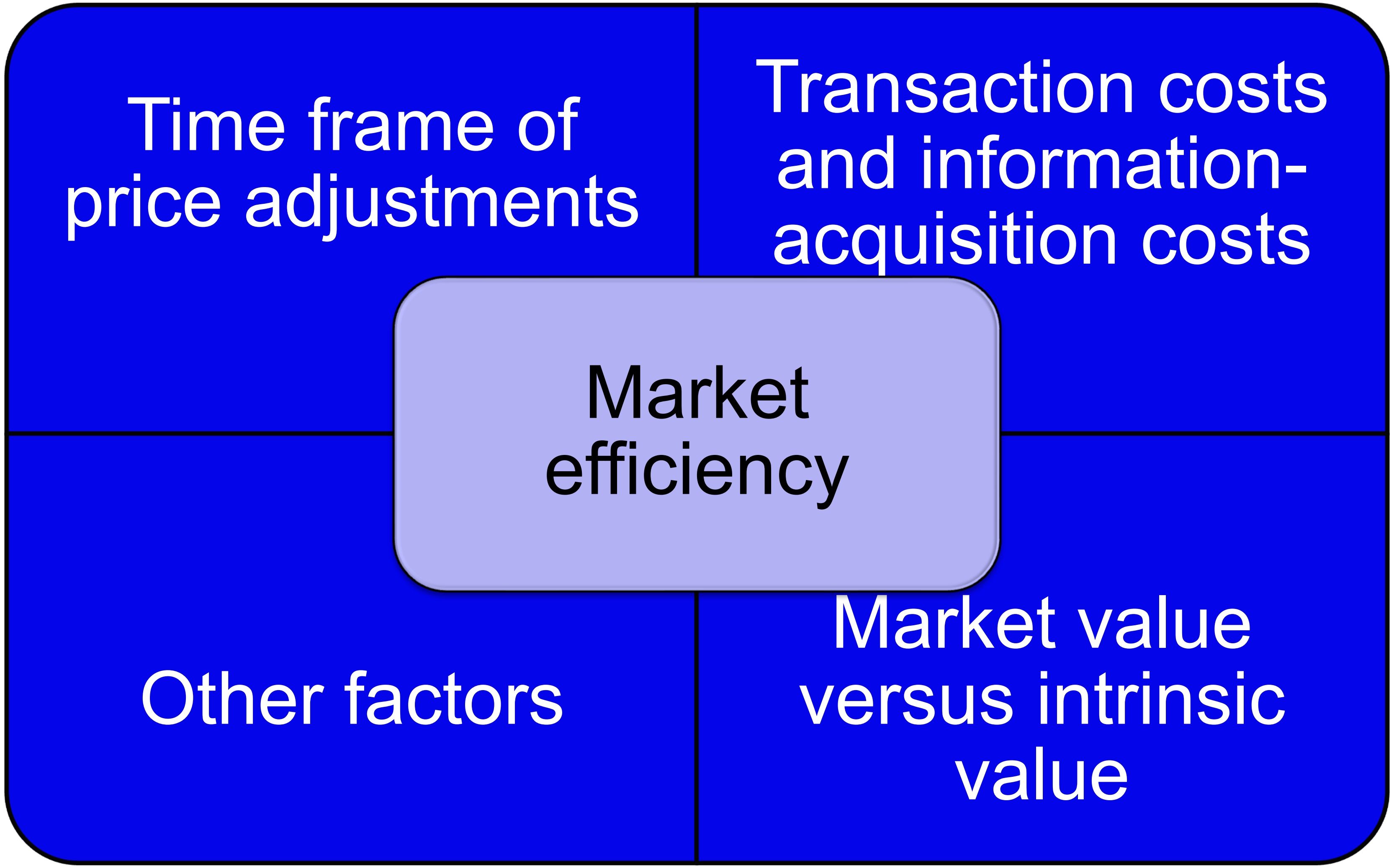
Class 3: Market Efficiency

Lecturer: Axel A. Araneda, Ph.D.

Definition of an Efficient Market



Factors Affecting Market Efficiency



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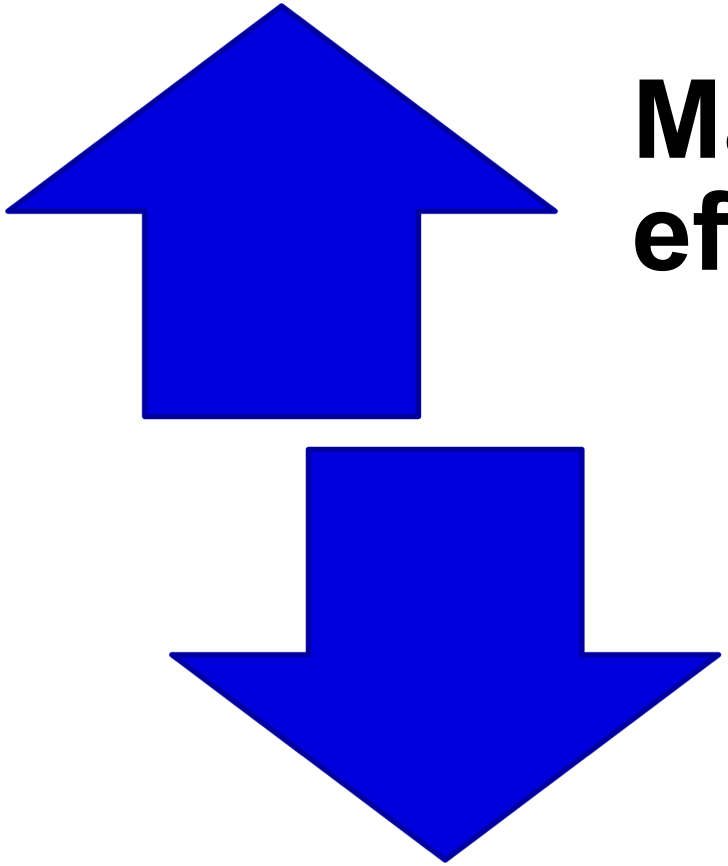
Active versus Passive Investment Strategies

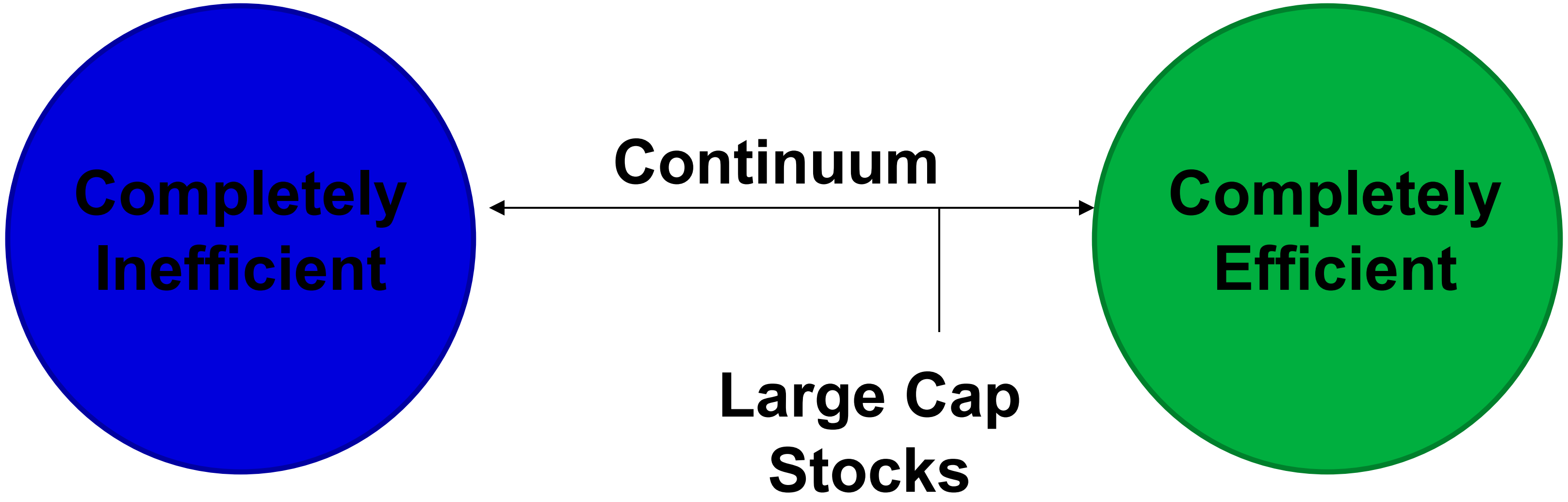


Market efficiency

Active investment strategies

Factors Affecting a Market’s Efficiency

A market should be viewed as falling on a continuum between two extremes:



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Forms of Market Efficiency (Fama 1970)

	Market prices reflect:		
Forms of market efficiency	Past market data	Public information	Private information
Weak form of market efficiency	✓		
Semi-strong form of market efficiency	✓	✓	
Strong form of market efficiency	✓	✓	✓

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Weak Form of Market Efficiency

Serial correlation in security returns

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Usefulness of technical analysis

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Tests of weak form market efficiency

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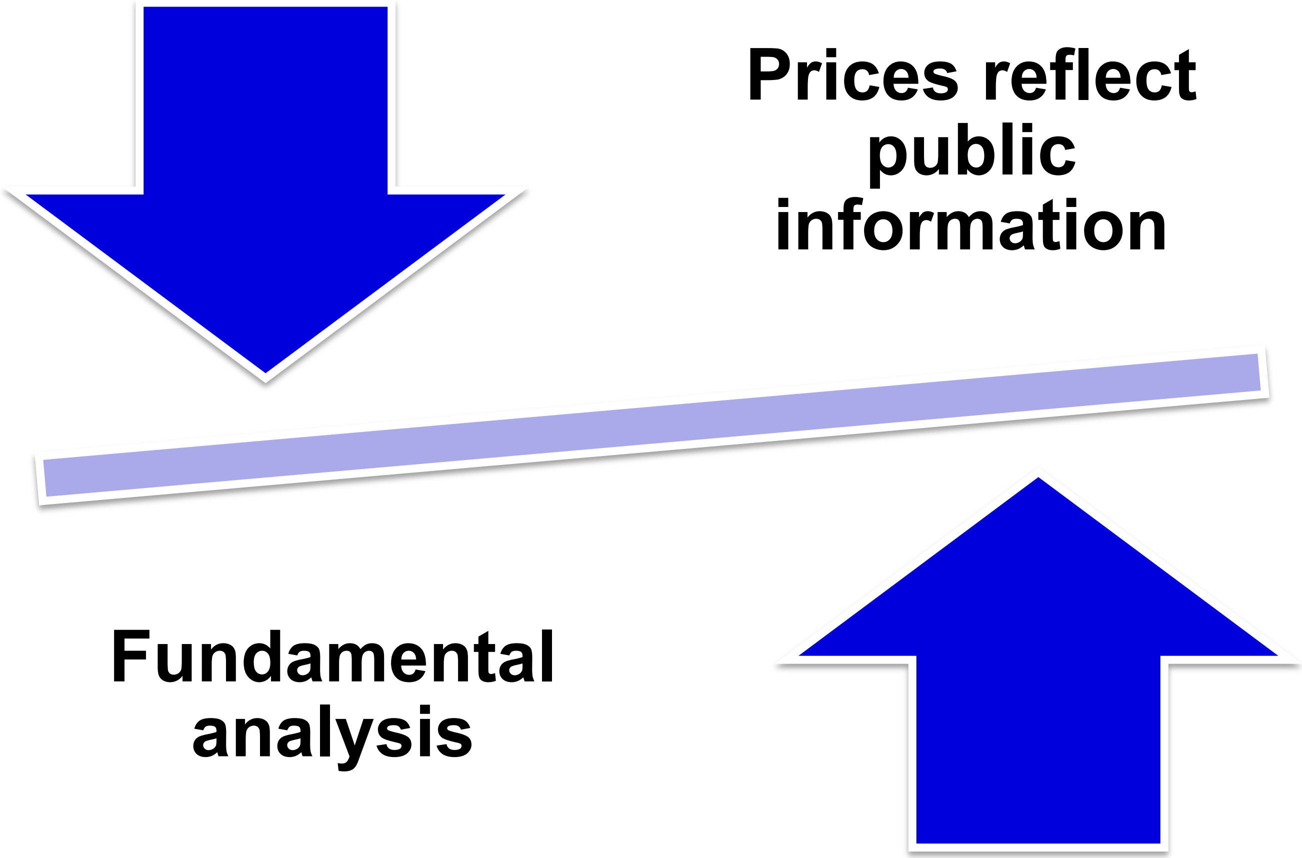
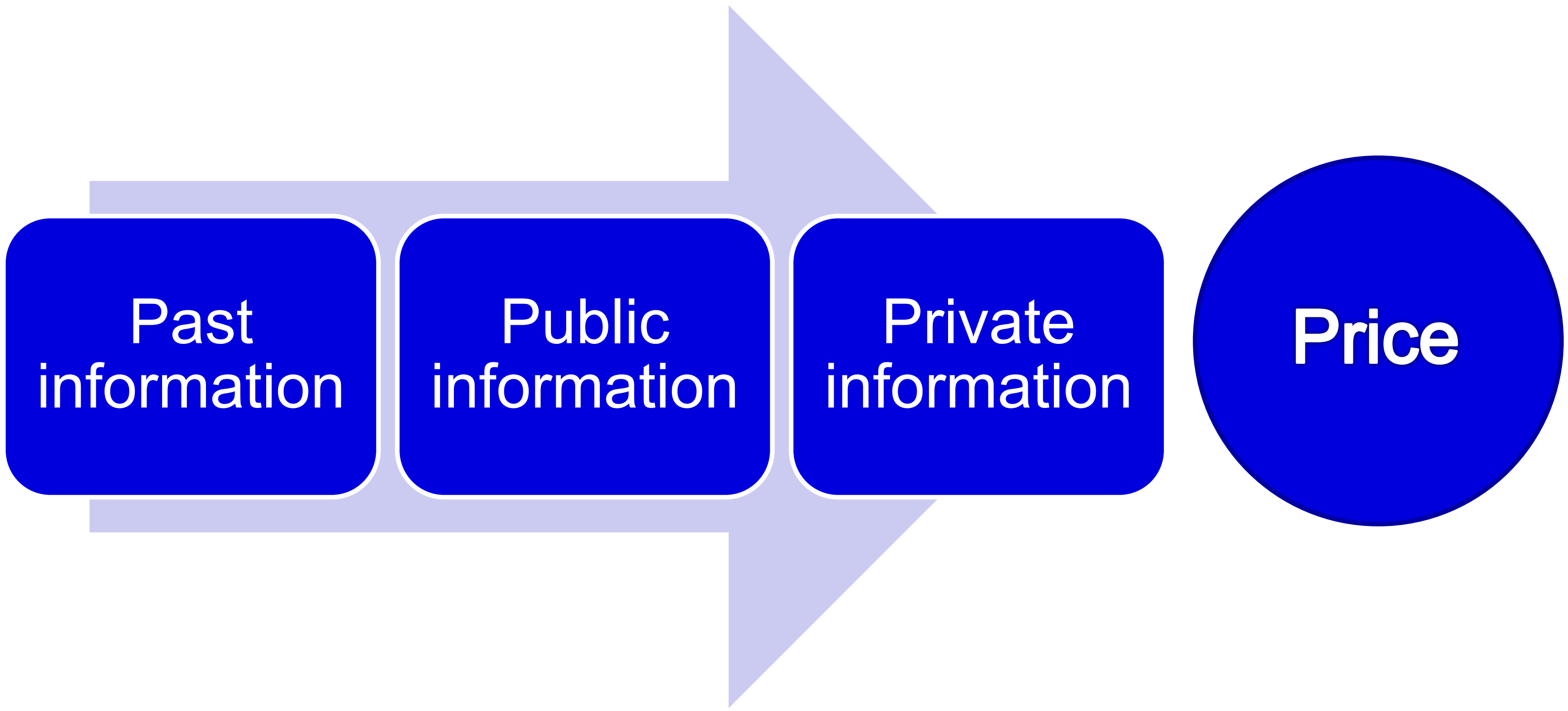
Semistrong Form of Market Efficiency



The Event Study Process

1. Identify the period of study
2. Identify the stocks associated with the event within the study period
3. Estimate the expected return for each company for the announcement date
4. Calculate the excess return for each company in the sample as the actual return on the announcement date, less the expected return
5. Perform statistical analyses on the excess returns in the sample to see whether these returns are different from zero

Strong Form of Market Efficiency



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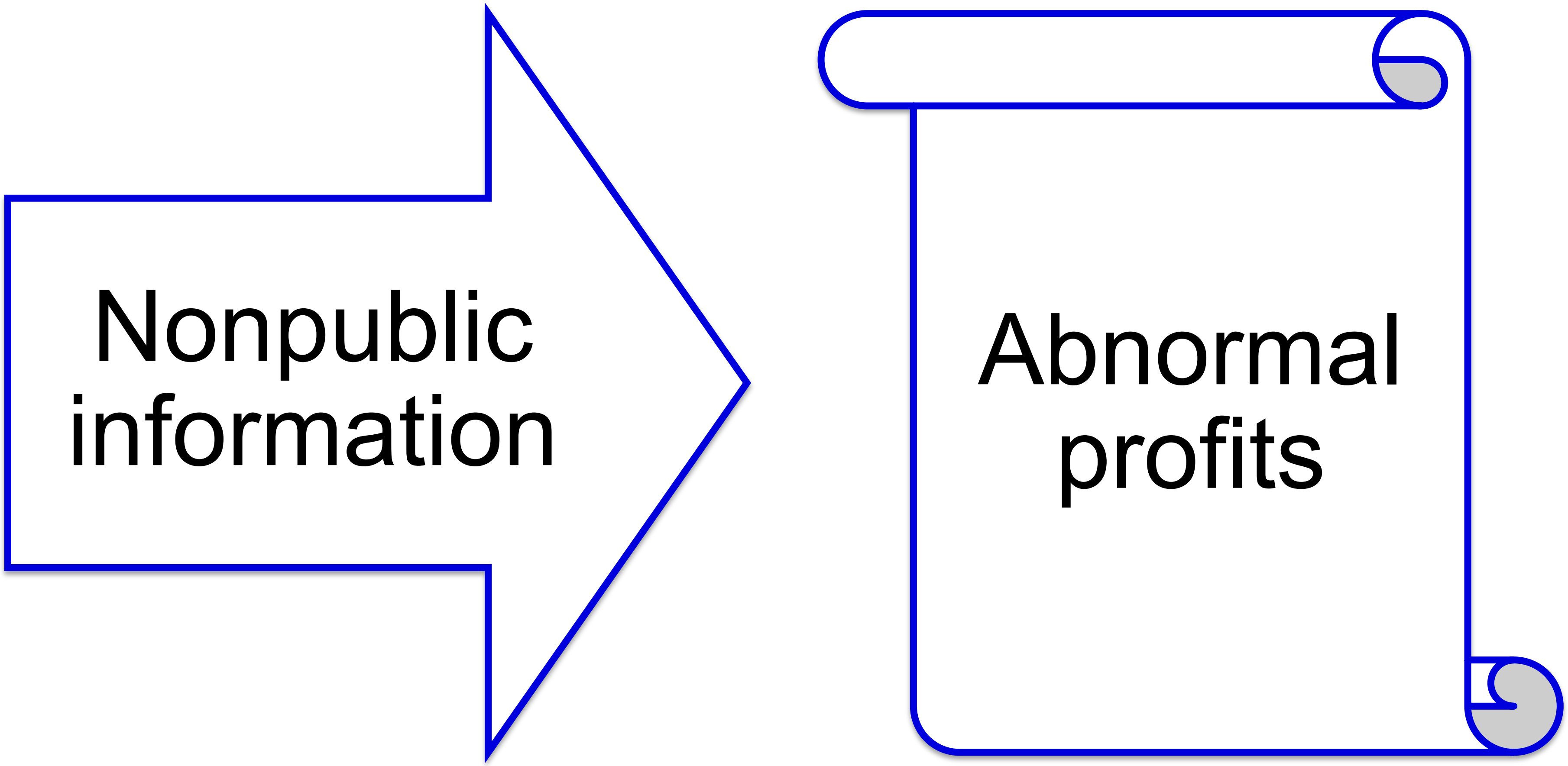
What Form of Market Efficiency Exists?



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Questions

1) Is the expected return for stocks equal to zero in an efficient market?
2) Which hypothesis is being tested if a researcher examines stock price performance following earnings announcements?
3) Which hypothesis is being tested if a researcher examines stock price performance based on a 50-day and 200-day moving average of prices?
4) Why might a stock's price not reflect everything management knows about their company?

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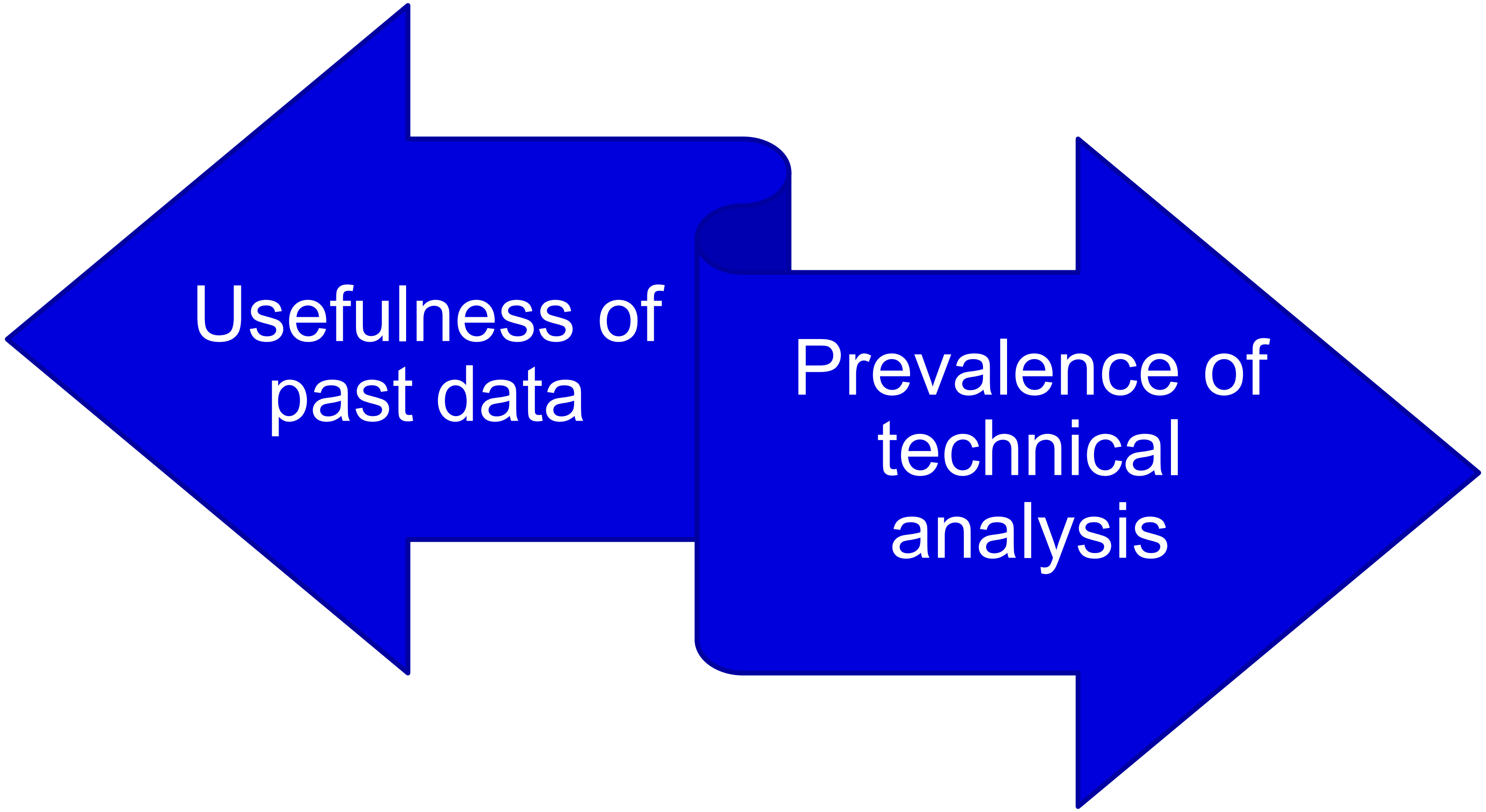
What Good Is Fundamental Analysis?

Fundamental analysis

Value-relevant information

Possible abnormal returns

What Good Is Technical Analysis?



What Good Are Portfolio Managers?

"Beat the market"

Manage portfolio objectives

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Market Pricing Anomalies

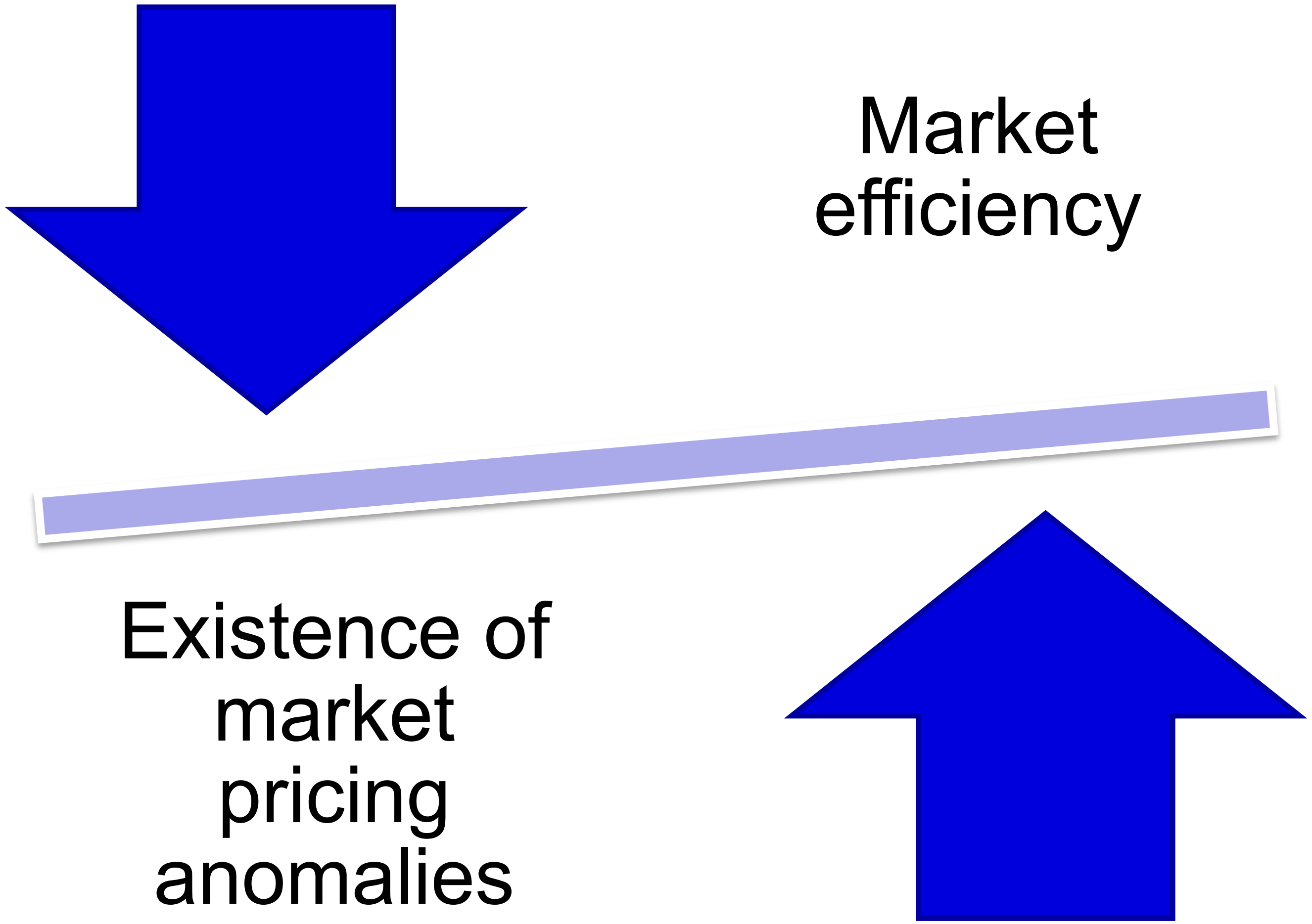

EXHIBIT 3-3 Sampling of Observed Pricing Anomalies

Time series	Cross-sectional	Other
January effect	Size effect	Closed-end fund discount
Day-of-the-week effect	Value effect	Earnings surprise
Weekend effect	Book-to-market ratios	Initial public offerings
Turn-of-the-month effect	P/E ratio effect	Distressed securities effect
Holiday effect	Value Line enigma	Stock splits
Time-of-day effect		Super Bowl
Momentum		
Overreaction		

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January (Turn-of-the-Year) Effect

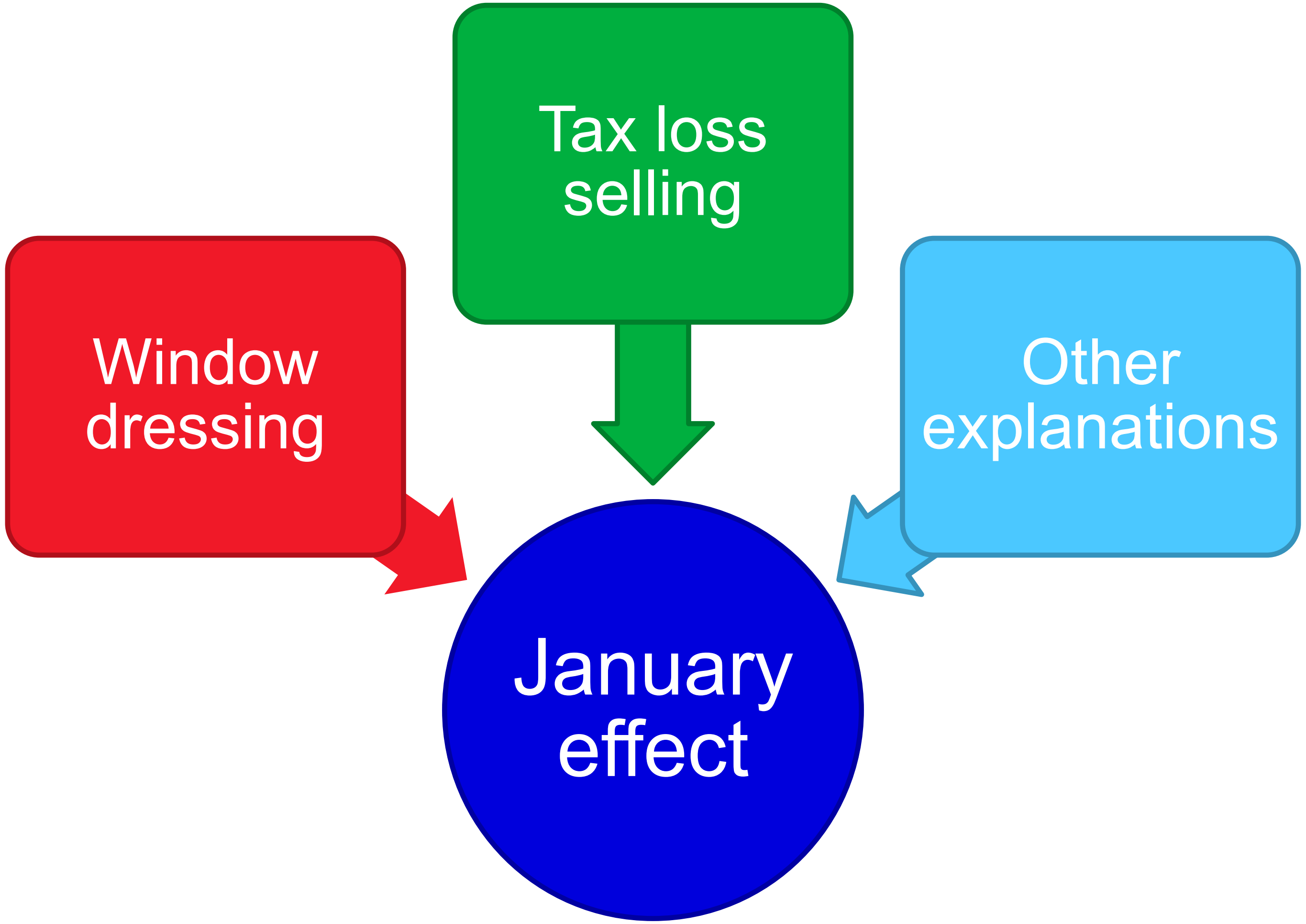

EXHIBIT 3-4 Other Calendar-Based Anomalies

Anomaly	Observation
Turn-of-the-month effect	Returns tend to be higher on the last trading day of the month and the first three trading days of the next month.
Day-of-the-week effect	The average Monday return is negative and lower than the average returns for the other four days, which are all positive.
Weekend effect	Returns on weekends tend to be lower than returns on weekdays.
Holiday effect	Returns on stocks in the day prior to market holidays tend to be higher than other days.

Overreaction and Momentum Anomalies

Overreaction anomaly

- Stock prices become inflated (depressed) for those companies releasing good (bad) news.

Momentum anomaly

- Securities that have experienced high returns in the short term tend to continue to generate higher returns in subsequent periods.

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Cross-Sectional Anomalies

- Small cap outperforms large cap
- Value outperforms growth

Initial Public Offerings (IPOs)

Offering price

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Abnormal profits

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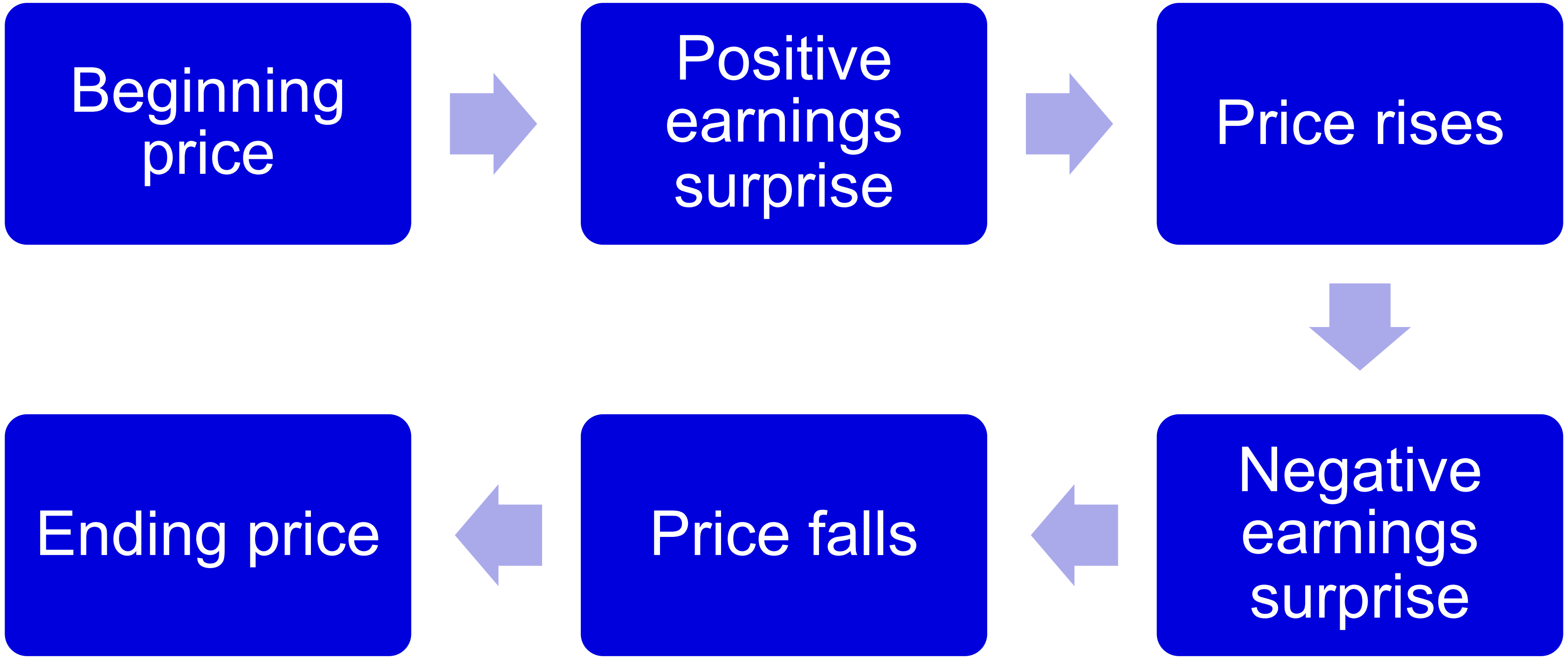
Closing price

Earnings Surprise



Behavioral Finance versus Traditional Finance

<u>Behavioral Finance</u>

Assumes:

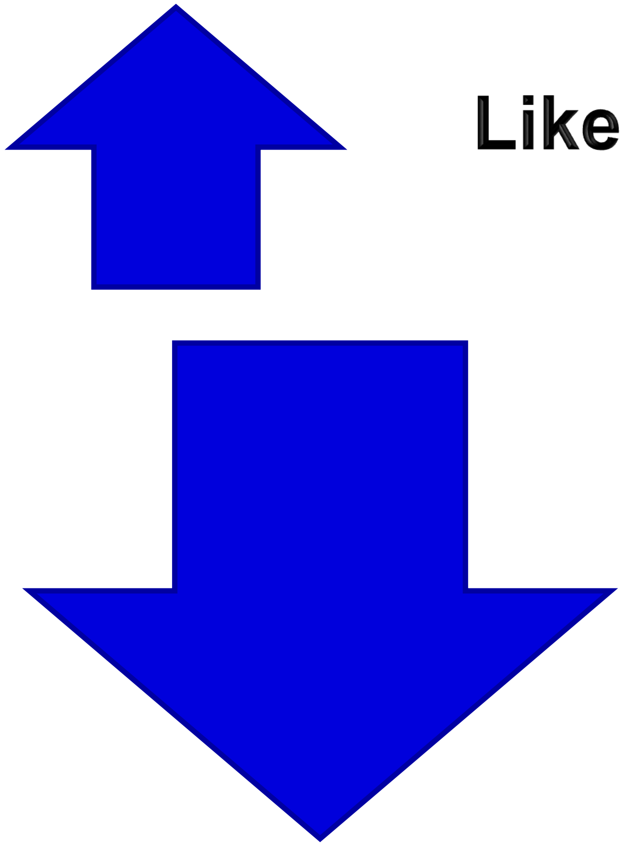
- Investors suffer from cognitive biases that may lead to irrational decision making.
- Investors may overreact or under-react to new information.

<u>Traditional Finance</u>

Assumes:

- Investors behave rationally.
- Investors process new information quickly and correctly.

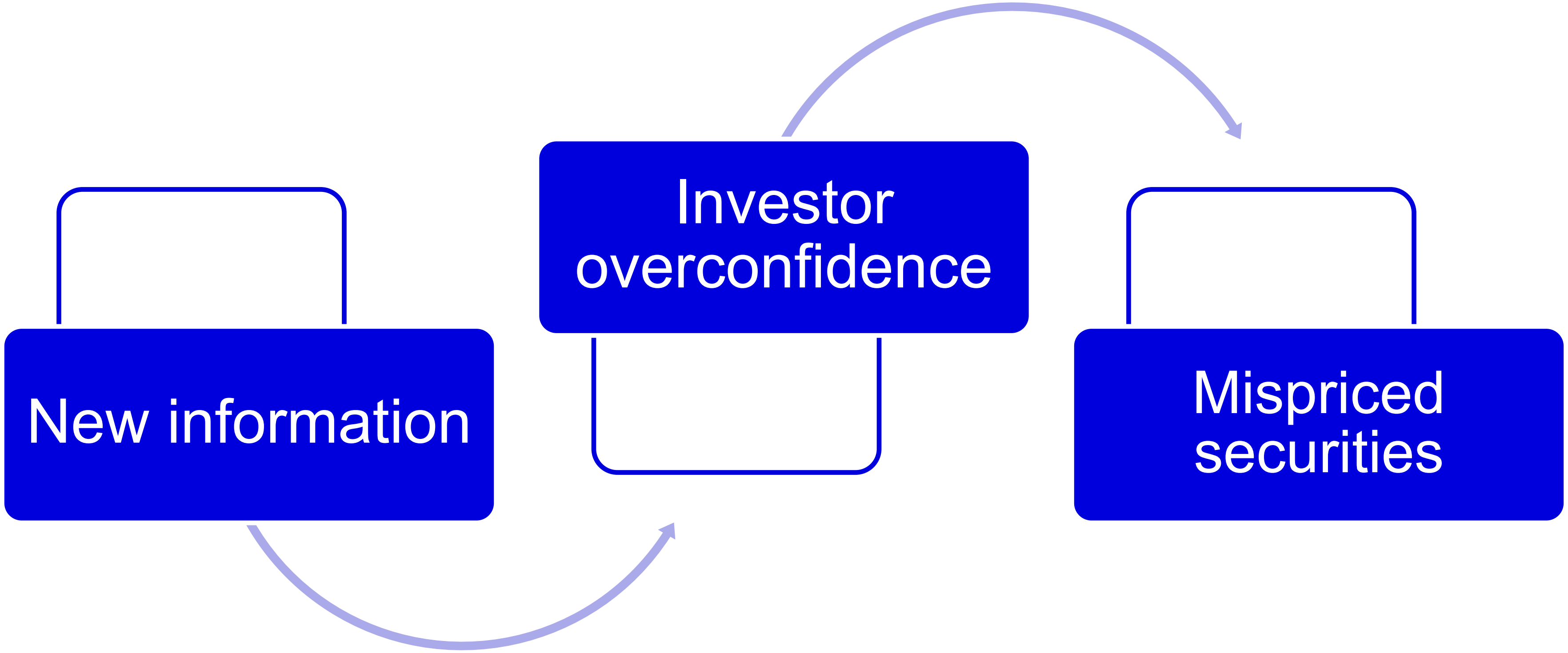
Loss Aversion



Like gains

Dislike losses

Overconfidence



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Summary

- The efficiency of a market is affected by the number of market participants and depth of analyst coverage, information availability, and limits to trading.
- There are three forms of efficient markets, each based on what is considered to be the infor- mation used in determining asset prices.
  - In the weak form, asset prices fully reflect all market data, which refers to all past price and trading volume information.
  - In the semistrong form, asset prices reflect all publicly known and available information.
  - In the strong form, asset prices fully reflect all information, which includes both public and private information.

Summary

- Intrinsic value refers to the true value of an asset, whereas market value refers to the price at which an asset can be bought or sold. When markets are efficient, the two should be the same or very close. But when markets are not efficient, the two can diverge significantly.

- Most empirical evidence supports the idea that securities markets in developed countries are semistrong-form efficient; however, empirical evidence does not support the strong form of the efficient market hypothesis.

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Summary

- A number of anomalies have been documented that contradict the notion of market effi- ciency, including the size anomaly, the January anomaly, and the winners–losers anomalies. In most cases, however, contradictory evidence both supports and refutes the anomaly.

- Behavioral finance uses human psychology, such as cognitive biases, in an attempt to explain investment decisions. Whereas behavioral finance is helpful in understanding observed decisions, a market can still be considered efficient even if market participants exhibit seemingly irrational behaviors, such as herding.

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