Financial Statement Analysis (22E00100)

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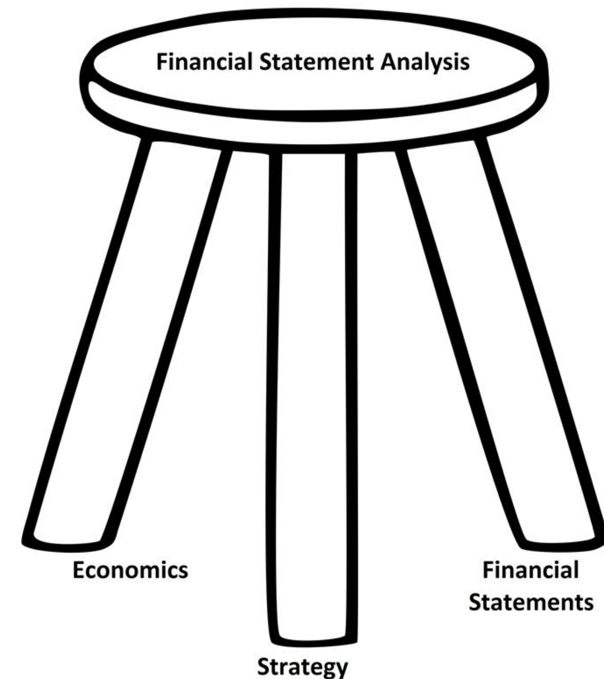
Overview of Financial Statement Analysis

- **Financial statement analysis requires linking the economics of an industry, a firm's strategy, and its financial statements.**
- **This help to gain knowledge about the firm's current and future profitability and its risk.**

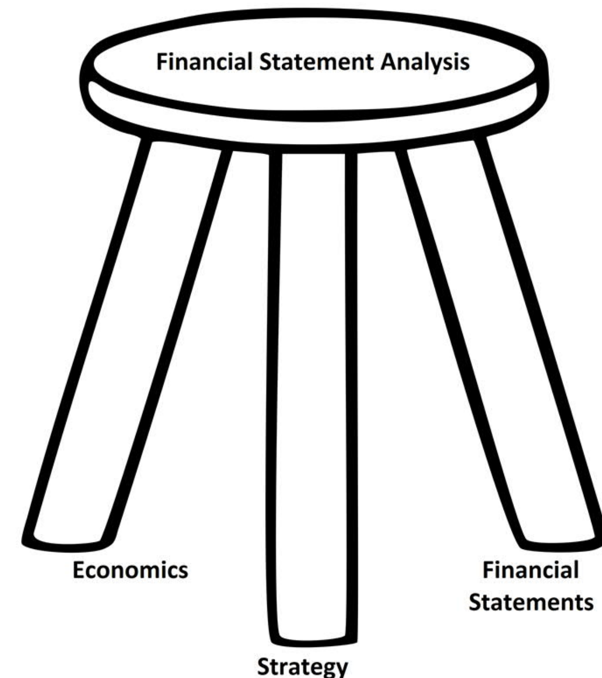
Overview of Financial Statement Analysis

1. Identifying economic characteristics of the industries in which a firm competes and mapping those characteristics into determinants of profitability and risk.



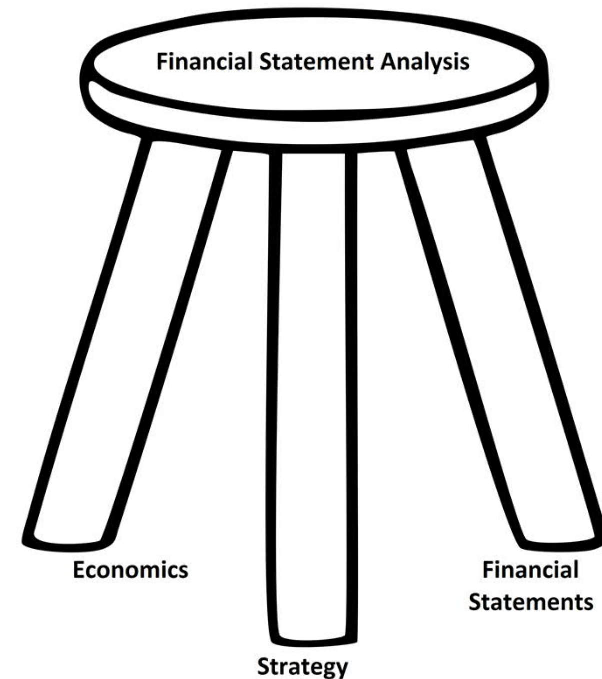
Overview of Financial Statement Analysis

2. Describing the strategies that a firm pursues to differentiate itself from competitors as a basis for evaluating a firm's competitive advantages, the sustainability and potential growth of a firm's earnings, and its risks.



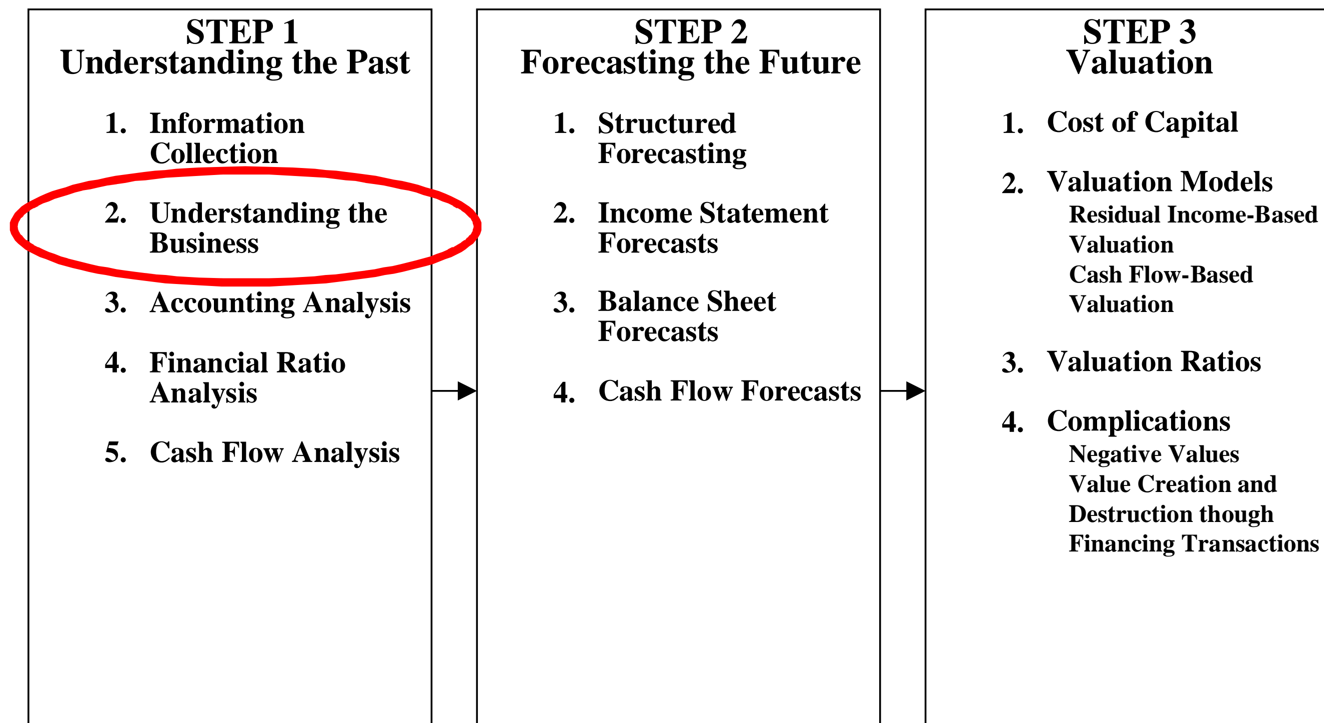
Overview of Financial Statement Analysis

3. Evaluating the firm's financial statements, including the accounting concepts and methods that underlie them and the quality of the information they provide.



Six Interrelated Sequential Steps in Financial Statement Analysis

Framework for Business Analysis and Valuation



Understanding the Business: Overview

- **Top Down Approach**
  - Macroeconomic Analysis
  - Industry Analysis
  - Strategy Analysis

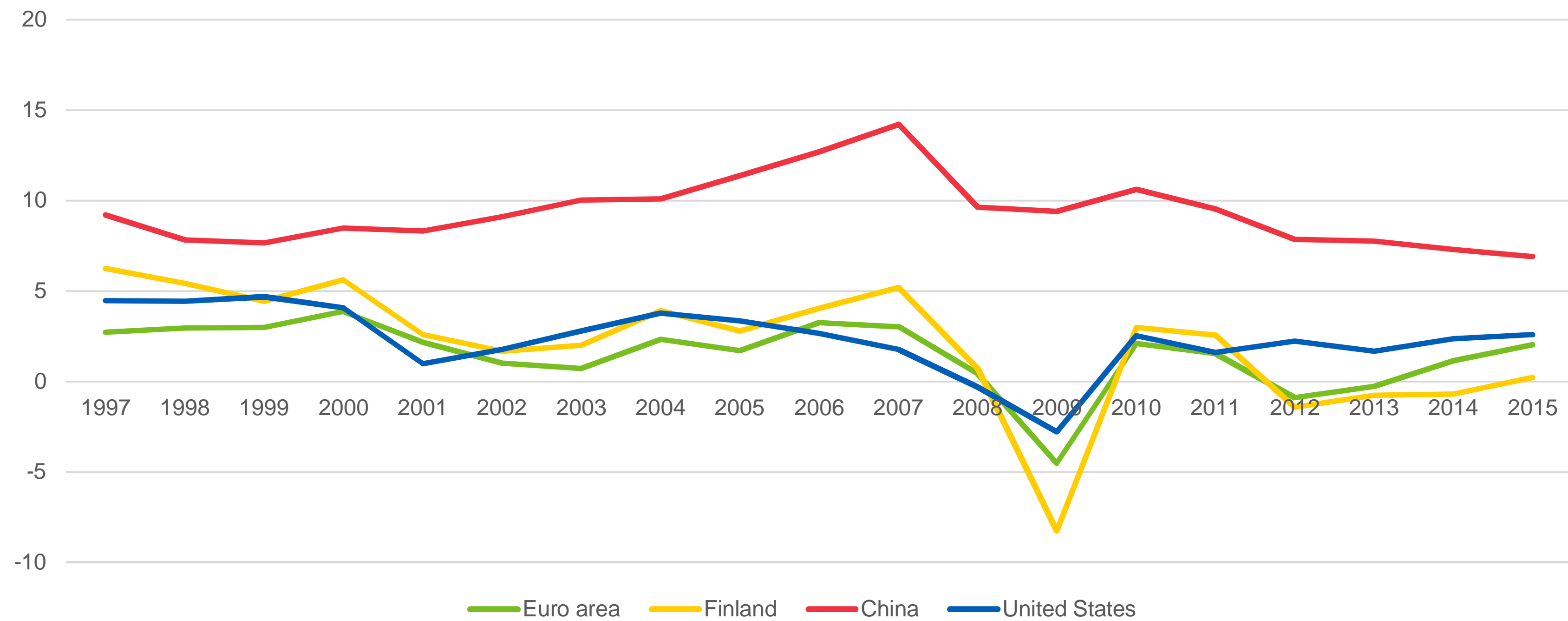
Macroeconomic Factors

- **Most domestic businesses have direct exposure to the global economy through their product markets, input markets, or foreign operations.**
- **<u>You</u> should understant the state of global economy and the consensus among experts about where it is heading.**
- **<u>You</u> should be aware of the expected economic growth rates, political risks, and currency risks in each of the domestic economies in which the firm operates.**

Gross Domestic Product

- **Gross Domestic Product (GDP) measures the market value of final goods and services produced domestically.**
- **The overall rate at which the economy is growing is an important deteminant of the rate at which many business can grow.**
- **Over the last 40 years in the U.S., the real GDP growth has averaged about 3 to 4 percent, reaching highs of over 10 percent and lows of less than –5 percent.**

GDP growth (annual %)



Data from database: World Development Indicators

Other Macroeconimic Factors

- Interest rates
- Inflation
- Foreign Exchange Rates
- Oil Prices and Key Commodity Prices
- Unemployment
- Consumer Confidence

Industry Factors

- **Professional analysts tend to specialize in particular economic sectors and industries to achieve efficiencies in business analysis.**
- **Industry analysis has three primary objectives:**
  - To understand the sensitivity of the industry to key macroeconomic factors.
  - To understand how the industry operates and the key performance metrics for evaluating operations.
  - To understand the competitive structure of the industry.

Sensitivity of Sector Profitability to Key Macroeconomic Factors

	Macroeconomic Factor		
Sector	GDP	Interest Rate	Oil Price
Basic materials	+ +	– –	– –
Energy	+ +	–	+ +
Conglomerates	+	–	–
Consumer Goods	+ +	– –	–
Financial	+	– –	–
Health Care	+	–	–
Industrial Goods	+ +	– –	– –
Services	+	–	–
Technology	+ +	– –	–
Utilities	+	–	– –

Industry Operation

- **Firms in the same industry generally produce similar goods and services using similar production technologies.**
- **You should begin your industry analysis by figuring out how the industry operates:**
  - What is the nature of the production process that takes place in the industry?
  - What are the key inputs in the production process?
  - What is the nature of the marketing and distributing process?
  - Is service after the sale a significant factor?

Key Industry Ratios and Statistics

- **Once you understand how the industry operates, you should identify the key ratios (which vary widely) and statistics that capture the health of the industry and firms within the industry.**
  - In the oil industry, for example, key statistics include oil prices, the current demand for oil, crude oil and petroleum inventories, oil refinery capacity utilization rates, and oil services equipment utilization rates.
  - In contrast, in the semiconductor industry, key ratios and statistics include the semiconductor industry monthly global sales report, the semiconductor equipment book-to-bill ratio, wafer fabrication plant utilization rates, the purchasing managers' index, and business capital spending.

Key Industry Ratios and Statistics

- **What is Industry's Key Performance Indicator (KPI)?**
- **Balanced Scorecard –type analysis**

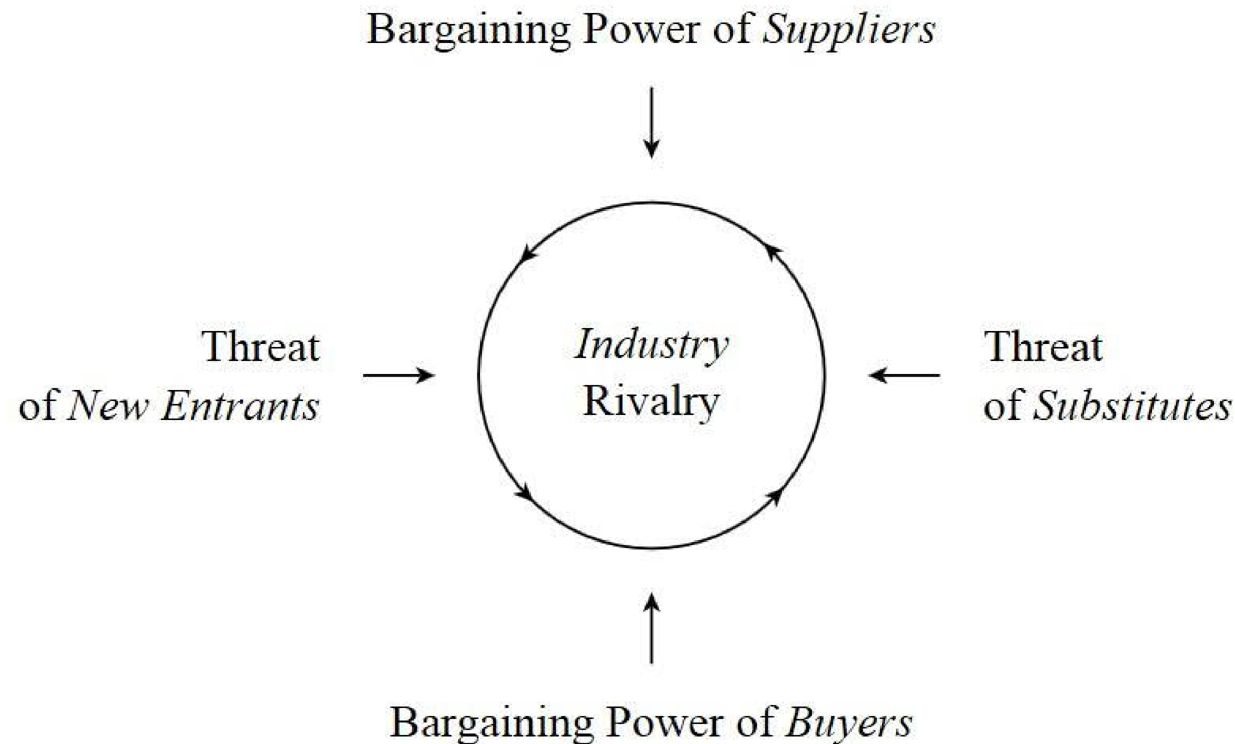
Understanding the Business: Industry Analysis

- **Determinants of Industry Profitability**
  - rivalry among existing firms
  - threat of new entrants
  - threat of substitute products
  - bargaining power of buyers
  - bargaining power of suppliers
- **Industry Life Cycle**
  - start up, consolidation, maturity, decline

Competition Structure of Industry

- **Intensity of competition**
  - In a perfectly competitive market, there are many firms using the same production technology and facing the same input and output prices.
  - In equiliprium, just enough firms enter the market to ensure that the equiliprium price provides a "normal" return on the invested capital to all firms in the market.
  - In such a market, valuation is easy:
    Invested $capital \times normal\ rate\ of\ return = expected\ profit$
  - In a efficient market, each investor is simply expected to earn a normal rate of return on his or her investment.

Michael Porter's Five Forces



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The Firm's Strategy

- **Firm profitability is not solely a function of industry profitability.**
  - For example, McDonalds, Pepsi, and Coca-Cola have been able to generate consistently high profits while operating in the highly competitive industry for many years.
  - What explains this anomaly?

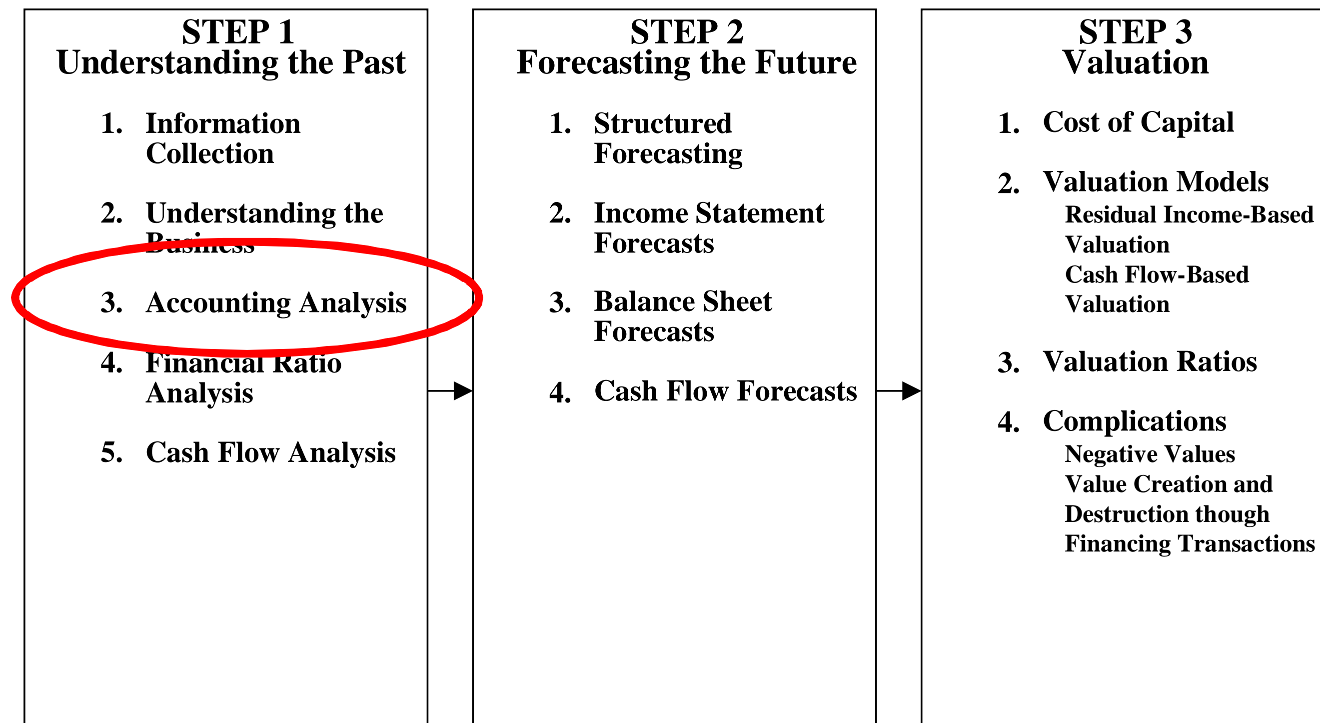
The Firm's Strategy

- Three common categories are cost leadership, product differentiation, and focus.
- A cost leadership strategy aims for low production costs and thin margins, with profits coming from a high volume as customers are attracted by the low price.
- Product differentiation is achieved by producing a product with unique attributes that are valued by buyers who will pay a premium price, resulting in higher profits.
- Finally, the idea behind focus is to develop a niche strategy that supplies one segment of the market with exactly what they want, be it low cost or a differentiated product.

Understanding the Business: Strategy Analysis

- **Nature of strategy**
  - cost leadership versus product differentiation
- **Sustainability of strategy**
  - sustainability of return on investment
  - sustainability of growth in investment
- **Corporate synergy analysis**
  - leveraging proprietary assets
  - eliminating transaction costs
  - eliminating redundant overhead
  - increasing market power

Framework for Business Analysis and Valuation



Purpose of Accounting Analysis

- **Evaluate how well the accounting reflects the underlying economics of the business**

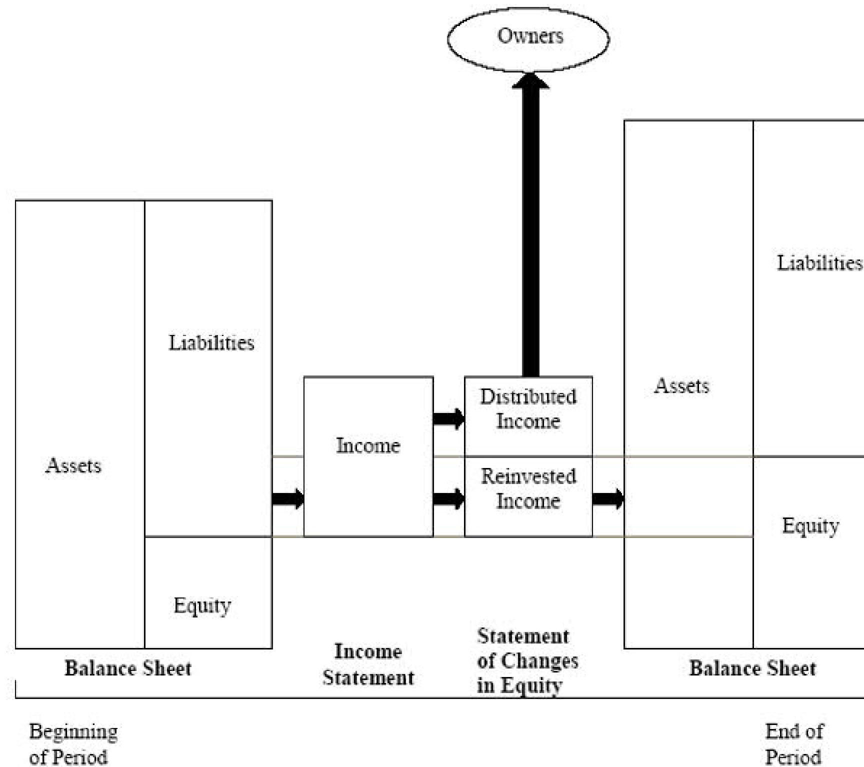
- **Adjust financial statements to mitigate accounting distortions -or- recognize that distortions must ultimately be reversed**

Basic GAAP

Assets = Liabilities + Shareholders' Equity

- Assets are probable future economic benefits under the control of the firm arising from prior transactions
- Liabilities are probable future economic sacrifices that are obligations of the firm arising from past events
- Revenues are increases in assets or reductions of liabilities arising from providing goods or services
- Expenses are reductions in assets or increases in liabilities resulting from providing goods or services
- Income is the increase in net assets arising from providing goods and services

Overview of Basic Building Blocks of Accounting



Revenue Recognition Criteria

- **Definition**
  - Net assets generated by an enterprise's operations.

- **Revenue cannot be recognized until:**
  - An exchange transaction has taken place
  - Earnings process is complete (delivery has occurred or services have been rendered)
  - The selling price is determinable
  - Collectability is reasonably predictable

Revenue Recognition (‘Cooking the Books’) Examples

- An appliance manufacturer convinces a major dealer to order $1 million more appliances than the dealer wants and books these sales as revenue. The manufacturer assures the dealer that the dealer will not have to pay until they are sold, and that the manufacturer will pay for their storage.
- A waste-disposal company signs a contract with a municipality that provides the municipality with the right to use a landfill site owned by the company for each of the next five years in return for $12 million/year, payable at the beginning of each year. The company books revenue of $60 million on signing the contract.
- An airline company offers ‘frequent flier miles’ as an inducement for customers to purchase tickets. The company then books the full ticket price as revenue when the customer takes the initial trip.

Expenses Recognition Criteria

- **Definition**

  - Net assets consumed by an enterprise's operations.

- **Recognition**
  - If the consumed net asset can be directly tied to the generation of some revenue, it is recognized in the same period the revenue is recognized (product cost)

    or

  - If the consumed asset cannot be directly related to any revenues and it does not create another asset, then it is recognized in the period it is consumed (period expense).

Expense Recognition ('Cooking the Books') Examples

- A bank incurs $24 million of costs marketing credit cards to new customers. The bank capitalizes the costs as an asset and expenses them over the next five years.
- A computer software company incurs $2 million of costs developing a sequel to a popular computer game. It will be six months before the software is ready for release. The company capitalizes the costs and expenses them over the three years following the software release date.
- An underwriter and marketer of legal insurance contacts pays $100 million of advance commissions to its sales associates. Contracts are renewable and premiums are payable on a monthly basis. The advance commissions represent commissions on three years worth of contract premiums. The company capitalizes the commissions as an asset and recognizes no expense.

Limitations of Accounting Information

- **Measurement Error Caused by GAAP**
  - can't recognize future sales
  - can't capitalize R&D costs
- **Measurement Error Caused by Imperfect Foresight**
  - loan loss provisions, employee benefit obligations
- **Measurement Error Caused by Managerial Manipulation**
  - Enron, WorldCom etc

Doing Accounting Analysis

- **Identify key accounting policies**
- **Assess accounting flexibility**
- **Evaluate the accounting quality**
  - Consistency with GAAP
  - Consistency with underlying economics
- **Evaluate the overall quality of the firm's disclosures**

Some Red Flags

- Use of different accounting methods/estimates from other firms in the industry
- Unexplained changes in accounting methods/estimates
- Large gap between earnings and cash flows
- Unusual transactions that boost earnings
- Qualified audit opinion (or change in auditor)
- Significant related party transactions or contingent liabilities
- Large gap between 'GAAP' earnings and 'Street' earnings

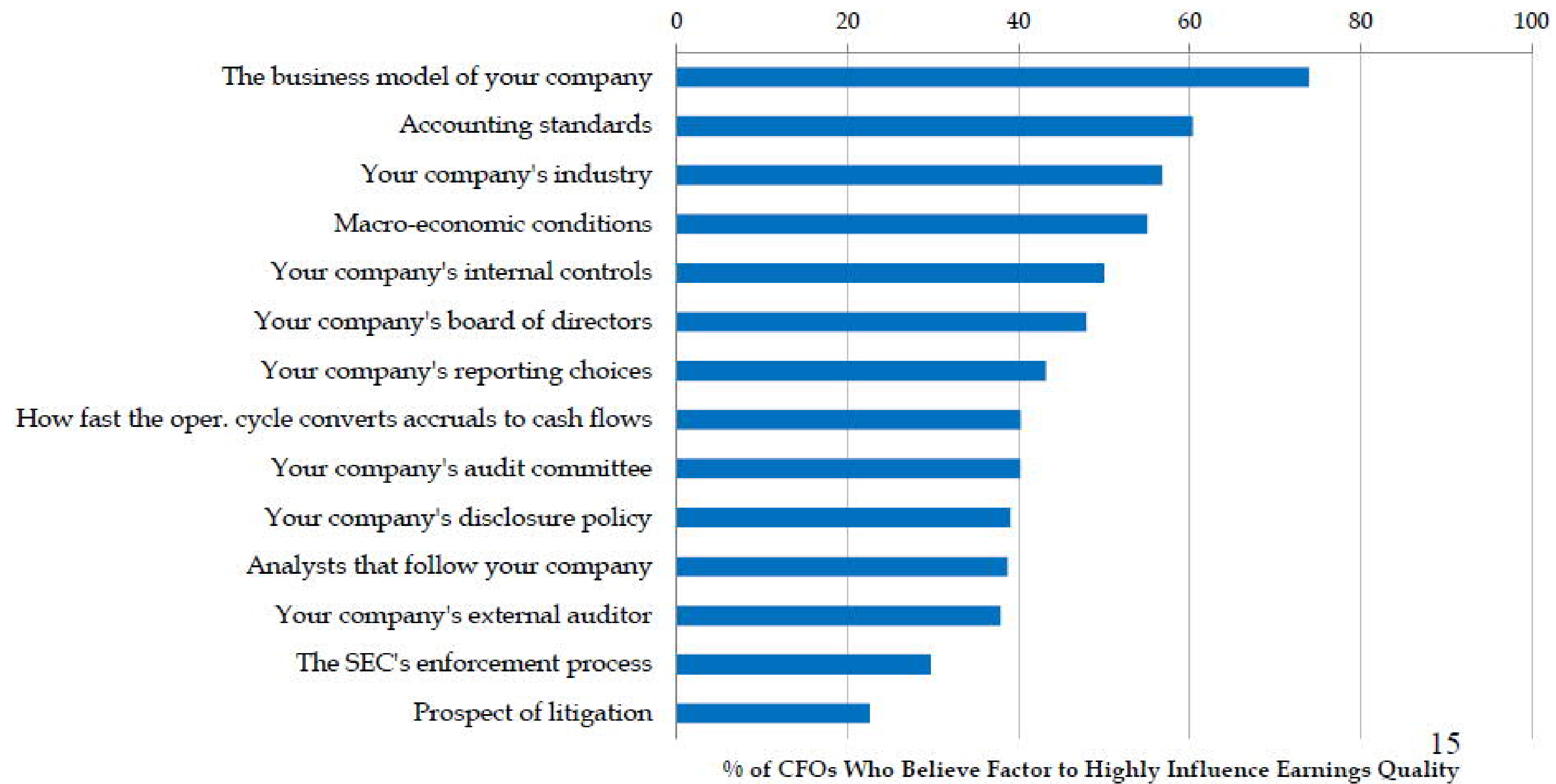
Survey Evidence (Dichev et al. 2013)

- Targeted CFO, Treasurer, Controller, ExecutiveVP-Finance and variations (collectively labeled CFOs)
- Nearly 400 responses including 169 U.S. public firms
- CFOs make many choices that influence the quality of earnings
- They focus on the producers of earnings quality and get it straight from the "horse's mouth," if you will.

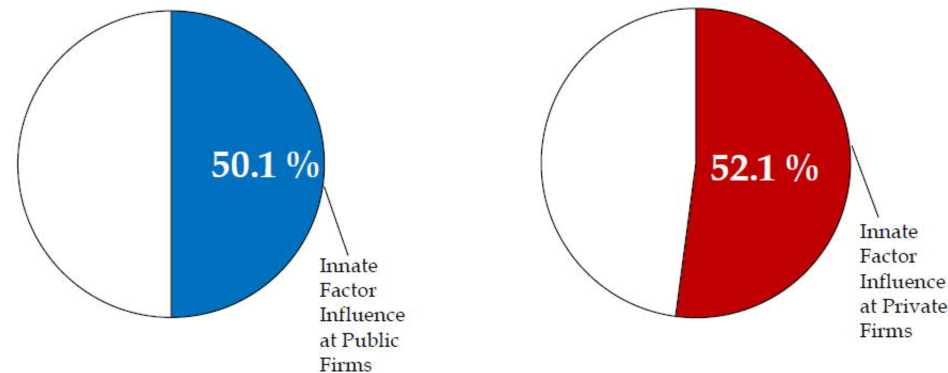
Key Questions (Dichev et al. 2013)

- What exactly is earnings quality (EQ)?
- What drives earnings quality?
- How often are earnings intentionally misrepresented?
- What is the magnitude of the misrepresentation?
- Why misrepresent earnings?
- How can outsiders detect earnings misrepresentation?

Factots that Influence Earnings Quality



Is earnings quality 'caused' or is it innate?



CFOs argue that half of EQ is 'caused' by choices that firms make and half of EQ is innate (out of the firm's hands):

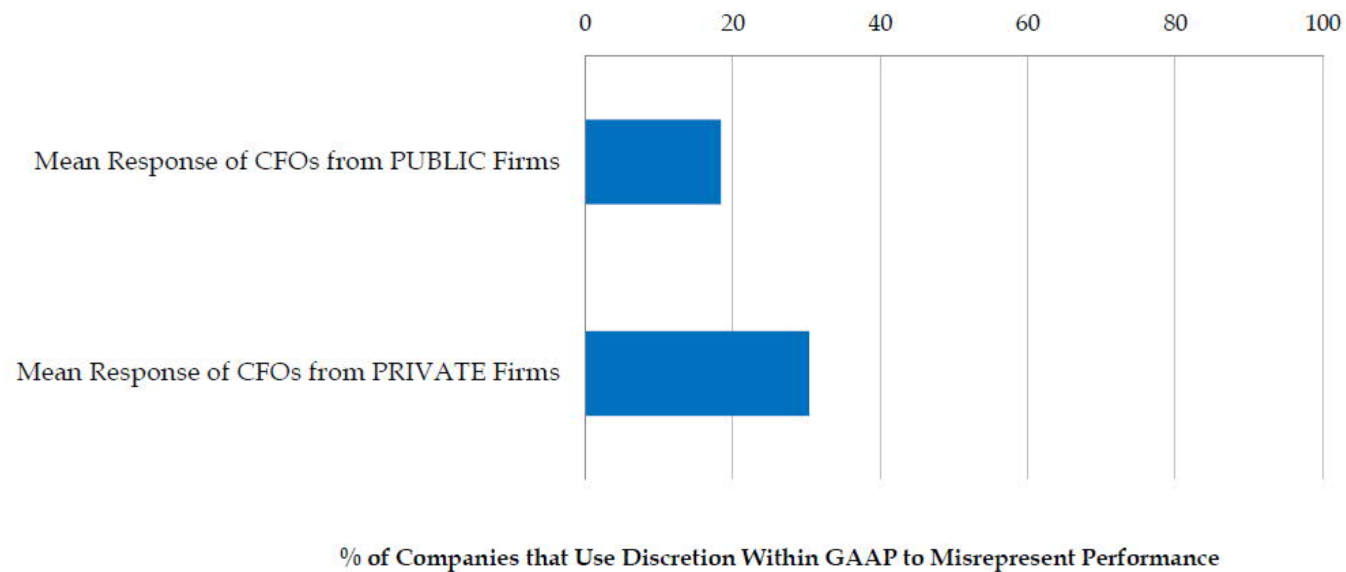
- Industry
- Cycle and speed of earnings to cash conversion
- Macro-economic conditions
- Accounting standards
- SEC

What policy changes produce high EQ?

Improve EQ	Reduce EQ
Match expenses to revenues	Fair Value accounting (for non-fin assets)
Conservative accounting	Long run estimates
Low volatility	Top-down rule-making
Rules evolving from practice	Issue detailed rules
Fewer new rules	
Greater professional judgment	
Issue principles	
Converge GAAP and IFRS	

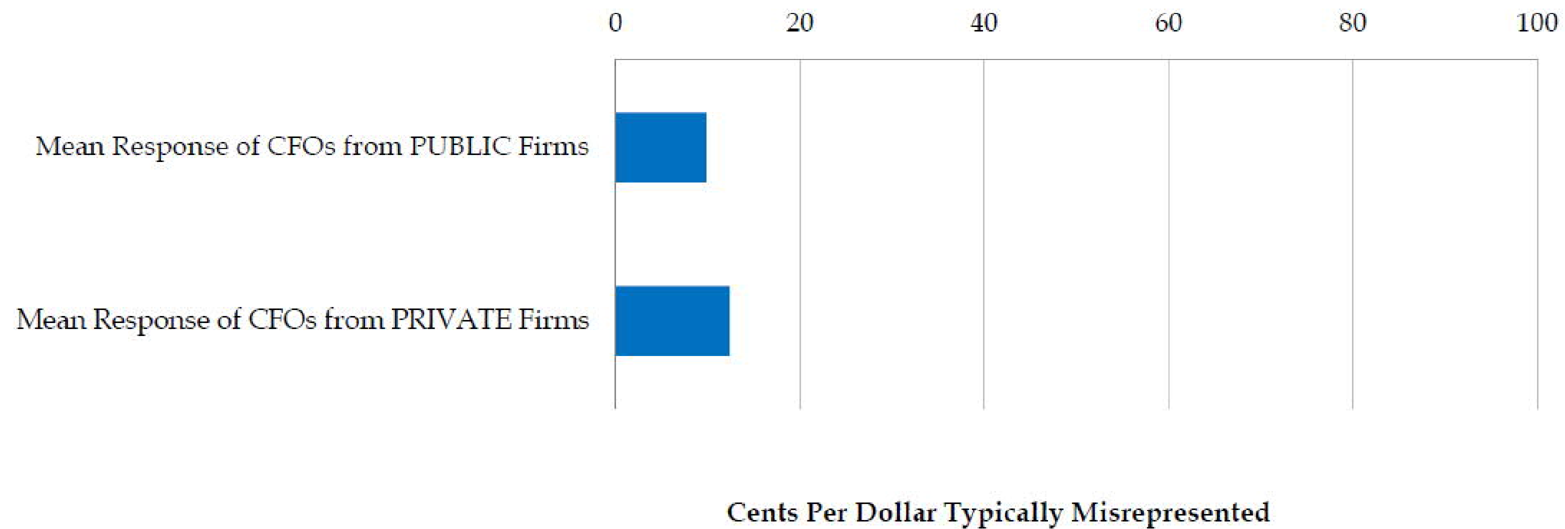
The misrepresentation of earnings

Prevalence of Within-GAAP Earnings Misprespresentation

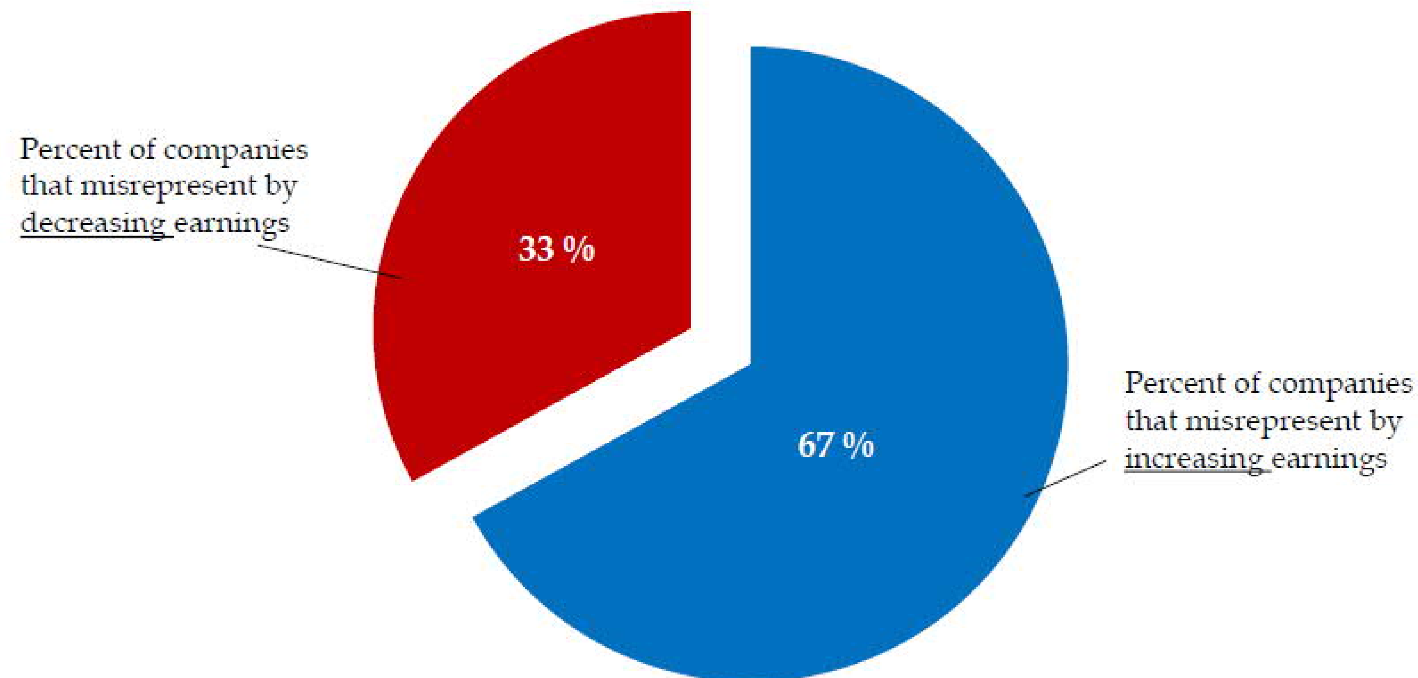


The magnitude of misrepresentation

Extent of Within-GAAP Earnings Misrepresentation in Companies that Misrepresent Earnings

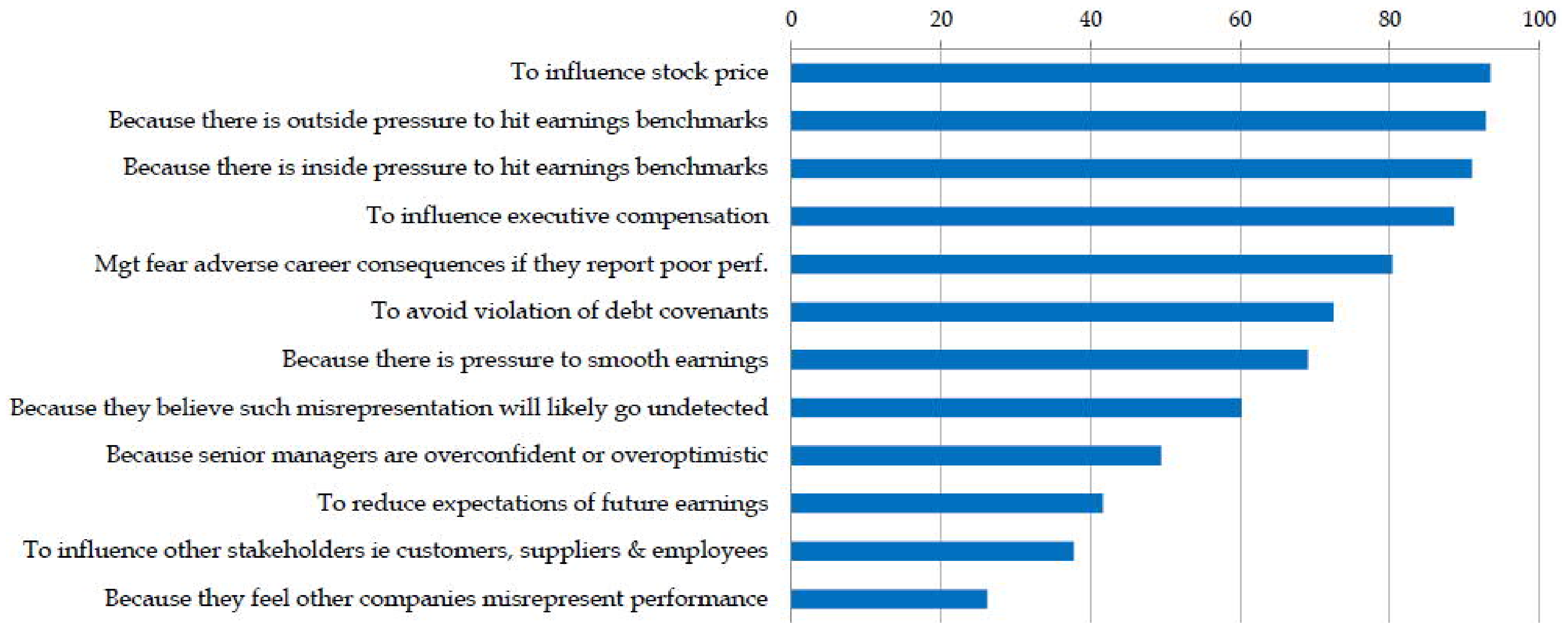


Misrepresent up or down?



Why misrepresent earnings?

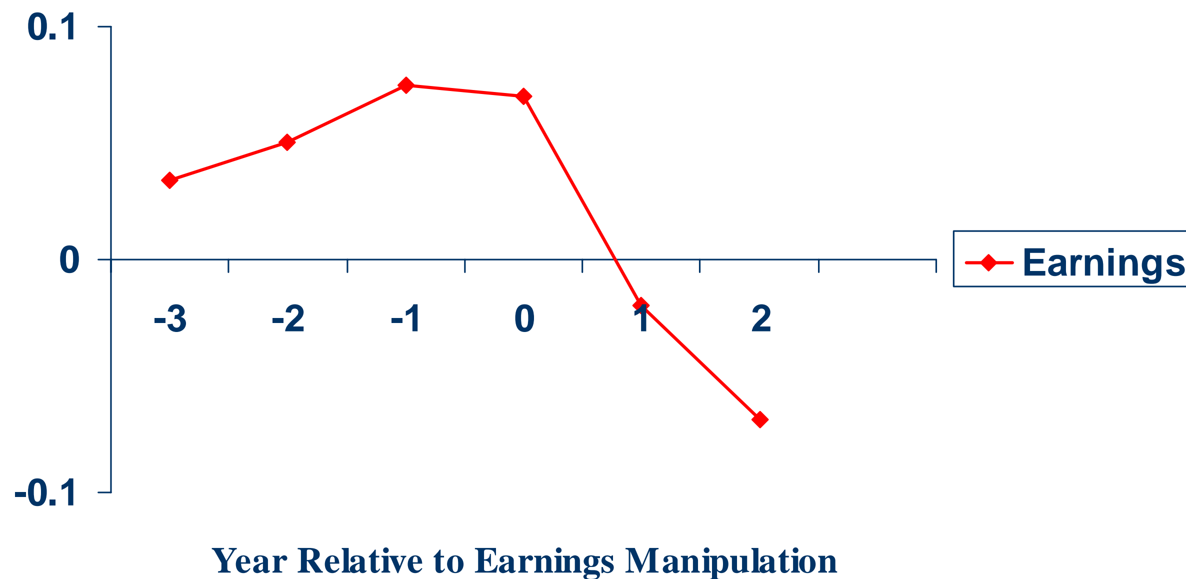
Motivations to Use Earnings to Misrepresent Economic Performance



Red flags (Dichev et al. 2013)

Rank	Red Flag	% of responses (public firms)
1	GAAP earnings do not correlate with cash flow from operations; Weak cash flows; Earnings and cash flow from operations move in different direction for 6-8 quarters; Earnings strength with deteriorating cash flow.	34%
2	Deviations from industry (or economy, peers') norms/experience (cash cycle, volatility, average profitability, revenue growth, audit fees, growth of investments, asset impairment, A/P, level of disclosure)	24%
3	Consistently meet or beat earnings targets (guidance, analyst forecasts)	17%
4	Large/frequent one-time or special items (restructuring charges, write-downs, unusual or complex transactions, Gains/Losses on asset sales)	17%
5	Lots of accruals; Large changes in accruals; Jump in accruals/Sudden changes in reserves; Insufficient explanation of such changes ; Significant increase in capitalized expenditures; Changes in asset accruals, High accrued liabilities	15%
6	Too smooth/too consistent of an earnings progression (relative to economy, market); Earnings and earnings growth are too consistent (irrespective of economic cycle and industry experience); Smooth earnings in a volatile industry	14%
7	(Frequent) Changes in (significant) accounting policies	10%
8	Using non-GAAP (and/or changing) metrics	8%
9	High executive turnover; Sudden change in top management; Change in financial management; Sudden director turnover; Employee (non-management) turnover	8%
10	Inventory build-up/age of raw materials; Build-up in work-in-progress; Mismatch between inventory/COGS/reserves	7%

Why Do We Care About Cash Flows?



Average Earnings and Cash Flow Performance of Firms Caught by the SEC for Manipulating Earnings (Manipulation Occurs in Year 0)

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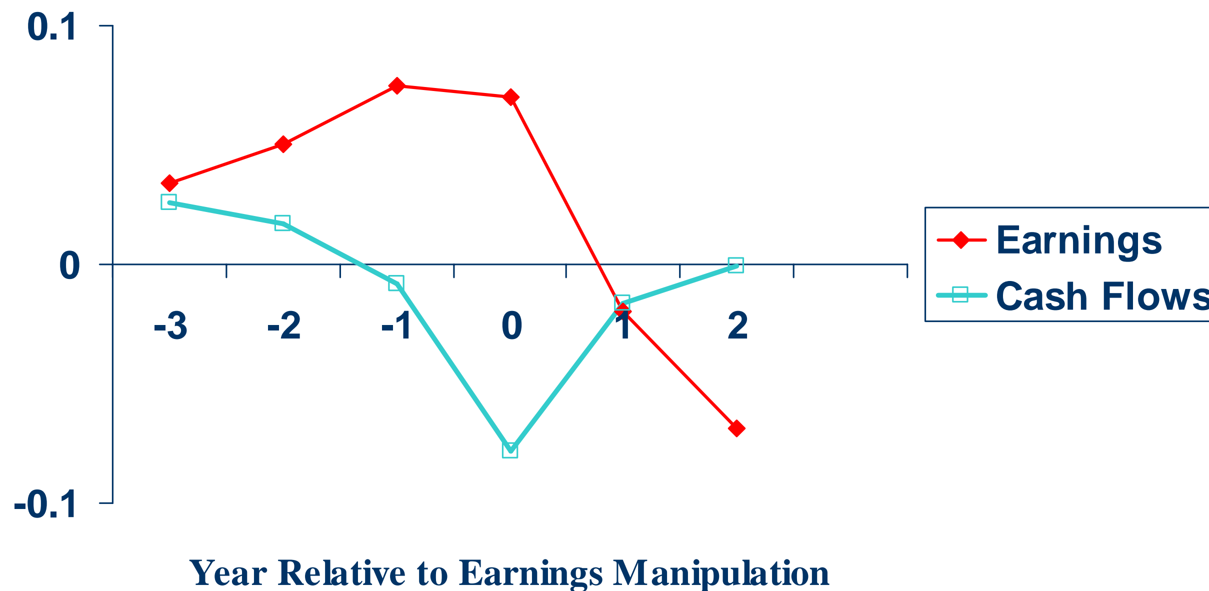

Average Earnings and Cash Flow Performance of Firms Caught by the SEC for Manipulating Earnings (Manipulation Occurs in Year 0)

Converting Revenues and Expenses to a Cash Basis

- **Take the as-reported amount from the income statement**
- **Identify all accrual adjustments relating to that amount from the operating section of the statement of cash flows (indirect method)**
- **Net the adjustments against the as-reported amounts to get the cash basis amount**