Earnings Management

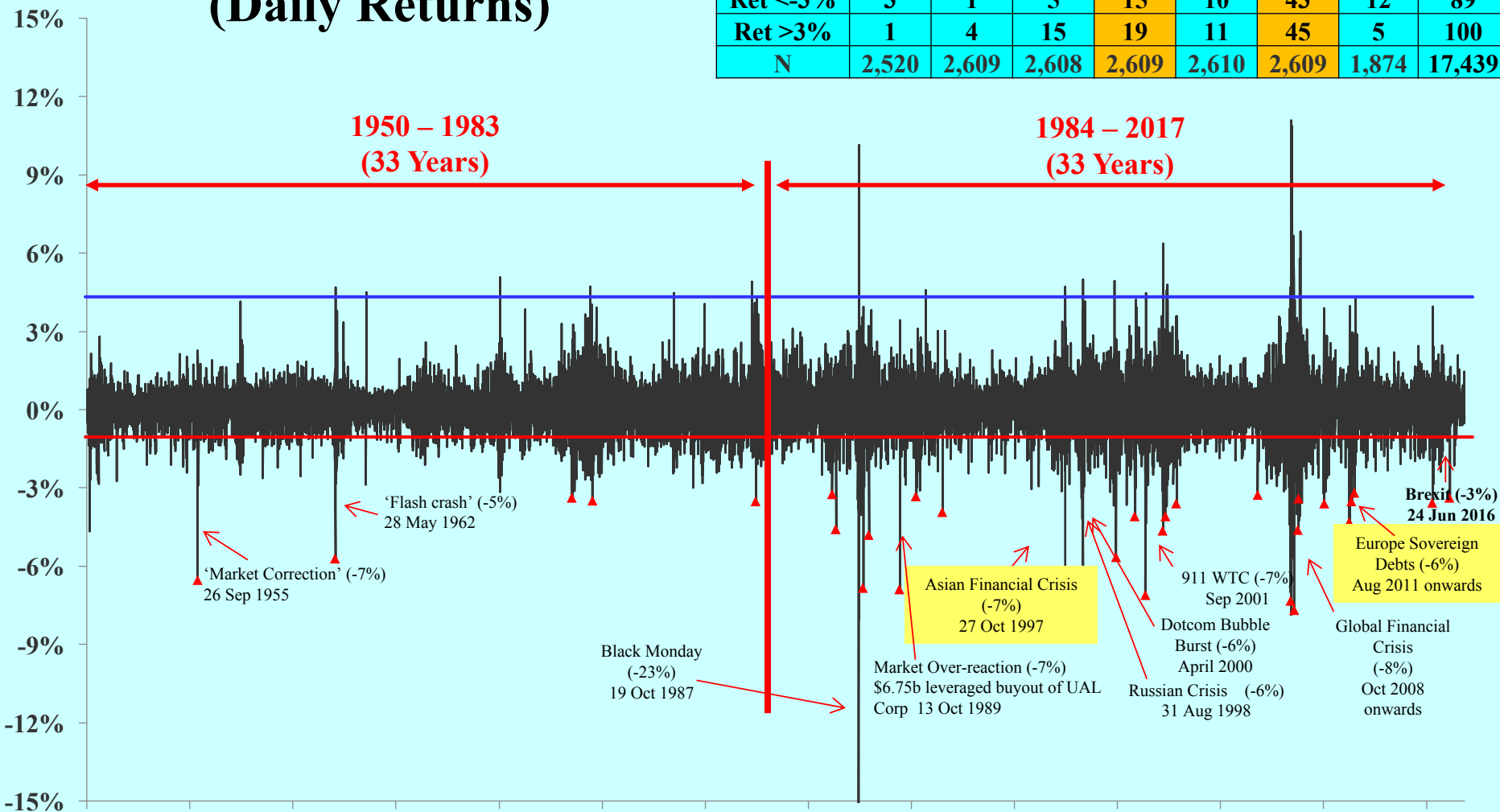# Objectives

☛ **To understand the impact of earnings on an efficient market.**

☛ **To understand the basic motivation behind earnings management**

☛ **To understand that earnings management is predicated upon the recognition of revenue and expenses.**
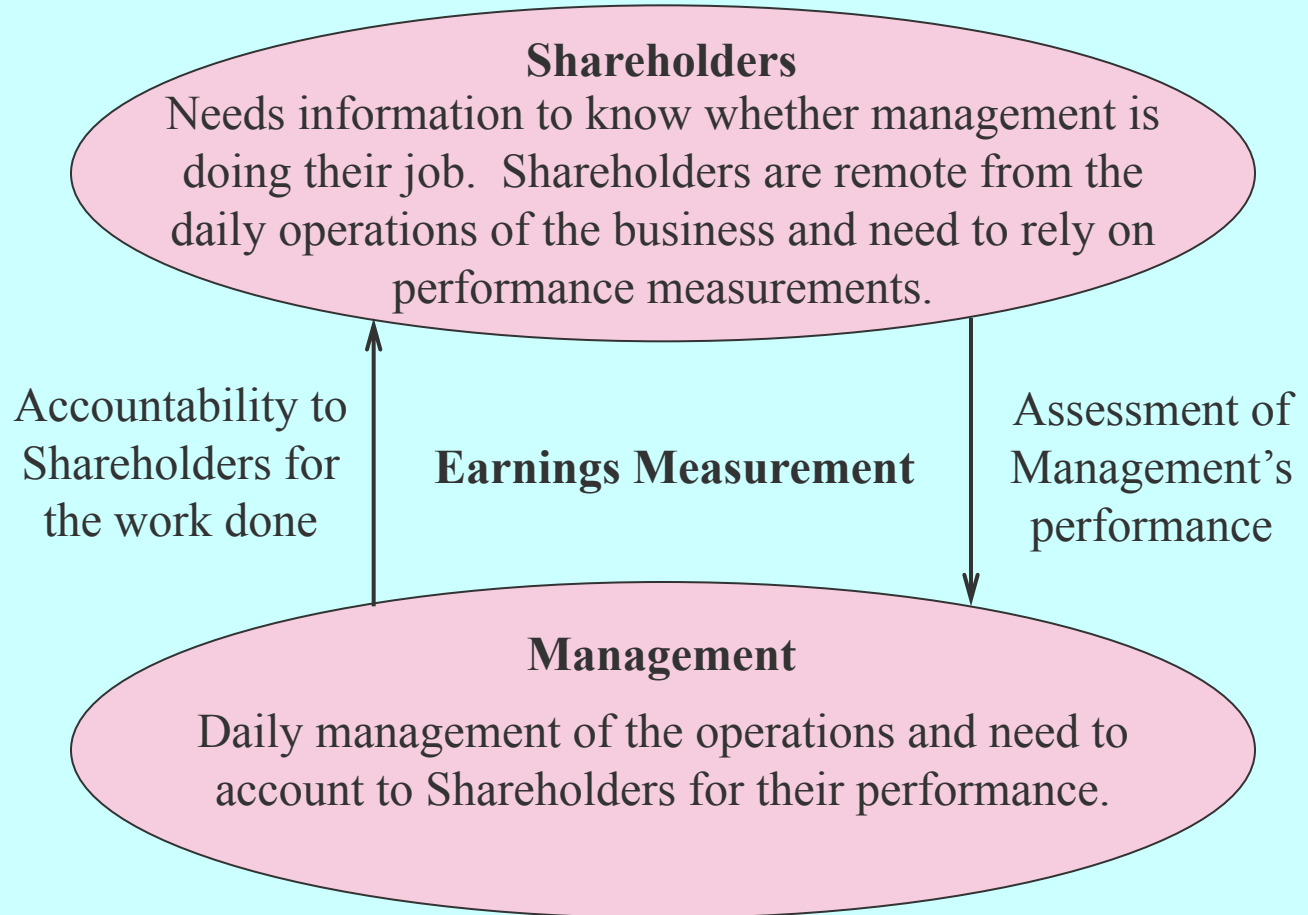
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Dow Jones Industrial Index (Daily Returns)

	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2017	1950-2017
Ret <-3%	3	1	5	15	10	43	12	89
Ret >3%	1	4	15	19	11	45	5	100
N	2,520	2,609	2,608	2,609	2,610	2,609	1,874	17,439

1950 – 1983 (33 Years)

1984 – 2017 (33 Years)

'Flash crash' (-5%) 28 May 1962

'Market Correction' (-7%) 26 Sep 1955

Black Monday (-23%) 19 Oct 1987

Asian Financial Crisis (-7%) 27 Oct 1997

Market Over-reaction (-7%) $6.75b leveraged buyout of UAL Corp 13 Oct 1989

911 WTC (-7%) Sep 2001

Dotcom Bubble Burst (-6%) April 2000

Russian Crisis (-6%) 31 Aug 1998

Brexit (-3%) 24 Jun 2016

Europe Sovereign Debts (-6%) Aug 2011 onwards

Global Financial Crisis (-8%) Oct 2008 onwards

Why is Earning so Important?

Classical Agency Problem

Shareholders
Needs information to know whether management is doing their job. Shareholders are remote from the daily operations of the business and need to rely on performance measurements.

Accountability to Shareholders for the work done

Earnings Measurement

Assessment of Management's performance

Management
Daily management of the operations and need to account to Shareholders for their performance.

Mechanisms to Deal with the Agency Problem

Design the compensation package such that it will induce the desired level of effort.

Monitor and measure the effort such that the managers will perform to expectation.

$$\text{Max}_{\text{Salary, Effort}_m} \left[\Theta(\text{Salary}) - \Psi(\text{Effort}_m) \right]$$

Existence of External Labor Market
Takeover Market that eliminates inefficient and shirking management.
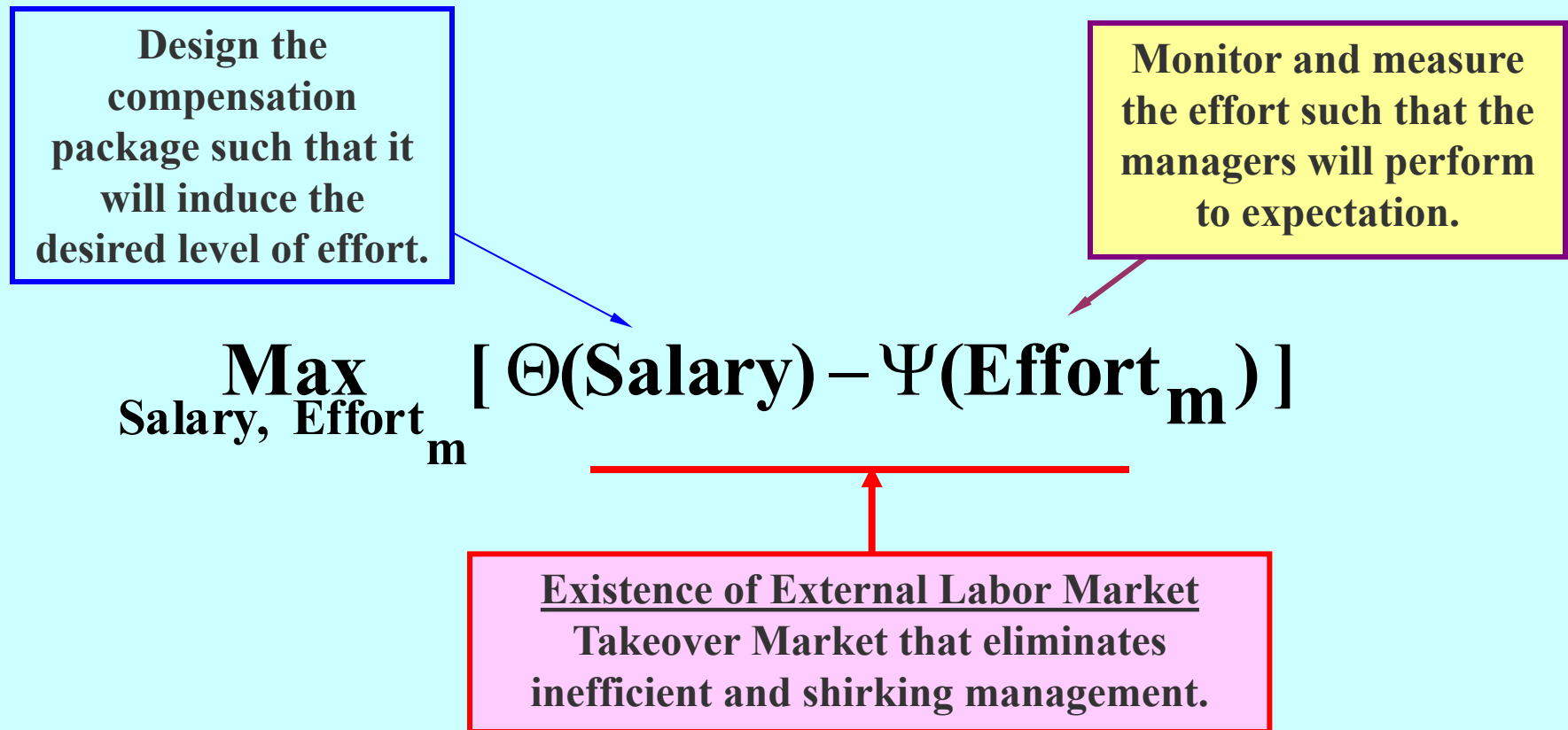
Robust Performance Measurement System

Design the compensation package such that it will induce the desired level of effort.

Monitor and measure the effort such that the managers will perform to expectation.

$$\underset{\text{Salary, Effort}_m}{\text{Max}} \left[\Theta(\text{Salary}) - \Psi(\text{Effort}_m) \right]$$

$$\text{Compensation} = f^+ (\textit{measurable, objective and definable outcomes})$$

Quantitative : Earnings , Share Prices, Market Share, Sales Growth

Qualitative : Reputation, Desired Community Traits

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(April 24-26, 2017)

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Compensation Driven Management's Dilemma

Action A
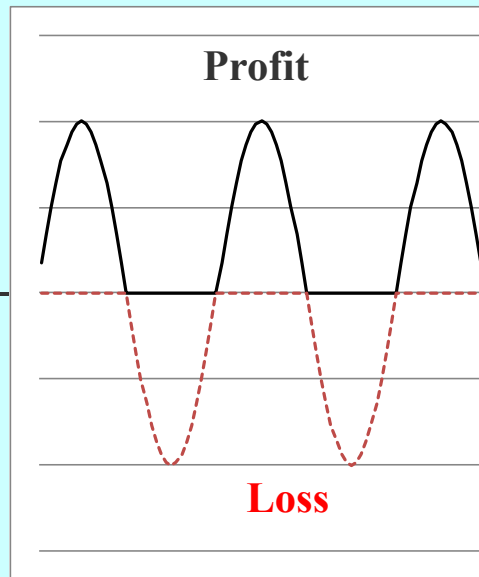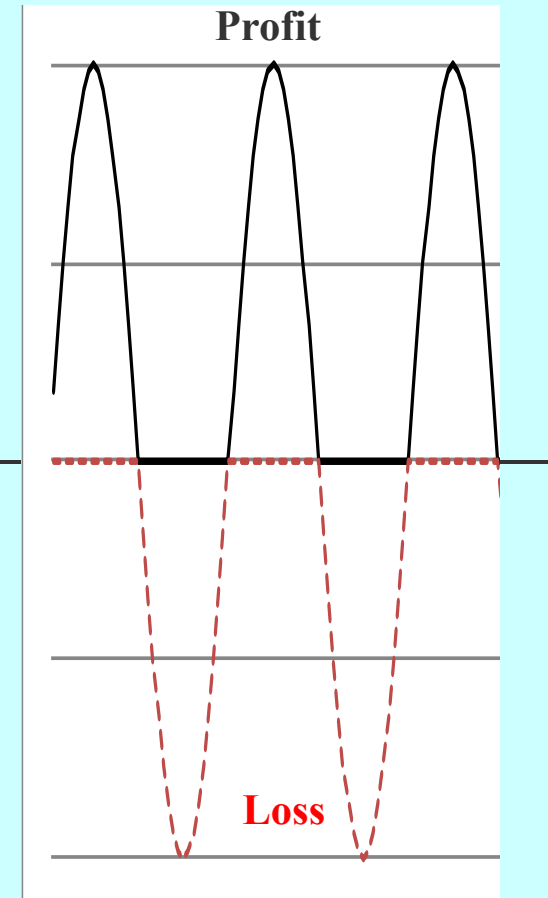
Action B

$$\text{Bonus} = \max\left(0, \oint(\pi)\right)$$

What is the optimal action of the management?

Top Ten CEOs' Compensation in US for 2015

No	CEO Name	Company	Compensation (US$)
1	Joe Kiani	Masimo Corp	$119,222,614
2	Timothy P. Walbert	Horizon Pharma Plc	$93,379,077
3	Mark D. McLaughlin	Palo Alto Networks	$66,606,716
4	Leslie Moonves	CBS Corp	$56,773,822
5	Philippe P. Dauman	Viacom	$54,154,312
6	Mark V. Hurd	Oracle Corp	$53,245,128
7	Robert A. Iger	Walt Disney Co	$44,913,614
8	Howard M. Lorber	Vector Group Ltd	$42,541,730
9	Marc Benioff	Salesforce Com	$39,907,534
10	Omar Ishrak	Medtronic	$39,460,266

http://archive.aflcio.org/corporatewatch/paywatch/

What is Earnings Quality?

Reliability of the earnings number for the purpose of evaluation of the performance of the firm.

Revenue	**-**	Expenses	**=**	Earnings

Why Bother with Earnings Quality?

☛ **Valuation.**

☛ **Management's attitude.**

☛ **Quality of the accounting information system.**

☛ **Risk and financial management assessment.**

$$\sum_{t=1}^{T} \frac{NI_t}{(1 + r)^t} \implies \sum_{t=1}^{T} \frac{C_t}{(1 + r)^t}$$

Basic valuation formula

Determinants of Earnings Quality

☛ **Integrity and quality of management.**

☛ **Sound corporate governance (check & balance).**

    ☛ **Audit committee**

    ☛ **Remuneration committee**

☛ **Quality of internal control.**

☛ **Independent audit.**

☛ **Knowledgeable and unbiased analysts and financial press.**

☛ **State of securities law (severity of punishment for fraud)**

☛ **State of the Economy**

Disciplinary Role of the Market for Listed Companies
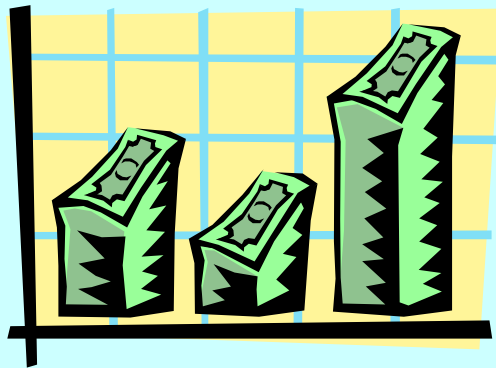
- **EPS target**

- **Recommendation**

- **Price target**

- **Growth forecast**
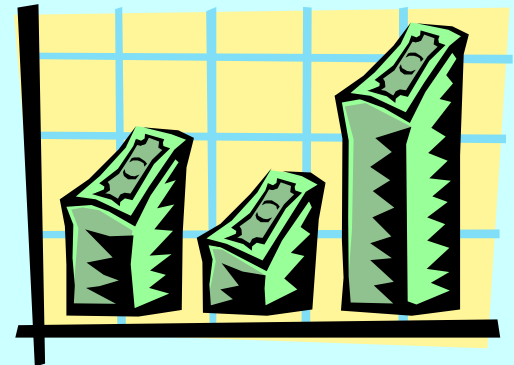
Reuter's Analysts' Report on Toshiba

Consensus Recommendations (March 2016)

1-5 Linear Scale	Current	1 Month Ago	2 Month Ago	3 Month Ago
(1) BUY	0	0	0	0
(2) OUTPERFORM	2	2	2	3
(3) HOLD	6	6	7	7
(4) UNDERPERFORM	7	7	5	5
(5) SELL	1	1	1	1
Mean Rating	3.44	3.44	3.33	3.25

Consensus Recommendations (March 2017)

1-5 Linear Scale	Current	1 Month Ago	2 Month Ago	3 Month Ago
(1) BUY	0	0	1	1
(2) OUTPERFORM	4	5	6	7
(3) HOLD	4	5	4	3
(4) UNDERPERFORM	3	3	2	2
(5) SELL	2	1	1	1
Mean Rating	3.23	3.00	2,71	2.64

Analysts Recommendations and Revisions (Mar 2016)

No. of Revisions	Last Week		Last 4 Weeks	
	Up	Down	Up	Down
Quarter Ending Jun-16	0	0	0	0
Quarter Ending Sep-16	0	0	0	1
Year Ending Mar-16	0	1	0	8
Year Ending Mar-17	0	1	0	9

Analysts Recommendations and Revisions (Mar 2017)

No. of Revisions	Last Week		Last 4 Weeks	
	Up	Down	Up	Down
Quarter Ending Jun-17	0	1	0	1
Quarter Ending Sep-17	0	1	0	1
Year Ending Mar-17	0	1	3	1
Year Ending Mar-18	0	2	1	3

Share Prices of Toshiba

	Price	% Change
05-Jan-15	518.6	
12-Feb-16	158	-69.5%
14-Dec-16	467.8	196.1%
09-Mar-17	204.8	-56.2%

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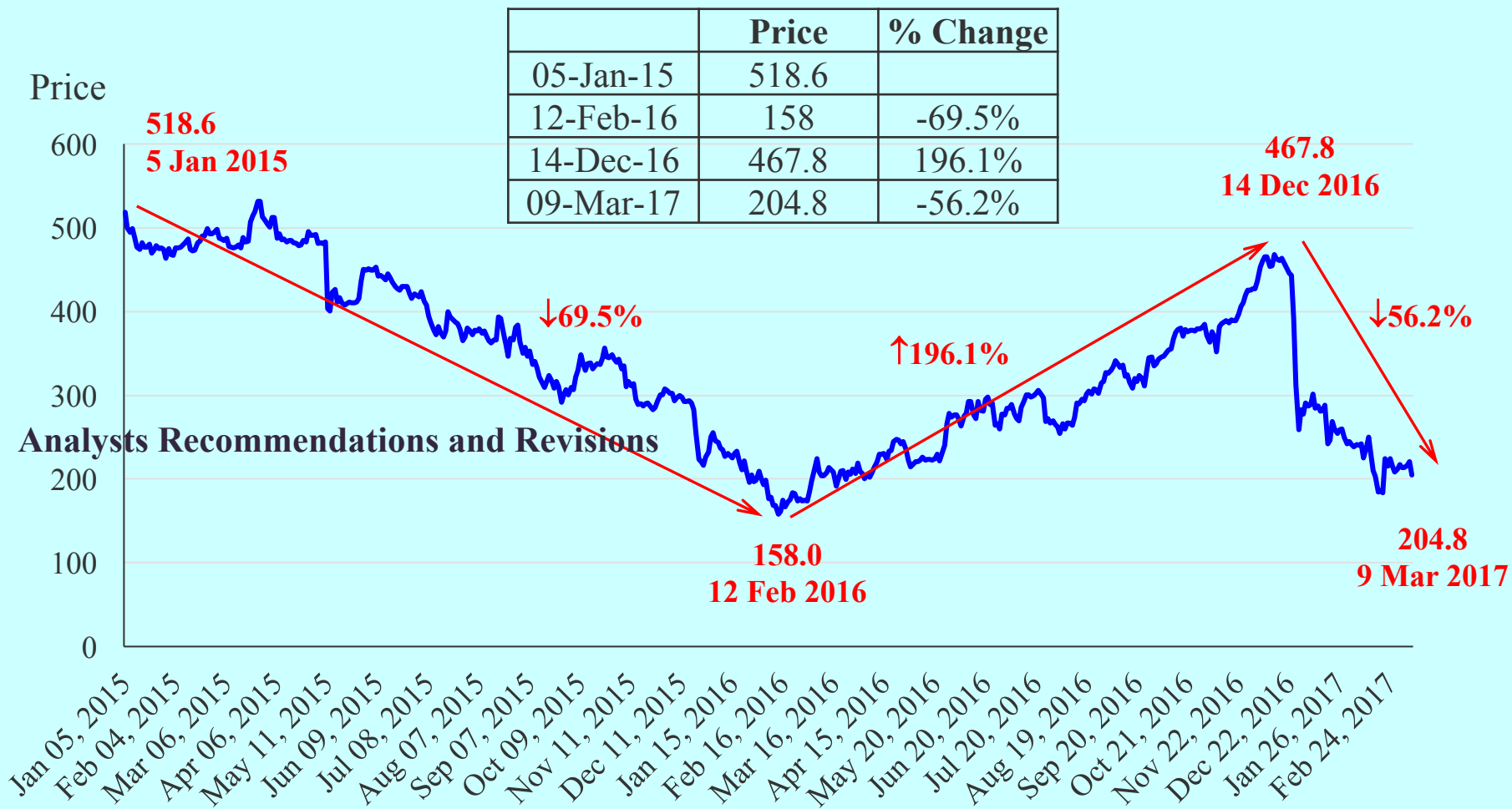
Earnings and Share Price Relationship (US Evidence)

3-Day Return (-1,+1)

Beat benchmark

Accounting measures transfer wealth from one market participant to another.

Ho and Sequeira (2007)

Miss benchmark

Forecast Errors

$$\frac{\text{(Actual - Forecast)}}{\text{Share Price}}$$

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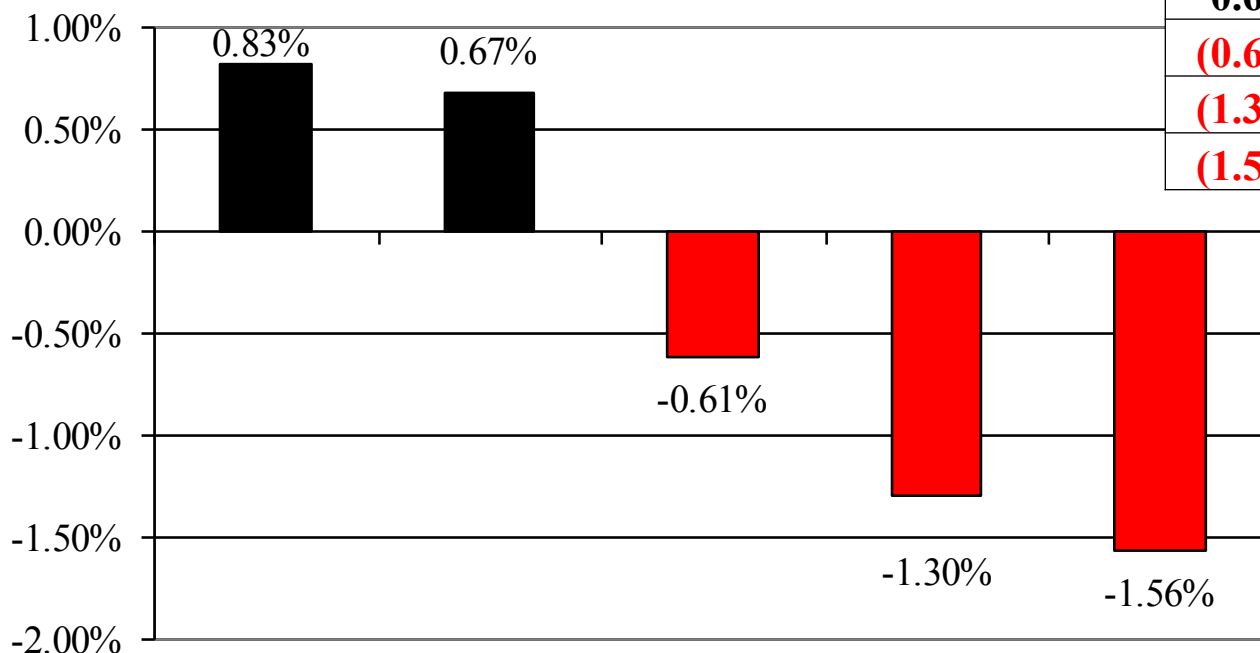
Firms Beating Consensus Earnings Benchmark (US Evidence)

Chan, Ho and Holland (2005)
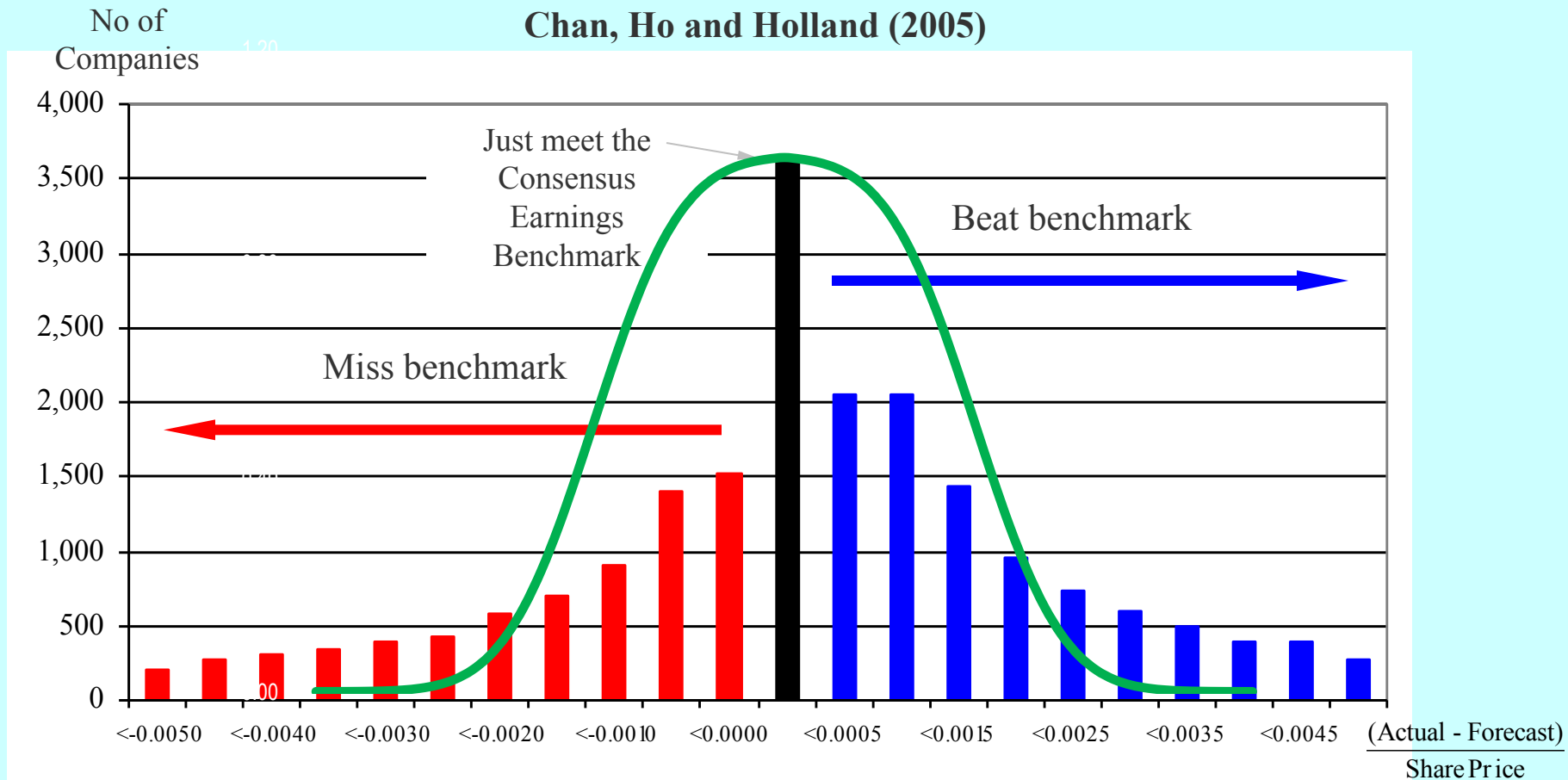
Analyst Recommendations and Share Price Relationship (Australia Evidence)

Brown, Chan and Ho (2009)

5-Day Return (-4,+1)

AR(-4,+1)	Annualized
0.83%	50.49%
0.67%	40.76%
(0.61%)	(37.11%)
(1.30%)	(79.08%)
(1.56%)	(94.90%)

Recommendations	Strong Buy	Buy	Hold	Underperform	Sell	
Number	2,543	3,414	6,331	1,023	1,151	14,462
(%)	(17.6%)	(23.6%)	(43.8%)	(7.1%)	(8.0%)	(100.0%)

Earnings Management

Earnings is an outcome

Therefore Earnings Management is carried out through the recognition of Revenue and Expenses.

Recognition of Revenue

Earned Concept – Completion of the earning process

Realizability Concept – Assurance of payments

Recognition of Expenses

Match expenses through time.

Match expenses through usage.

Earnings is an outcome

Revenue	–	Expenses	=	Earnings
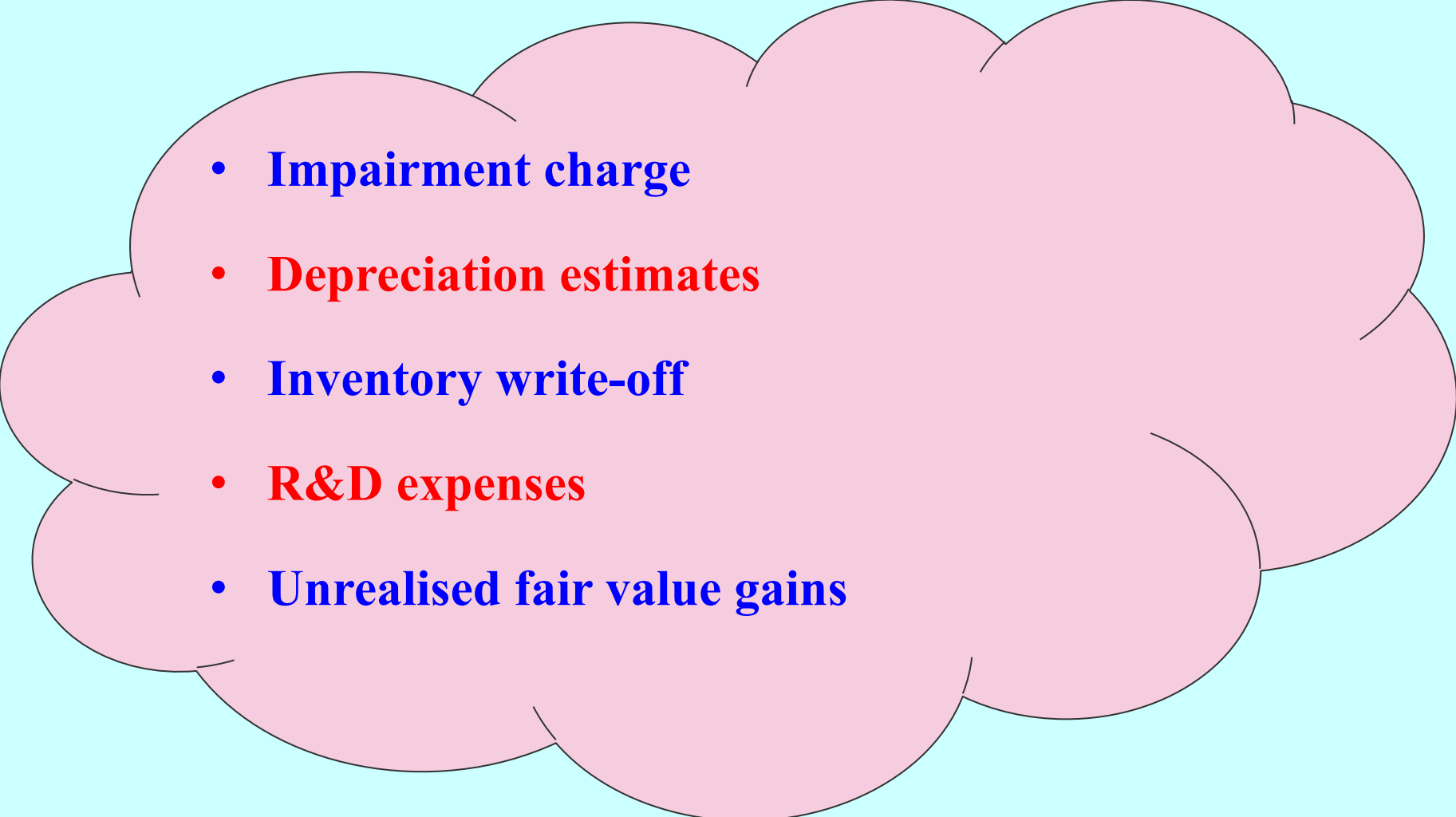
Opportunities for Earnings Management

- **New and sophisticated transactions**

- **New technologies and system**

- **Poor internal controls**

- **Lack of vigilance and due diligence**

- **Power distance in management**

- **Subjective decision making and judgement**

Revenue Recognition Challenges

- **Sale of vouchers**

- **Sales of Spa packages**

- **Sales of airline tickets with frequent flyer mileage**

- **Sale of phone cards**

- **Sale of highly subsidized hand phones**

Expenses Recognition Challenges

- **Impairment charge**

- **Depreciation estimates**

- **Inventory write-off**

- **R&D expenses**

- **Unrealised fair value gains**

Importance of Impairment

If a company has not taken on the full extent of impairment, its asset book value will be over-valued and its P/B ratio (lower than its peers) will not be representative of its market valuation.

The ROA will be lower, implying the company is deriving less profit from the asset.

Importance of Impairment

Assets should be valued by the net present value of their projected cash flow contributions.

When an asset carries book values that are above the NPV of their cash flows, in accounting terms, the company is considered to have over-paid for the asset.

Conclusion

☛ **Earnings Quality is extremely important for an efficient market.**

☛ **Significant amount of game playing in the earnings reporting, ie. window dressing and soft number.**

☛ **The mechanics of earnings management is through revenue and expenses recognition.**