SFB/Transregio 266
ACCOUNTING FOR
TRANSPARENCY

Research on Corporate Transparency

Element 11: Market Efficiency

Joachim Gassen

TRR 266 Accounting for Transparency

May 22, 2021

A definition

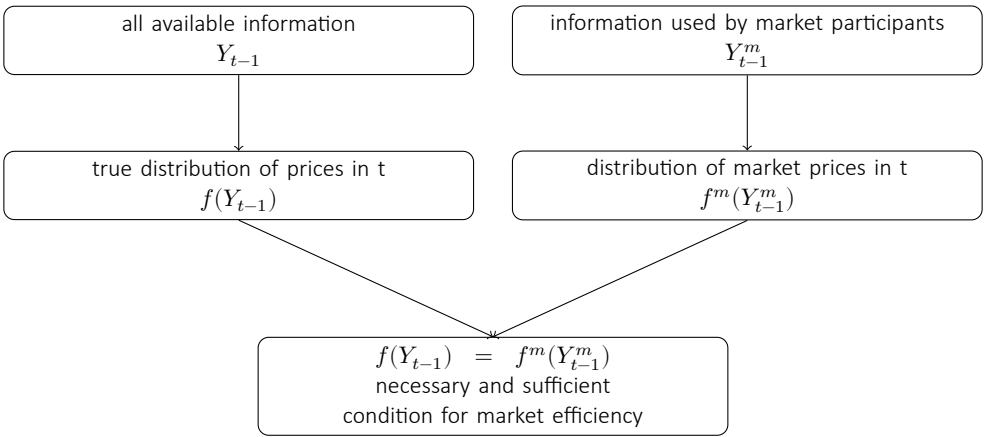
A market in which prices always 'fully reflect' available information is called 'efficient'.

— Eugene Fama (1970, JoF)

Sufficient conditions for market efficiency

1. No trading/transaction costs
2. Information is available for all investors at no costs
3. Investors are rational and have homogeneous beliefs

A formal representation



Implication for asset prices

- All available information is impounded into prices
- Prices react to new information, which arrives randomly
- Security prices follow random walk process
- Investment is a fair game
- The expected abnormal return from informed trading is zero
- Investors are price-protected

Forms of market efficiency

Market efficiency relates:

- to the speed and correctness, with which information is factored into prices and
- to one specific information set.

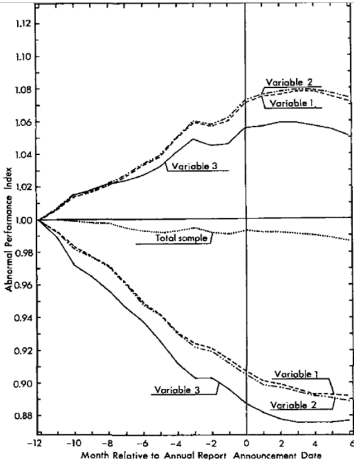
Fama (1970) differentiates three information sets and hence three forms of market efficiency

- weak: Y_{t-1} contains all market prices observable up to $t-1$
- semi-strong: Y_{t-1} contains all publicly available information up to $t-1$
- strong: Y_{t-1} contains all information up to $t-1$

‘The’ accounting classic: Ball and Brown (JAR, 1968)

- Design of event study:
  - Market reaction to annual earnings announcements of U.S. firms
  - Sample contains 261 listed (NYSE) firms and covers fiscal years 1957-1965
  - Data for the event study: EPS, earning announcement dates, share returns
- Measuring earnings surprise:
  - Earnings surprise (unexpected earnings) as actual EPS minus expected EPS
  - Expected EPS proxied by prior period’s EPS
  - Based on sign of this earnings surprise, firm observations are allocated to two portfolios (good news – positive surprise; bad news – negative surprise)
- Measuring market reaction:
  - Calculation of monthly abnormal returns for each observation with variant of CAPM (abnormal return = actual return – expected or beta return)
  - Monthly abnormal returns are summed up as cumulative residual price changes for the good news portfolio and the bad news portfolio

Ball and Brown (JAR, 1968): Main takeaways



Information content of earnings (announcements)

- In the short/narrow window around the announcement date, a strong relation between abnormal earnings and abnormal returns was found

Prices lead earnings

- The market anticipates earnings information, a large fraction of which is impounded into prices prior to the earnings release

Prices lag earnings

- Significant cumulative abnormal returns also occur in the post-announcement period
- Indicates that market under-reacts to earnings innovations: Post-earnings announcement drift