A Real Effects Perspective to Accounting Research: Insights and Implications

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My Research Interests

- I am an applied theorist who studies economic models of accounting measurement and disclosure issues.
- In particular, my research focuses on the *real effects* of accounting measurement and disclosure issues.
- I am currently studying issues of disclosure, transparency, and financial reporting of financial institutions:
  - The relationship between book or GAAP equity and bank capital:
    - For example, the extent to which they should be linked or decoupled?
    - How do accounting measurement rules interact with banks' capital requirements to affect banks' loan portfolios?
  - The accounting for loan loss reserves on banks' risk-taking behaviour:
    - Incurred Loss vs. Expected Loss Models

Outline

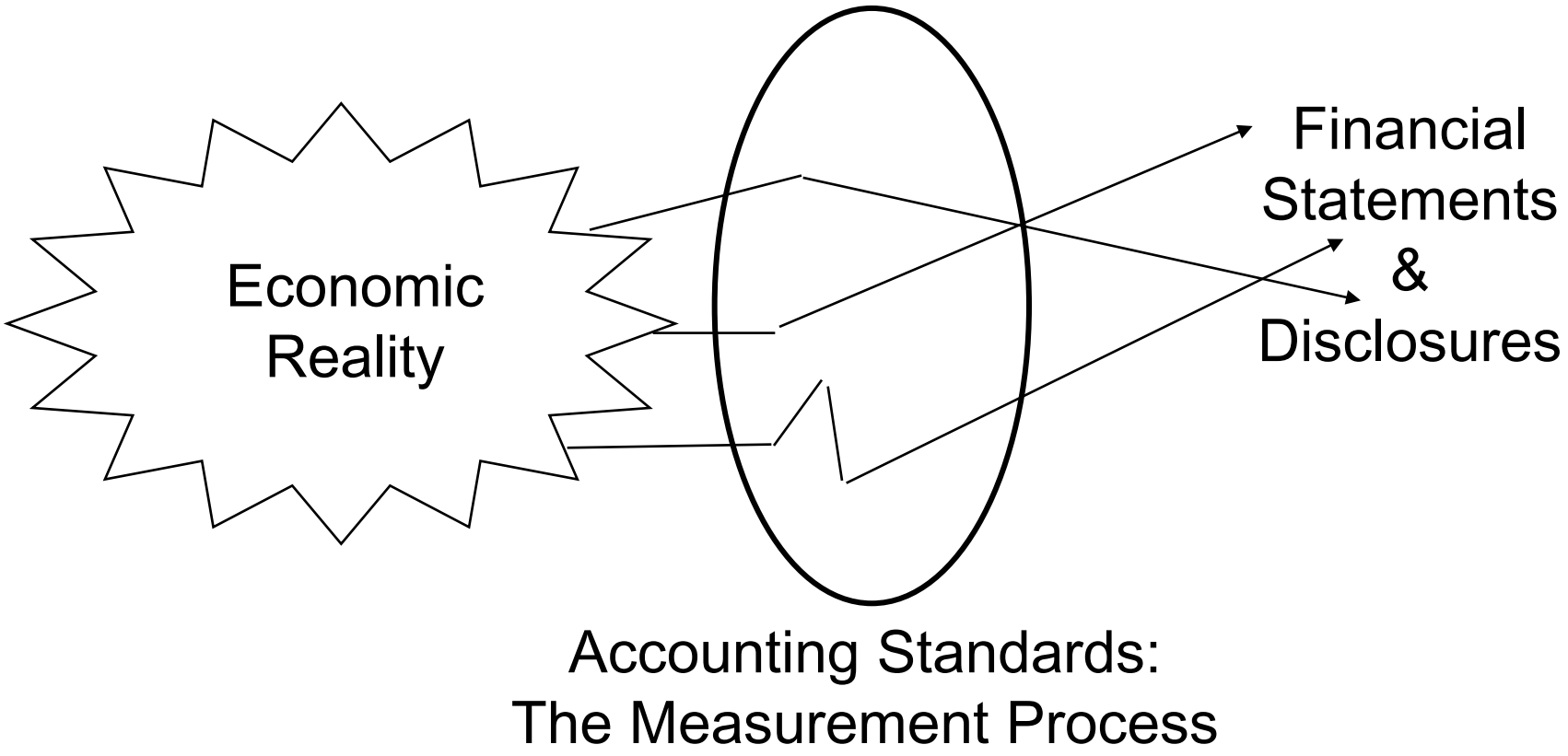
1. What do I mean by “Real Effects” of accounting standards?
2. Conventional studies on disclosure/transparency.
3. A generic model to illustrate how accounting has “Real Effects.”
4. Discussion of some “Real Effects” studies on transparency.
5. Opportunities for Empirical Research.
6. Concluding Remarks.

What do I mean by “Real Effects”?

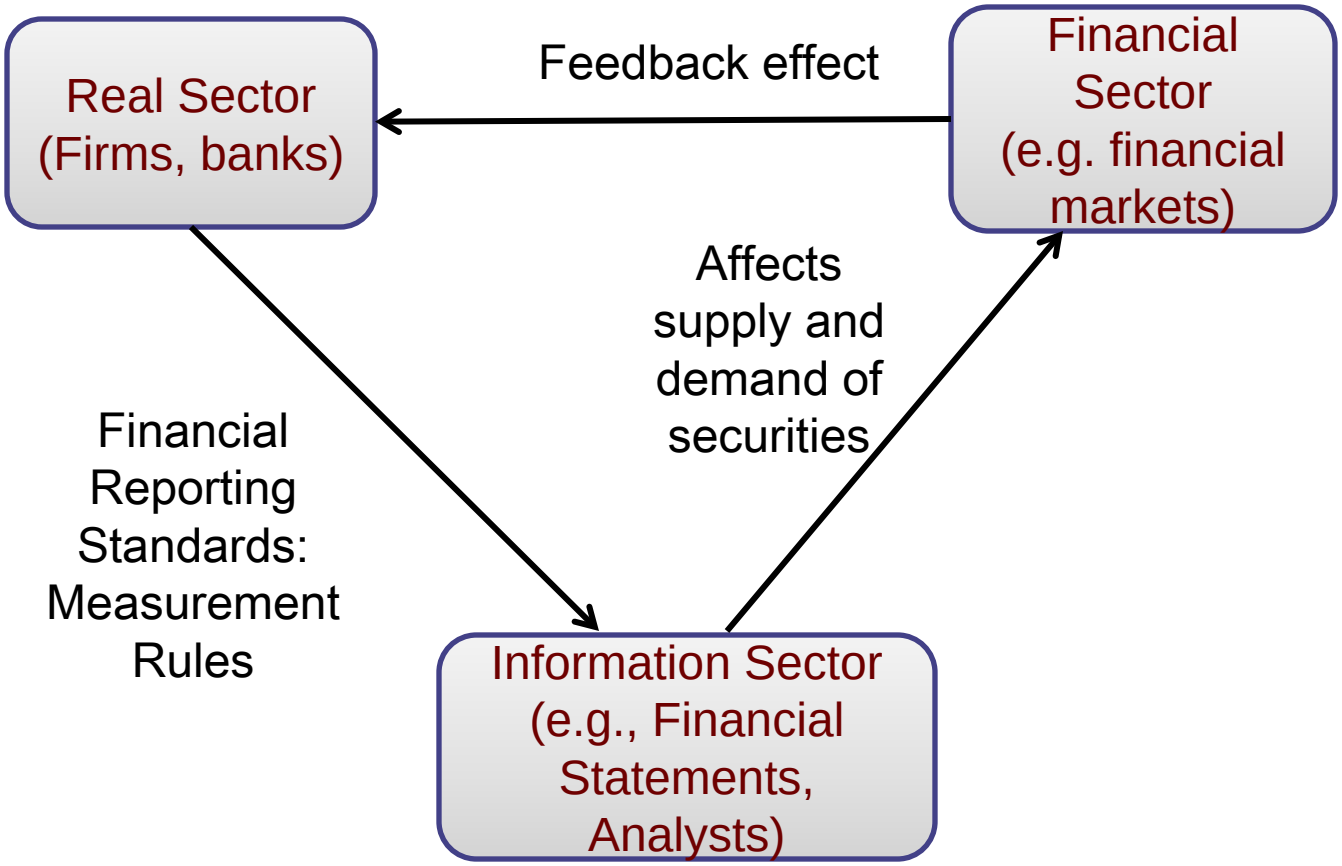
- What we measure, how we measure, what we disclose, and how we disclose to financial markets will significantly affect the real decisions that firms make.

- There is a two-way relationship between firms and financial markets.

Conventional View on Accounting: It *reflects* Economic Reality



A "Real Effects" View of Accounting: It *both* reflects *and* changes Economic Reality



Conventional Research on Disclosure

Robert Verrechia (*JAE,* 2001) describes disclosure studies as belonging to one of three categories:

1. *Association-based* studies that document the effect of disclosure on equilibrium asset prices and trading volume through capital market traders' assessment of firms' liquidating dividends.

2. *Discretionary-based* studies which examines a firm's incentives to voluntarily disclose or withhold information about its liquidating dividends.

3. *Efficiency-based* studies where a firm makes ex-ante commitments to publicly disclose or withhold information to reduce the firm's cost of capital.

Conventional View on Disclosure

- Note that all these three types of studies are typically conducted in *pure exchange* economies where:
  - The firm is viewed as a black box that somehow functions independently of the disclosure environment.
- Given this assumption:
  - Higher transparency (vis greater disclosure) is always desirable as improves market discipline.
  - Market discipline, in turn, improves price efficiency
  - Such price efficiency, in turn, improves resource allocation and therefore economic efficiency.

Conventional View on Disclosure

- Costs and Benefits of Increasing Transparency: Trade off the benefits of higher price efficiency against proprietary costs.
  - ➢ In fact, many researchers equate a higher price efficiency with a lower "cost of capital" and a lower cost of capital is equated with higher price efficiency.
- Note that from a social welfare perspective, proprietary costs could be very small!
- What is missing from this conventional view?

“Real Effects” View on Disclosure

- Firms are run by insiders that face market pressure:
  - ➢ Such market pressure induce insiders to respond to changes in the disclosure environment.
- If how accountants measure and disclose a firm’s economic transactions changes those transactions, then in evaluating the desirability of higher transparency, these real effects must be identified and quantified.

Two Conditions for the presence of Real Effects

1. **Information asymmetry between the firm's insiders and the market:**

   At the time that decisions are made, corporate managers are more informed than the market.

2. **Impatient Shareholders:**

   The rewards to stakeholders depends upon the ***time path*** of market prices, not upon the accumulation of cash flows until some terminal date.

A Generic Model to show "Real Effects"

- At date 0, manager chooses a decision $d \in D$ that generates cash flows $\tilde{x}_1, \tilde{x}_2, \tilde{x}_3$ at dates 1, 2, 3.

- Y_0^F = information set of the firm's manager at date 0.

- Y_0^m, Y_1^m, Y_2^m = the information sets of the firm's shareholders at dates 0, 1,2 respectively where $Y_0^m \subseteq Y_1^m \subseteq Y_2^m$

- Suppose shareholders hold the firm until the terminal date, then benevolent managers choose d to maximize:

$$E(\tilde{x}_1 + \tilde{x}_2 + \tilde{x}_3 \mid Y_0^F)$$

- Given that the manager is better informed than the market, and given that the manager is benevolent, delegation of decisions to the manager will result in first best decisions.

- No demand for disclosure and therefore accounting (other than to allocate capital across firms).

- Impatient Shareholders:

$$Max_d \; E[\alpha \tilde{P}_1 + (1-\alpha)\tilde{P}_2 \mid Y_0^F]$$

$$where \; P_1 = x_1 + E[\tilde{x}_2 + \tilde{x}_3 \mid Y_1^m]$$

$$and \; P_2 = x_1 + x_2 + E[\tilde{x}_3 \mid Y_2^m]$$

- Suppose initially that everything the manager knows at date 0 is also known to the capital market at date 1, i.e., $Y_0^F \subset Y_1^m$.

- Then, using the law of iterated expectations:

$$E(\tilde{P}_1 \mid Y_0^F) = E(\tilde{x}_1 \mid Y_0^F) + E[E(\tilde{x}_2 + \tilde{x}_3 \mid Y_1^m) \mid Y_0^F]$$

$$= E[\tilde{x}_1 + \tilde{x}_2 + \tilde{x}_3 \mid Y_0^F]$$

- Similarly,

$$E(\tilde{P}_2 \mid Y_0^F) = E(\tilde{x}_1 + \tilde{x}_2 \mid Y_0^F) + E[E(\tilde{x}_3 \mid Y_2^m) \mid Y_0^F]$$

$$= E[\tilde{x}_1 + \tilde{x}_2 + \tilde{x}_3 \mid Y_0^F]$$

- Therefore, $E(\tilde{P}_2 \mid Y_0^F) = E(\tilde{P}_1 \mid Y_0^F)$

- This implies:

$$E[\alpha \tilde{P}_1 + (1-\alpha)\tilde{P}_2 \mid Y_0^F] = E[\tilde{x}_1 + \tilde{x}_2 + \tilde{x}_3 \mid Y_0^F] \;\; \forall d, \forall \alpha$$

- So again, first best decisions are attained without the need for any disclosure. Shareholder impatience does not matter.

- But suppose the manager has relevant information that is not possessed by the market, i.e.,

$$Y_0^F \not\subset Y_1^m$$

- Then the law of iterated expectations fails!

- The decision chosen by the manager will depend on the *interaction* between what the manager knows and what markets infer from accounting measurements and disclosure.

- In general, the manager's decision will not attain first best, even though the manager is benevolent.

- If the market's information set at dates 1 and 2 depends at least partially upon what is measured and disclosed to potential stakeholders, then accounting standards will have real effects.

1. More disclosure is not always desirable...

- Suppose there are two value relevant variables *x* and *y* and the values of both are known to the firm's insiders.
- However, it is infeasible to credibly disclose information about variable *x* to the capital market
- But it is feasible to measure and credibly disclose information about variable *y* as precisely as possible…
- Given that *x* cannot be disclosed, is it socially desirable to measure and disclose *y* as precisely as possible?

- I will show you that from the “real effects” perspective, the answer is not necessarily yes!

- Put differently, disclosure of *everything* the manager knows is ideal. But if some of the manager’s information cannot be credibly disclosed for non-verifiability reasons then it may turn out to be optimal to *suppress* some of the manager’s information from the market.

- Note that if we ignore “real effects”, more information is always better!

2. Price Efficiency is not equivalent to Economic Efficiency…

- More disclosure typically increases price efficiency.
- However, in the presence of real effects, greater transparency may *increase* price efficiency or market discipline but *not necessarily* economic efficiency.
- This observation calls into question empirical studies using "cost of capital" to evaluate the desirability of disclosure.
  - ➢ A lower "cost of capital" from a change in disclosure regime does not necessarily mean that such a change is desirable!

3. Total Information in the capital market is a deceptive metric…

- It is *the channel* through which information is communicated and not total information communicated that is important:
  - ➢ Information communicated through cash flows detracts from economic efficiency, while information communicated through earnings enhances economic efficiency.
    - The greater the weight that market prices put on earnings relative to the weight on cash flows, the higher is the quality of accounting. (consistent with the intuition that less noise in accounting accruals increases the quality of accounting)
  - ➢ Information extracted from observed decisions (i.e. signaling) results in lower economic efficiency than direct communication via accounting measurements and disclosure.

Examples of some "Real Effects" Studies

- How do banks' alternative loan loss provisioning models affect the composition of banks' loan portfolios?
- Should intangible investments be measured and reported?
- What is the impact of mark-to-market accounting on the composition of banks' loan portfolios?
- What is the impact of marking derivatives to market on firms' risk taking behaviour?

Study #1: Should the frequency of mandatory financial reporting be increased?

- Increasing the frequency of financial reporting has been the subject of extensive debate by regulatory bodies across the globe.

  - Proponents argue that greater frequency improves the timeliness of earnings and reduces information asymmetry between managers and shareholders (price efficiency argument)

  - However, opponents cite excessive management focus on short term results and myopic tendencies to report positive performance (sounds like a real effects argument!)

- Consider a manager who chooses between a routine and an innovative project to maximize the path of expected stock prices, i.e.,

$$Max\ \alpha E_0(\widetilde{P}_1) + (1-\alpha)E_0(\widetilde{P}_2)$$

- Routine project differs from the innovative project as follows:

  - Relative to the innovative project, the routine project generates higher stochastic cash flows in the early periods but lower stochastic cash flows in the future periods.
  - But, the innovative project--not the routine project--maximizes economic efficiency.

- In a first-best (ideal) world, shareholder myopia, by itself, does not induce the manager to choose the routine project! Why?

- Now consider a second-best environment with the following two imperfections:
  - Insiders know more about the profitability about the underlying projects but such information cannot be credibly disclosed to outsiders.
  - While outsiders can observe the cash flows from the projects, they cannot discern between the firm's project choice, i.e., the routine versus the innovative project.

- Gigler, Kanodia, Sapra, and Venugopalan (2014) study the economic trade-offs in increasing the *frequency* of financial reporting in such a second-best environment.

  - If the firm's project choice is kept fixed (exogenous), we show that the answer is unambiguously in the affirmative!

  - But given that the firm's project choice is endogenous, we show that while frequent disclosure makes prices more efficient, it might also induce the manager to choose the sub-optimal routine project, which reduces economic efficiency.

    - Trade-off between higher *ex post* price efficiency versus lower *ex ante* economic efficiency.

    - Less frequent disclosure could improve *ex ante* incentives by destroying interim information.

Empirical Evidence on the real effects of Increasing reporting frequency

- Kraft, Vashishtha, and Venkatachalam (WP, 2015) provide evidence on the effects of increased reporting frequency on firms' investment decisions.

- The authors exploit the variation in US firms' reporting frequencies over the period 1950-1970.

- Using a DID design, the authors show that increased reporting frequency is associated with an economically large decline in investments.

  - These findings are most consistent with frequent financial reporting inducing myopic management behavior.

Study #2: What are the economic trade-offs in using fair value accounting?

- Market price reflects current terms of trade between willing parties.

- Market price gives better indication of current risk profile and therefore improves market discipline, and therefore resource allocation the economy.

- Good corporate governance and fair value accounting are seen as two sides of the same coin.

However, many financial institutions have resisted Fair Value Accounting…

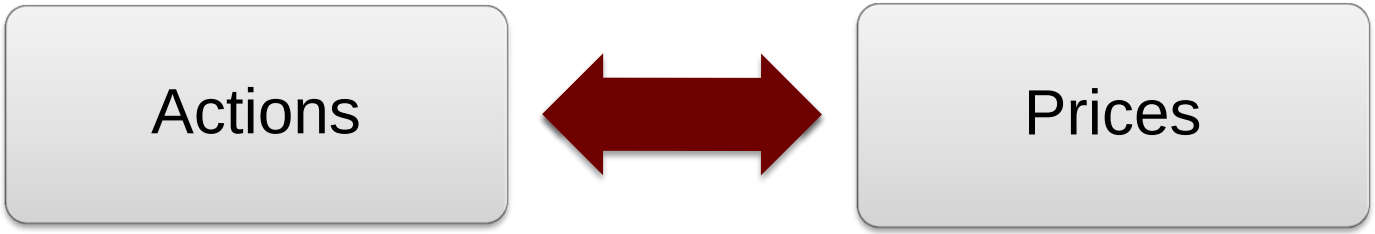
- Illiquid assets such as long term loans, corporate bonds, and structured derivative products:
  - Do not trade in deep and liquid markets.
  - Trade in illiquid and incomplete markets such as OTC markets where prices are determined via bilateral bargaining and matching.
  - Fair value computed using stochastic discount rates implied by recent transactions of comparable assets.
- Fair value injects *excess volatility* in prices of illiquid assets. Why?

What about volatility?

- If the fundamentals are volatile, then so be it....
- Market price is volatile…
- And therefore fair value accounting is simply reflecting the volatility of the fundamentals.

Dual role of market price

- Reflection of fundamentals
- Influences actions



- When markets for assets are illiquid and incomplete (generally true for many asset classes of financial institutions), reliance on market prices *distorts* market prices.

Plantin, Sapra, and Shin (2008)

In a world of market imperfections such illiquid and incomplete markets, what are the real effects of a *historical cost* measurement regime versus a *fair value accounting* measurement regime?

Trade-offs between Historical Cost vs. Fair Value Accounting

- Historical Cost Accounting: banks decisions not very sensitive to market prices:

  - **Induces gains trading***:* banks hold on to assets with depressed prices and sell assets that have increased in prices.

- Fair Value Accounting: decisions too sensitive to market prices.

  - **Induces procyclicality:** banks' actions are pro-cyclical and destabilize financial markets**.**

Fair Value Accounting is not a panacea…

- While more information about the performance of banks' asset portfolios is useful for market discipline, it also changes the *very nature* of the assets that banks' are holding!

  - In the presence of illiquid markets for banks' assets, fair value induces pro-cyclicality which reduces economic efficiency!

- Banks will change their business practices in response to accounting measurements and such real effects could be socially detrimental, even though the information provided to outsiders (via fair value accounting) is enhanced.

Opportunities for Empirical Researchers

- The empirical evidence on the presence of “real effects” is sparse.
- Most empirical studies on disclosure have largely focused on “cost of capital” effects of new disclosure requirements or have examined whether correlations between accounting numbers and security returns are improved.
- But from a real effects perspective, it is insufficient and perhaps even misleading to do so…

Opportunities for Empirical Researchers

- Empirical studies that identify and quantify real effects therefore represent a unique opportunity for accounting research.

- Such studies should focus on very *specific* accounting measurements/disclosure issues and the *specific* corporate decisions that are predicted to change as a result of the change in measurement.

- Such studies will probably require the collection of novel data sets and the use of a variety of methodologies.

  - ➢ One such novel approach: use of field experiments.

Opportunities for Empirical Researchers

- Field Experiments are increasingly being used in economics (See Harrison and List (*JEL*, 2004)).
- One recent study that is noteworthy for accountants:
  - Duflo *et al* (*QJE*, 2013): Use a two year field experiment in the Indian state of Gujarat to study the impact of changing the incentives of auditors to report truthfully on the pollution levels of firms.
    - Status quo was largely corrupted.
    - Paying auditors from a central pool, random backchecks on auditors and a bonus in the second year for accurate reporting improved audit quality.
    - Treatment firms reduced their pollution emissions.

Conclusions

- The presence of real effects has far reaching implications for standard setting and for future accounting research:
  - Therefore, when we debate issues such as the desirability of alternative accounting rules, it is important to identify such “real effects.”
- While an empirical detection and quantification of those real effects is challenging, doing so provide a unique opportunity for accounting researchers:
  - Accounting researchers should invest in novel data sets and use new methodologies.