Increasing Transparency: What are the Economic Trade-offs?

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My Background…

Educational

• PhD from Minnesota, 2000.
• BBA and MS in Accounting from Houston.
• CPA, Texas.

Professional

• Professor at Chicago Booth since 2000.
• Staff Accountant at PWC. I lasted 9 months!

Personal Hobbies

• Marathons
Teaching Interests

• *MBA students*
  – Mergers and Acquisitions and Corporate Restructuring: Accounting and Tax Issues

• *PhD students*
  – PhD Seminar in Theoretical Accounting Research
Research Interests

• **Economic Consequences of Accounting Standards**
  
  – What are the costs and benefits of disclosure regulation? Do accounting standards have real effects?

  Examples: How does the use of fair value accounting affect the portfolios of financial institutions? Does fair value accounting have financial stability implications?

• **Corporate Governance**
  
  – What are the optimal features of external and internal corporate governance?

  Example: How does external and internal governance mechanisms affect insiders’ incentives to engage in long-term risky activities such as innovation?
Accounting as a Language: Strange, Complex, Incredibly Useful

Economic Reality

Accounting Lens: The Measurement Process

Financial Statements & Disclosures
Two Insights from my research

1. **Theory of the Second-Best:**
   - When there is more than one imperfection in an economy, removing one of them need not improve welfare.
   - In the presence of other imperfections (illiquidity, agency problems, etc.) fair value accounting need not be welfare improving.

2. **Information has strategic consequences:**
   - Firm is not a black box that operates independently of the measurement environment.
   - Measuring a firm's cash flows changes the very cash flows that one is seeking to measure.
Accounting Measurement Rules have Real Effects

- Real Sector (Firms, banks)
- Financial Sector (e.g., financial markets)
- Information Sector (e.g., Financial Statements, Analysts)

Feedback effect

Accounting Measurement Rules
Affects supply and demand of securities
Transparency may potentially be achieved in a variety of ways…..

1. Greater use of *Market prices or Market inputs* to value assets and liabilities on balance sheets.

2. Higher *Frequency* of Mandatory Disclosures.

3. Higher *Precision* of Mandatory Disclosures.
Increasing Transparency via the Frequency of Mandatory Financial Reporting

• Managers chooses between a short-term and a long-term project to maximize the path of expected stock prices, i.e.,

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

• Short-term project differs from the long term project as follows:

  ➢ Short term project generates higher stochastic cash flows in the early periods but lower stochastic cash flows in the future periods.

  ➢ But, long term project maximizes social welfare.
Increasing Transparency via the Frequency of Mandatory Financial Reporting

• In a first-best world, shareholder myopia, by itself, does not induce the manager to choose the short-term project! Why?
  – Because prices are forward looking, manager chooses the long term project.

• 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 short-term versus the long-term project.
Increasing Transparency via the Frequency of Mandatory Financial Reporting

• Given this second-best environment, should regulators increase the frequency of mandatory reporting?

  – While more frequent disclosure makes prices more efficient, it also induces the manager to choose the short-term project, which reduces economic efficiency.

  – Less information could provide better incentives by destroying information.

  – Information has strategic consequences and measuring the cash flows of a firm changes the very cash flows that are being measured!
Fair Value Accounting

- SFAS 157 establishes a three-level valuation hierarchy for the measurement of fair values:
  - Level 1 – inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
  - Level 2 – inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
  - Level 3 – inputs to the valuation methodology are unobservable and significant to the fair value measurement.
Case for Fair Value Accounting

• Market price reflects current terms of trade between willing parties

• Market price gives better indication of current risk profile
  – Market discipline
  – Informs investors, better allocation of resources

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

• Illiquid assets such as long term loans, corporate bonds, and structured derivative products:
  – Do not trade in deep and liquid markets
  – Trade in 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
What about volatility?

• If the fundamentals are volatile, then so be it.

• Market price is volatile…

• …but it simply reflects the volatility of the fundamentals
“Artificial” Volatility

• Dual role of market price
  – Reflection of fundamentals
  – Influences actions

• *Reliance* on market prices *distorts* market prices.
  – Endogenous Risk
Endogenous Risk

• Risk from shocks generated and amplified *within* the system

in contrast to...

Exogenous Risk

• Risk from shocks from *outside* the system
Endogenous Risk
Endogenous Risk....

If individual steps are independent events...

...then the probability is close to zero.
Endogenous Risk

Bridge moves \rightarrow Adjust stance

Further adjust stance \rightarrow Push bridge
Endogenous Risk

Bridge moves

Pedestrians adjust stance

Prices change

Banks adjust balance sheet
Liquidity Pricing

\[ P = \min \left( \frac{\gamma}{L}, \ E(\tilde{R}) \right) \]
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?
Historical Cost vs. MTM

• *Historical Cost Accounting: decisions not sensitive at all to market prices.*
  – Induces Gains Trading, e.g., Savings and Loans crises of the 1980s’ or Japanese Banking Crisis of the 1990s.

• *MTM Accounting: decisions too sensitive to market prices.*
  – Exacerbates Endogenous Risk and destabilizes financial markets. e.g., recent financial crisis…
Damage from Fair Value Accounting is Large when Asset is

- Illiquid
  - Stronger strategic effects lead to more pro-cyclicality
- Senior
  - limited upside, large downside (e.g. loans, insurance liabilities)
- Long-lived
  - Greater horizon mismatch
Consider a world where balance sheets are continuously marked to market. Price changes would show up immediately as changes in net worth.

– What are the reactions to changes in net worth?
– What are the aggregate consequences to such reactions?
Fair Value Accounting as an Amplification Mechanism

Targeting Constant Leverage

Initial balance sheet

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securities, 100</td>
<td>Equity, 10</td>
</tr>
<tr>
<td></td>
<td>Debt, 90</td>
</tr>
</tbody>
</table>

Assume price of debt approximately constant. Suppose the security price increases by 1% to 101.

<table>
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<th>Liabilities</th>
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</thead>
<tbody>
<tr>
<td>Securities, 101</td>
<td>Equity, 11</td>
</tr>
<tr>
<td></td>
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</table>
Leverage falls to

\[ \frac{101}{11} = 9.18 \]

If bank targets **constant leverage**, it must take on additional debt of \( D \) to purchase \( D \) worth of securities on the asset side so that

\[ \frac{\text{assets}}{\text{equity}} = \frac{101 + D}{11} = 10 \]

The solution is \( D = 9 \). In other words, the bank takes on additional debt worth 9, and with this money purchases securities worth 9.

**The demand curve is upward-sloping.**
The new balance sheet looks like this.

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Securities, 110</td>
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The leverage is now back up to 10.

The mechanism works in reverse, too. Suppose there is shock to the security price so that

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Leverage is too high \((109/10 = 10.9)\).
Sell securities worth 9, pay down debt of 9.

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Back to leverage of 10.

**Supply curve is downward-sloping.**

What is the aggregate impact of perverse demand and supply curves?
Fair Value Accounting as an Amplifier

Aggregate Impact

Target leverage

Stronger balance sheets
Increase B/S size
Asset price boom

Target leverage

Weaker balance sheets
Reduce B/S size
Asset price decline

If leverage is procyclical, then amplifying effect is that much larger.
Insights....

• Financial institutions actively manage balance sheets so as
  – to meet value at risk or economic capital targets
  – to meet performance measures such as return on equity (ROE).
  – to hit desired credit ratings
  – meet regulatory requirements

• And mark-to-market accounting ensures that any prices changes shows up immediately on the balance sheet...

• So when the bridge moves, banks adjust their stance more than they used to, and marking to market ensures that they all do it at the same time.
Insights…

• From a *transparency* perspective, the shift to a fair value regime is desirable in the long run.

• However, from a *financial stability* perspective, any actions that dampens financial cycles and mitigates pro-cyclicality are to be desired.

• Solutions?
  
  – Use a measurement regime that combines features of historical cost and fair value accounting.

  – Alter the way financial institutions react to short-run price changes.