June 10, 2015

Financial Engineering and the Arms Race between Accounting Standard Setters and Preparers

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Accounting and Finance Workshop

Universitat Pompeu Fabra

Barcelona, June 10, 2015

Yale SCHOOL OF MANAGEMENT

An Overview

- Important aspects are financial engineering are aimed at evading rules of financial regulation (incl. reporting)
- Many examples
- An **Impossibility Theorem**: inherent limitation of regulations/rule making relative to financial engineering
- What might be done?
  - Fix deficiencies of the conceptual framework
  - Revisit the drafting process
  - Introduce field testing of proposals
  - Abandon the futile rules vs. principles debate
  - Balance written rules/standards with social norms, culture and representational faithfulness
  - Introduce regulatory competition
  - Let us do our own thinking about functions of financial reporting (stop outsourcing it)

Financial Reporting vs. Engineering

- Financial regulation → cat-and-mouse game between rule makers and preparers
  - Eight decades: rules issued to "improve" reports (expansion from six paragraphs to about 30k pages)
  - Engineers redesign transactions to circumvent the intent of rule makers
- The mouse (of financial innovation) easily out-paces the regulatory cat(s) (BIS, FED, SEC, FASB, PCAOB, etc.)
  - E.g., attempts to put long-term leases on the balance sheet
- Theorem: Rule-makers cannot win this game
- How can they stay in the game and retain some self-esteem?

Lease Accounting

- CAP: ARB 38 (1949): reveal long term lease payments
- Accounting Research Study 4
- APB Opinions 5, 7, 27, 31
- SEC Accounting Series Releases 132, 141, 147
- FASB FAS 13 in 1976: 4 bright line criteria
- Intentions vs. consequences
- Redesign and a flood of responses
  - 25 more in six years, 43 in 37 yrs.

Table 1: Lease Accounting Standards

Year	Author	Doc	Title
1966	APB	APB Opinion 7	Accounting for Leases in Financial statements of Lessors
1972	APB	APB Opinion 27	Accounting for Lease Transactions by Manufacturer or Dealer Lessors
1973	SEC	ASR 132	Reporting of Leases in Financial Statements of Lessees
1973	SEC	ASR 141	Interpretations and Minor Amendments Applicable to Certain Revisions of Regulation S-X
1973	APB	APB Opinion 31	Disclosure of Lease Commitments by Lessees
1973	SEC	ASR 147	Notice of Adoption of Amendments to Regulation S-X Requiring Improved Disclosure of Leases
1974	FASB	DM	An Analysis of Issues Related to Accounting for Leases
1975	FASB	ED	Accounting for Leases
1976	FASB	ED (revised)	Accounting for Leases
1976	FASB	FAS 13	Accounting for Leases

1977	FASB	FASB Interpretation 19	Lessee Guarantee of the Residual Value of Leased Property
1978	FASB	FASB Interpretation 21	Accounting for Leases in a Business Combination
1978	FASB	FAS 22	Changes in the Provisions of Lease Agreements Resulting from Refundings of Tax-Exempt Debt
1978	FASB	FAS 23	Inception of the Lease
1978	FASB	FASB Interpretation 23	Leases of Certain Property Owned by a Government Unit or Authority
1978	FASB	FASB Interpretation 24	Leases Involving only a Part of a Building
1978	FASB	FASB Interpretation 26	Accounting for Purchase of a Leased Asset by the Lessee During the Term of the Lease
1978	FASB	FASB Interpretation 27	Accounting for a Loss on a Sublease
1979	FASB	FAS 26	Profit Recognition on Sales-Type Leases of Real Estate
1979	FASB	FAS 27	Classification of Renewals of Extensions of Existing Sales-Type or Direct Financing Leases
1979	FASB	FAS 28	Accounting for Sales with Leasebacks
1979	FASB	FAS 29	Determining Contingent Rentals
1979	FASB	Technical Bulletin 79-10	Fiscal Funding Clauses in Lease Agreements
1979	FASB	Technical Bulletin 79-11	Effects of a Penalty on the Terms of Lease
1979	FASB	Technical Bulletin 79-12	Interest Rate Used in Calculating the Present Value of Minimum Lease Payments
1979	FASB	Technical Bulletin 79-13	Applicability of FAS 13 to Current Value Financial Statements
1979	FASB	Technical Bulletin 79-14	Upward Adjustment of Guaranteed Residual Values
1979	FASB	Technical Bulletin 79-15	Accounting for Loss on a Sublease not Involving the Disposal of a Segment
1979	FASB	Technical Bulletin 79-16	Effect of a Reduction in Income Tax Rate on the Accounting for Leveraged Leases
1979		Technical Bulletin 79-17	Reporting Cumulative Effec t Adjustment from Retroactive Application of FAS 13
1979	FASB	Technical Bulletin 79-18	Transition Requirement of Certain FASB Amendments and Interpretations of FAS 13
1980	FASB	Technical Bulletin 79-16 (Revised)	Effect of a Change in Income Tax Rate on the Accounting for Leveraged Leases
1980	IASC	ED (E19)	Accounting for Leases
1982	IASC	IAS 17	Accounting for Leases

1982	IASC	IAS 17	Accounting for Leases
1997	IASC	ED (E56)	Leases
1997	IASC	IAS 17 (revised)	Leases
2003	IASB	IAS 17 (revised)	Leases
1996	G4+1	Special Report	Accounting for Leases: A New Approach
1999	G4+1	Special Report	Leases: Implementation of a New Approach
2005	FASB/IASB	Proposed FSP FAS 13-a	Accounting for a Change or Projected Change in the Timing of Cash Flows Relating to Income Taxes Generated by a Leveraged Lease Transaction
2009	FASB/IASB	Discussion Paper	Leases: Preliminary Views
2010	FASB/IASB	Proposed Standards Update	Proposed Accounting Standards Update—Leases (Topic 840)
2013	FASB/IASB	Proposed Standards Update	Leases (Topic 842): A Revision of the 2010 Proposed FASB Accounting Standards Update

Institutional Disadvantage

- 65-year long saga
- Unclear how many of the leases the regulators want capitalized are on the balance sheets today
- Do bright-line criteria help improve financial reporting? If not, what else?
- Institutional disadvantage of regulators
  - Engineers are faster
  - Unconstrained (due process, constituents)
  - Summers: World War II vs. the Convergence Project
- Can we continue to hope that the next standard from Basel, Norwalk/London can, or will, address the issue?

Negative Consequences of Faster Regulatory Response to FE

- Assuming regulatory responses could be speeded up, desirability is unclear
- Full employment for regulators and FEs
- Little opportunity for investors to learn FE tricks
- Preclude market-based responses to FE
- Increased adjustment costs
- Kydland and Prescott (1977): time consistency of regulation vs. stable regulation (e.g., IP)
- Christensen-Demski (2007): treat transactions as exogenous or equilibrium perspective on transaction design?
  - Consequences of control-based criteria for consolidation of SPEs on proliferation of SPEs

Advantage of Faster Regulatory Response

- Avoid loss of investor and courts' faith in standards
- Overall, optimal speed of regulatory response to transactions innovation is unclear

An Impossibility Theorem: Background

- Demski 1973:

  Accounting rules ≡ partition of the state space

  Blackwell: finer partition ➔ more informative partition

  Most partitions are non-comparable in fineness

  Therefore most information systems cannot be comparable in their informativeness, e.g., {(1,2), (3,4,5)} vs. {(1,2,3), (4,5)}

- No financial engineering considered in Demski's world

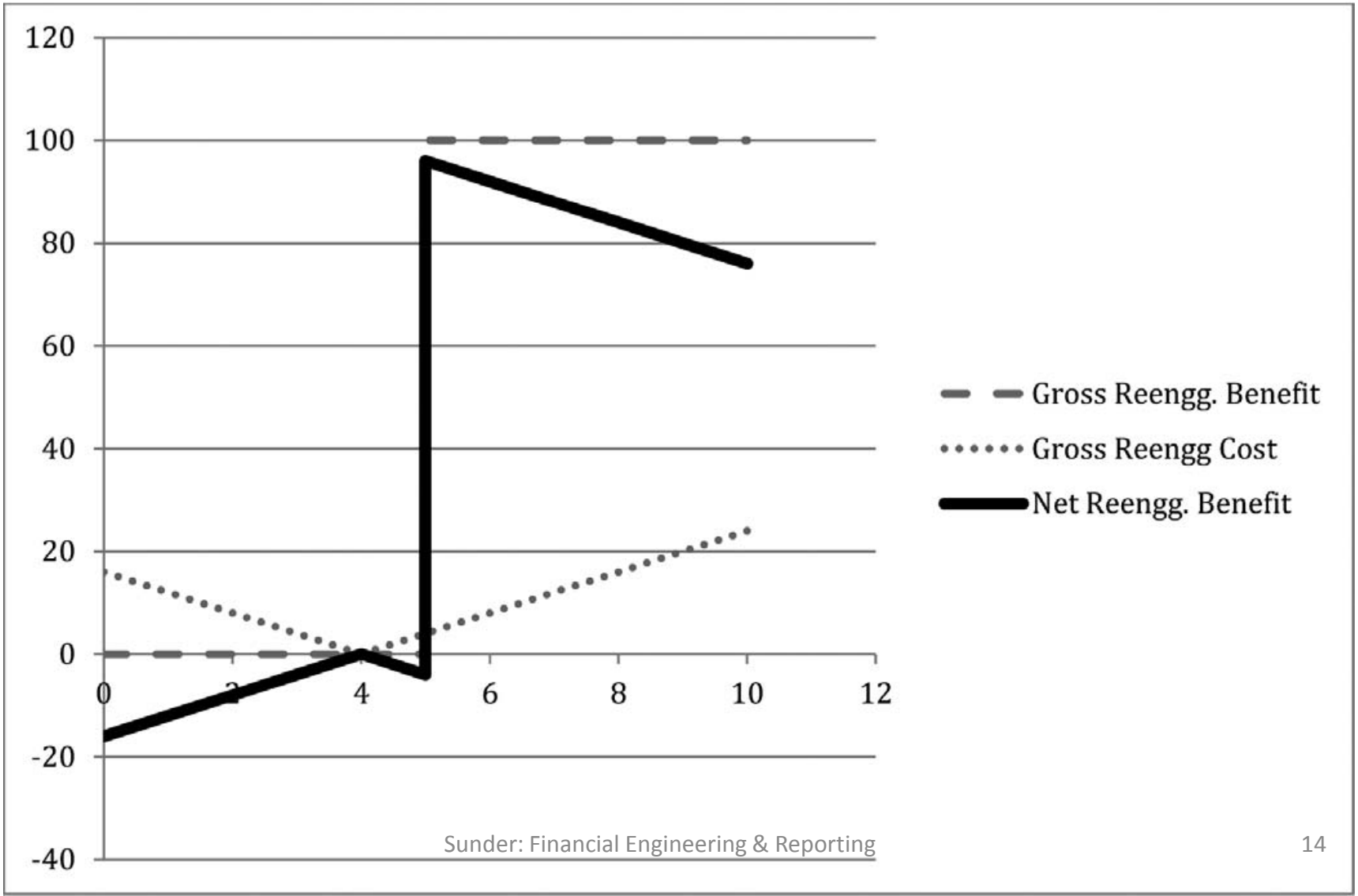
Seven Definitions

- A ***typical*** financial standard partitions the transaction attribute space into two or more parts and preparer is given a choice over how at least some specific transactions are classified
- Preparer's preferences over standards are ***reasonable*** if he has strict preference for one of permissible classifications of a given transaction
- A ***metric*** *d(.)* measures proximity (distance), or similarity (differentiation) between any pair of transactions
- A transaction is ***isolated*** if there is no other transaction within distance ε as measured by metric *d(.)*
- A set *S* of transactions is ***rich*** if there is no isolated transaction in *S*
- A transaction is ***financially engineered*** it is modified to change its classification within a given standard (partition)
- Cost of engineering is ***continuous*** in the distance *d* between the original and engineered form of the transaction

An Impossibility Theorem

- If preparers have reasonable preferences over typical standards, and the set of realized transactions is rich, then preparers will be motivated to financially engineer some of their transactions when the cost of financial engineering is continuous.

Figure 1: Schematic Chart of Costs and Benefits of Re-engineering a Transactions in a Classification System



Proof

- Any transaction has two or more potential classifications or treatments (typical)
- Transactions can be moved through the attribute space through reengineering
- Cost of reengineering is continuous in the distance moved
- There will always be some transactions sufficiently close to the partition boundaries (thresholds) so the cost of reengineering them to change their classification will be smaller than the prepare preference for reclassification (i.e., report contingent payoffs)
- Transactions being endogenous (chosen by man, not nature), no written rules can help regulators in this respect

Implications

- Smaller the cost of moving across attribute space, and larger the benefit of reclassification, greater will be the prevalence of financial engineering
- We should expect engineered transactions to be bunched up against any the bright line thresholds in the attribute space (Burgstahler and Dichev 1997)
- Standards may eliminate some FE, but not all
- This theorem does not yet consider adding new dimensions to attribute space, a favorite method of engineers
  - When regulators specify a partition on *n* dimensional attribute space, engineers simply add one or two extra dimensions by adding new attributes (e.g., contingent or minimum lease payments, bargain purchase option, etc.)
  - Is there a way for the regulators to anticipate these new dimensions?
- How do we assess standards? Not necessarily by the amount of FE they induce or permit; economic/social efficiency?
- Is some intermediate level of FE optimal? Dye 1988; Arya, Glover, Sunder 1998.

Problems of Standard Setting even without Financial Engineering

- Demski 1973: non-comparability by fineness problem
- Demski 1973: standards as public goods, Arrow's impossibility result
- Demski 1974: wealth redistribution and Pareto optimality
- Beaver-Demski 1979: defining income without perfect and complete markets
- Penno 2008: Sorites Paradox problem with defining classification boundaries (e.g., school uniforms)
- Weinberg 1992: Impossibility of complete definition of a transaction within finite dimensions
- Futility of comprehensively detailed standards, just broad guidelines (need room for discretion—arbitrariness?)

Fundamental Problems with Conceptual Framework

- Ignores preparers' adversarial view of standard setters
- Ignores auditability of application of standards
- Demotes representational faithfulness (supported by inattention of academic work); no trade-offs; maximize relevance subject to a representational faithfulness constraint.
- Do the details of standards matter; or will the security market take care of any problems? Brandeis/Coase perspective

Lessons from other Industries

- Klevorick (1973): slow adjustment of rates in public utilities encourages investment in innovation and efficiency improvements
  - Not applicable to accounting and FE
- Posner (2010): specific rules discard much information, and depreciate faster than broad ones

Roles of Other Institutions in FE and Standards

- High powered incentives of managers
- Disclosures and alternative information sources
- Sources of financing (banks vs. small shareholders)
- Complexity of transactions (endogenous?)
- Difficulty of auditing by rules; Enron and Barclays (PCAOB)
- Courts: not constrained by accounting standards
- Culture and academia: Cameron van der Berg: If you are not doing it, you are falling behind; business professors as guns for hire
  - Marcus Aurelius: be upright, not kept upright
  - Friedman: duty to increase profits within the rules of the game
  - Jensen and Meckling and stock options/executive compensation
  - Levitt 1998: change the norms of acceptable financial reporting

Resisting the Tide of Financial Engineering

- Clear rules/guidance vs. ambiguous or general principles: greater specificity facilitates financial engineering; ten or thousand commandments? "True and Fair" over ride
- Regulatory control over terms of transactions: seems infeasible in our legal system outside banks and other regulated industries
- Replace thresholds by "continuous" approach to accounting (but it requires subjective probabilities to calculated expectations)
- Greater field testing (prizes to college students)

Thinking about Financial Regulation

- Conservatism and matching are criticized rather than viewed as survivors of evolution we should study and learn from.
- Dominance of design over emergent perspective in accounting regulation, in spite of evidence to the contrary
- The Wheat Commission Report (1972) recommended involving academics in any conceptual framework. The FASB initially borrowed from the Trueblood Committee Report (1973) but has since developed the framework on its own.
- Academics can inflict much harm when appointed as regulators

The Reporting Culture: From "Compliance, Manipulation, & Everyone Else Does It" to "Communication and Integrity"

- How do we move from a compliance culture to a communication and integrity culture?
- Can be thought of as a multiple equilibria problem
- "If you're not doing it, you're falling behind," he said. "It's not obviously - shall we say - the moral thing to do, but I'm not willing to sacrifice my personal performance and four years of hard work for someone that is willing to do it and get away with it." Cameron van der Burgh, Gold Medal "winner" in the 100m breaststroke London Olympics
- "Whats the worst price I can put on this where the customers decision to trade with me or give me future business doesn't change. . . if you aint cheating, you aint trying." Barclays VP, Mark Odell in FT, May 20, 2015 on $5.7B fine for crimes of large banks, http://www.ft.com/intl/cms/s/0/eac637ae-fefb-11e4-84b2-00144feabdc0.html?siteedition=intl#axzz3aazuVFcA?ftcamp=crm/email/2015?ftcamp=crm/email/2015520/nbe/BreakingNews1/product_a2___a3__/nbe/BreakingNews1/product

An Example: Conservatism

- Dates back to at least 1906 (Littleton, 1941).
- Hatfield: "The accountant transcends the conservatism of the proverb, 'Don't count your chickens before they are hatched,' saying 'Here are a lot of chickens already safely hatched, but for the love of Mike use discretion and don't count them all, for perhaps some will die.'"
- Conservatism limits premature payouts/rewards by delaying the recognition of good news until uncertainty is resolved (Glover and Lin, 2013), which is a perspective that is not emphasized in the recent wave of theoretical papers on conservatism. Almost all of the existing models are of single-period settings.
- Conservatism offsets managerial opportunism (Gao, 2013).

Emergent Norms

- George O. May's evolutionary view of accounting standards, emerging from practice. Supplemented by ample disclosure.
- This was the approach followed by the Committee on Accounting Procedure (1939-1959), before the APB (1959-1973) and especially the FASB.
- Positive view of standard setting in the sense that standard setters look to practice to learn from and generalize in developing standards.
- Consistent with emergent norms, pruned by standard setters.
- Hayek's final work *Fatal Conceit*: Central planners are wrong because they disregard the fact that modern civilization naturally evolved and was not planned (*extended order*)
  - *Fatal Conceit*: We have enough understanding of social systems to design them to achieve specified objectives

Emergent Norms

- Arguably, the FASB's approach has been to come up with its own solutions to financial reporting problems rather than looking to practice for examples of good reporting.
- That is, we have Generally Imposed Accounting Principles, limiting the room for good norms to emerge from practice.
- To some extent, the FASB was created in 1973 because of the view that practice-based standards were too permissive and ad-hoc/not based on a conceptual framework.
- The formation of the FASB can be seen as the point at which standard setters and academics traded places in their normative vs. positive orientations. Are we the prince or the pauper?
- Accounting regulators appear to have this conceit in abundance

Bottom Line: Compensation

- Greater appreciation for:
  - Team incentives (less incentive pay?)
  - The limits of relative performance evaluation, including incentives to:
    - Increase risk using operating choices, capital structure, and derivatives.
    - Report aggressively
- Greater use of traditional accounting-based rewards over options, or at least performance-based vesting (of options and stock) that depends on absolute accounting performance.

Bottom Line: the Rule Makers

- Focus on the comparative advantage of accounting over other information sources, including judicious use of recognition thresholds, rather than trying to make accounting reflect the underlying economics of all events.
- Do less. Not view writing standards as a (largely) positive endeavor. Try to understand and learn from actual practices that seem to be robust (e.g., conservatism and matching).
- Announce a prize for the best approach to circumventing any proposed standard.
- Involve academics in any work on the conceptual framework, as the Wheat Committee suggested in 1972 (but be careful before giving them a vote).

Bottom Line: the SEC

- Greater recognition of the role of culture/norms and the interaction between culture, standard setting, and regulation.
- In general, seek a better understanding of interactions.
- Enforcement's wild-catting and OCA's pre-clearance process seem to be exemplary mechanisms for changing the culture. Is the current leadership of the SEC doing enough wild-catting?
- Target specific engineered transactions for disclosure. Consider more aggressive means of tying preparers and financial engineers (and auditors) together, including registering products and client lists with the SEC.
- Consider longer-term appointments for the Chief Accountant.
- Stop looking for corner solutions, for example, over-emphasizing nominal board independence (Corona, Glover, and Zheng, 2013).

Bottom Line: Academics

- Become more involved in normative research, particularly policy debates and policy-oriented research (including research that addresses counterfactuals).
- Correlation = causation is not it. Let us stop playing word games like "effect", "consequence", "impact", and "value relevant" when all we mean is statistical correlation
- Teach students more about asset pricing but also the limits of asset pricing models (e.g., perfect and complete markets, partial vs. general equilibrium, small individual investors vs. coordination on the same models).
- Teach incentive theory (e.g., adverse selection and moral hazard), i.e., don't make accountants rediscover Akerlof on their own.
- More research/teaching on team-based incentives and the pitfalls of relative performance evaluation.
- More attention to culture, social norms, and decentralized systems (as opposed to central planning)

Thank You!

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Also available on SSRN

Dye, Glover and Sunder. "Financial Engineering and the Arms Race between Accounting Standard Setters and Preparers," http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2508360

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