Empirical Studies of Financial Innovation: Lots of Talk, Little Action?

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"... the word revolution is entirely appropriate for describing the changes in financial institutions and instruments that have occurred in the past twenty years." Miller (1986, p. 437)

"Everybody talks about the weather, but nobody does anything about it." Mark Twain (attributed)

"Everybody talks about financial innovation, but (almost) nobody empirically tests hypotheses about it." Frame and White

SUMMARY

- Introduction
- Some background
- What motivates innovation?
- Potential empirical research questions
- Review of empirical studies
- Why so few?
- Conclusion

INTRODUCTION

- There is a broad descriptive literature that waxes rhapsodic about the importance of financial innovation, its breathtaking pace, and the reasons for it (e.g., Van Horne 1985; Miller 1986, 1992; Finnerty 1992; Merton 1992; etc., etc.)

- There is a surprising *dearth* of *empirical* studies of financial innovation that involve *testing hypotheses* or providing some kind of *quantitative analysis*
    - -- There is especially a dearth of studies that test hypotheses concerning the sources of financial innovation and the conditions that encourage it
    - -- Cohen and Levin's (1989) broad survey of innovation cited 251 books and articles; *none pertained to financial innovation*
    - -- Cohen's (1995) broad survey of innovation cited 357 books and articles; *none pertained to financial innovation*

- We could find only 27 studies! What do they tell us? Why so few?

SOME BACKGROUND

- What is financial innovation?
  - -- New products/services
  - -- New processes
  - -- New organizational forms

- Why is financial innovation important?
  - -- "...in the long run it is dynamic performance that counts." (Scherer and Ross 1990)
  - -- Finance is a central input for virtually all productive activity
  - -- Better finance can encourage more saving and investment
  - -- Better finance can encourage improved productivity of investment decisions

WHAT MOTIVATES INNOVATION?

- Profit-seeking enterprises/individuals searching for new and improved products, processes, and organizational structures
    - -- When successful, the result is innovation

- Streams of innovation are not uniform across enterprises/industries

- Hypotheses concerning the structural conditions that influence the rate of innovation
    - -- Market power (Schumpeter)
    - -- Size of enterprise (Schumpeter)
    - -- Technological opportunity
    - -- Appropriability
    - -- Product market demand conditions

- Hypotheses concerning the environmental conditions that influence "equilibrium" rates of *financial* innovation
    - -- Underlying technologies
    - -- Macroeconomic conditions
    - -- Regulation (legal environment)
    - -- Taxes
    - -- Other (appropriability? market power? firm size? network effects?)
    - -- Interactive effects

- *Changes* in environmental conditions can be expected to cause an initial wave or flurry of financial innovations

POTENTIAL EMPIRICAL RESEARCH QUESTIONS

- What are the environmental conditions that encourage financial innovation?

- Who are the customers for and users of innovation?
    - When does financial innovation originate outside the financial services sector rather than within it? Why?
    - Who are the adopters within the financial sector? What are their characteristics?
    - Who are the retail users of financial innovations? What are their characteristics?

- What about the diffusion of financial innovations?
    - Who are the early adopters? What are their characteristics?
    - What are the conditions that encourage rapid spread?

- What are the consequences?
    - What are the payoffs to innovators? To early adopters?
    - What are the social welfare consequences? Generally expected to be positive but could be negative
        - Sequences of slight improvements that supplant each other, where the sum of successive sunk investment costs exceeds the marginal cost reductions
        - Duplication of effort in patent races
        - Innovation related to rent-seeking distributional efforts
        - Financial innovations might increase volatility, might be mis-used (there's a defensive tone in some of the broad descriptive literature)

SUMMARY OF EMPIRICAL STUDIES

- Despite quite broad criteria, we could find only 27 studies
  - Environmental conditions: 2 studies
  - The customers for and users of innovations: 7 studies
  - Diffusion: 6 studies
  - Consequences: 12 studies

- Only 5 studies precede 1990

- Only 1 study covers patenting; 5 cover securities or underwriting; 21 cover banking

- Only one organizational innovation (the establishment of Section 20 subsidiaries by BHCs) is covered (by 4 studies); the remainder cover product/service or process innovations (or both)

WHY SO FEW?

- The absence of R&D and related data

- The absence of patents and patent counts

- The commonly used financial data yield no directly useful information about financial innovation
  - -- Bank call reports
  - -- CRSP data files
  - -- COMPUSTAT data files

- The relative absence of the IO (and Schumpeterian) tradition among researchers

CONCLUSION

- "One of the bedrocks of our financial system is financial innovation, the life blood of efficient and responsive capital markets" (Van Horne 1985)

- There is surely room for more empirical research

- Financial regulators could help by conducting and publishing more special surveys of new technology and innovations and making the raw data available to researchers

- The knowledge payoffs are likely to be large