Discussion of "Accounting Rules, Equity Valuation, and Growth Options" by D. Livdan and A. Nezlobin

Discussant: Dmitry Makarov, ICEF

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Overview

- Dynamic model of a firm making irreversible investments
- Novel features: stochastic depreciation and stochastic cost of new capital
- Solves analytically for the equity value and, in the process, for the investment policy
- Key question: how precisely the equity value is assessed under different accounting rules
- A model with reversible investments is also analyzed

Main results

- Barrier-type optimal investment policy with interesting implications for investors' learning
  - hitting the barrier provides valuable information to investors
- Three state variables: demand X_t, capital good price P_t, capital stock K_t
- But equity value is perfectly known if investors know *two* quantities: cash flows CF_t and replacement costs B_t^{rc}
- Speaks in favor of *replacement cost accounting*
- For other accounting rules, value bands are provided
- With reversible investments, replacement cost accounting is also the "best"
  - but relation between equity value and replacement costs is different

Summary

- Rich model, yet fully tractable – great!
- Two dimensions – firm behavior (finance) and disclosure rules (accounting) – each on its own is interesting and important
- Results are properly explained, intuition is clear

Comment 1: Intuition

- More details on the main intuition would be helpful
- Consider two triples of state variables, (X_t^1, P_t^1, K_t^1) and (X_t^2, P_t^2, K_t^2), leading to the same CF_t and B_t^{rc}
- Explain why the firm value is the same despite state variables being different
- Example: suppose you get the same firm value if $X_t^1 = X_t^2$, $P_t^1 > P_t^2$, $K_t^1 < L_t^2$. Why?

Comment 2: Discount rates

- The firm value is its future cash flows discounted at the discount rate r
- Firm manager and outside investors have different information, can their discount rates also differ?
- If yes, whose discount rate is used to compute the firm value?
  - Manager: do investors care about the firm value relying on not-their-own rate?
  - Investor: different accounting rules imply different investors' discount rate?
- Under risk-neutrality all of these may not be relevant, but under risk aversion?

Comment 3: Quality of accounting rules

- Paper examines the sizes of value intervals
- Does narrower interval imply a better accounting rule?
- If information is not enough, investors can consider bounds, OR....
- Start with priors about unknowns, update it based on what is observe, estimate the firm value
- Quality of an accounting rule: $E[(\hat{V} - V^{true})^2]$. Is it related to interval width in the paper?

Minor points

- Three state variables differ in “observability”: capital stock K hard to observe; capital good price P? demand parameter X_t?
- What happens if one of them is observable?
- NPV of marginal project is positive: where is it shown?