Non-Executive Stock Options and Firm Performance

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Discussion by
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Results

- IRRC Dilution Database
  - Total options outstanding, 1997-2004
  - Project # for non-executive employees
  - Relation with t+1 performance using IV

- Results
  - Total Options
    - OLS, mostly insignificant (unreported)
    - IV close to or equal to 5% significance, small or high M/B firms
  - Broad based plan
    - OLS and IV: +ve and significant
Overall comments

☐ Good start. Perhaps not quite the finished article yet.

☐ Comments.
  - Given the borderline significance, paper should be more persuasive. I have a few suggestions.
  - Structural changes over the time period
  - Stand on the underlying economics
    ☐ Why do all firms not adopt?
    ☐ The current move away from options?
    ☐ Comments on “pay without performance?”
Data

- Bergman and Jenter (2005) have a similar dataset for 1,000 firms from 1994 to 2000.

- Mechanical changes due to M&A, splits, etc. What about reload options? How searched for and how cleaned up?
Data

- Definitions.
  - For example, \( \text{data13} \div \text{data6}_{t-1} \) is clearer than “operating return on assets before depreciation.”
  - CFA. What is it in COMPUSTAT terms and what major studies use it? changes in the variables?
  - Time series changes in performance?

- Not sure what to make of “% change” in ROA or CFA.
  - Why is 4% versus industry of 2% “better” than 12% versus industry of 10%?
  - Outlier problems with % difference measure.
  - Statistical properties? Bootstrapping results?

- Four “y” variable GMM?
  - \( \Delta \text{ROA}, \%\Delta \text{ROA}, \Delta \text{CFA}, \%\Delta \text{CFA}, ? \)
  - At a minimum, show \( \Delta \text{ROA} \), the standard, alone. Perhaps footnote the rest as robustness.
Instruments

- OLS is generally insignificant but IV is significant. IV is critical, so give a more full economic arguments for instruments. (For instance, discuss geography of HQ versus plant.)

- In main model, log # employees is the boss
  - Industry turnover, $R^2 = 0.2\%, t = 1.1$
  - log (# employees) $R^2 = 3.43\%, t = 5.1$
  - log (masters degree) $R^2 = 0.6\%, t = 4.0$
  - All: $R^2 = 4.2\%$

- Is the IV result picking up correlated unobservables?
  - Is industry-adjusted performance metric predictable by # employees or geography in ways not captured by Table 2?
  - Perhaps use different performance measures that account for above biases and show robustness.
  - More general and full discussion of this issue.
Structural changes

- 1997-2004 covers the dot com crash and the Sarbanes Oxley Act. There could be structural changes in:
  - The usage of options
  - The cost and motivational effectiveness of options. For example, if sentiments affect value (Bergman and Jenter), options may be less effective after dot com crash.
  - Monitoring (mutual or otherwise).
  - Individual cross-sectional results should probably be reported.
Specification

- Time series correlation in options outstanding and granted.
  - If $\text{options}_t = f(\text{options}_{t-1})$, there is a lagged dependent variable issue in the instrument generating regression.

- Extra variables of interest
  - Cash constraints as motive for options
  - Behavioral variables: sentiments $\Rightarrow$ options $\Rightarrow$ performance? Likely to matter given focus on lower ranked employees.
  - The paper says it is not a complete theory of option granting behavior, so only thing that matters is the orthogonality of instruments. True.
    - But this seems to be an argument for not worrying about obscure variables that are excluded but that might matter.
    - It seems weird to use the argument to exclude standard and well known predictors of option grants.
Specification: Black-Scholes

- Employees versus executives
  - Black-Scholes valuation.
    - Employees, undiversified, risk-averse, and subject to excessive extrapolation biases? Makes B-S model incorrect.

- Employees exercise early. Carpenter (1998), Bettis, Bizjak, and Lemmon (2006), and so on. Also makes B-S model incorrect.

- You could use alternative models of subjective value by Meulbroek (2001), Hall and Murphy (2000), Ingersoll (2006). I am not sure whether the incentive variables should be recalculated or not using these but the alternative models should at least be noted.
Residual issues

- Study Q as dependent variable?
  - You say market captures effect of stock options, so you study performance instead. OK, but
  - Does it? I am not sure the question is settled. In fact, the popularity of options may reflect non-recognition of its costs.
  - Which effect dominates, dilution or incentive?

- For better or worse, Q studies are now pretty routine. The results should be included and would complement the operating performance study nicely.

- It is also important to do because improved performance you find has less value if the improvement is all captured by stock options.

- Restricted Stock Grants
  - Theory cited here. No difference as far as I can see
  - Data Issues. Do these show up in dilution measures?
Residual issues

- Restricted Stock Grants
  - Theory cited here goes through whether you have stock grants or option grants. No difference as far as I can see. So why study options alone?
  - Data Issues. Do restricted stock grants show up in dilution measures? If not (probably the case), then they need to be filtered out in some way in the empirical analysis.

- The targeted versus general option program results appear to be interesting and quite strong whether you use IV or OLS. But they are under-explained and also (rather oddly) undersold.
Conclusion

- Nice start and some interesting and pretty compelling results.

- Some distance to finish line. Mostly in the direction of making the paper more persuasive for potentially skeptical referees.