Contemporary Accounting Research / Volume 26, Issue 3 / pp. 899-932

Do Managers Value Stock Options and Restricted Stock Consistent with Economic Theory?*

Frank D. Hodge, Shiva Rajgopal, Terry Shevlin

First published: 18 January 2010
https://doi.org/10.1506/car.26.3.11
Citations: 38

* Accepted by Michel Magnan. We acknowledge helpful comments from Michel Magnan (editor), Bob Bowen, Mark Bradshaw, Dave Burgstahler, Steve Huddart, Chris Ittner, Avi and Israela Kamara, Yuping Jia, Jim Jiambalvo, Jane Kennedy, Susan Krische, Mark Lang, Dawn Matsumoto, Steve Matsunaga, Maarten Pronk, Ed Rice, Lisa Sedor, D. Shores, Lan Shi, Arnie Wright, two anonymous reviewers, and workshop participants at Pennsylvania State University, Tilburg University Spring Camp, University of Melbourne, and the University of Washington. We thank Bob Bowen, Emer Dooley, Crystal Eney, Jim Jiambalvo, Jane Kennedy, and Avi and Israela Kamara for their help in recruiting participants for our field study and interviews. We are grateful to the executives and managers who participated in this project. Frank Hodge acknowledges the support of the Lane A. Daley Fellowship, Shiva Rajgopal acknowledges the support of the Herbert Whitten Professorship, and Terry Shevlin acknowledges the support of the Paul Pigott-PAC-CAR Professorship.

Do Managers Value Stock Options and Restricted Stock Consistent with Economic Theory?*

FRANK D. HODGE, *University of Washington Foster School of Business*

SHIVA RAJGOPAL, *University of Washington Foster School of Business*

TERRY SHEVLIN, *University of Washington Foster School of Business*

1. Introduction

We investigate whether current mid-level and future entry-level managers subjectively value stock options and restricted stock consistent with economic theory. We also investigate whether managers' subjective valuations are sensitive to changes in key characteristics of these equity instruments. We believe our investigation is important for three reasons. First, in recent years firms have granted the vast majority of options to employees who are not senior-level executives (Jensen, Murphy, and Wruck 2005).[1] Indirect anecdotal evidence suggests that these employees are less likely than senior-level executives to understand how stock options work.[2] Second, a fundamental premise underlying the traditional economics-based literature on stock options is that employees understand how to value them. If this premise does not hold, the efficacy of stock options as an incentive mechanism, and the findings from the literature relying on this premise, are called into question. Third, in 2005 the Financial Accounting Standards Board (FASB) began requiring firms to recognize the fair value of stock options on the income statement. Since that time, many firms have considered cutting broad-based stock option plans or switching from broad-based option plans to restricted stock plans (Deloitte 2005). If employees perceive the relative value of stock options and restricted stock differently than firms do, switching from stock options to restricted stock could create ill will, increase employee turnover, and dilute the incentive effects of issuing equity compensation.

* Accepted by Michel Magnan. We acknowledge helpful comments from Michel Magnan (editor), Bob Bowen, Mark Bradshaw, Dave Burgstahler, Steve Huddart, Chris Ittner, Avi and Israela Kamara, Yuping Jia, Jim Jiambalvo, Jane Kennedy, Susan Krische, Mark Lang, Dawn Matsumoto, Steve Matsunaga, Maarten Pronk, Ed Rice, Lisa Sedor, D. Shores, Lan Shi, Arnie Wright, two anonymous reviewers, and workshop participants at Pennsylvania State University, Tilburg University Spring Camp, University of Melbourne, and the University of Washington. We thank Bob Bowen, Emer Dooley, Crystal Eney, Jim Jiambalvo, Jane Kennedy, and Avi and Israela Kamara for their help in recruiting participants for our field study and interviews. We are grateful to the executives and managers who participated in this project. Frank Hodge acknowledges the support of the Lane A. Daley Fellowship, Shiva Rajgopal acknowledges the support of the Herbert Whitten Professorship, and Terry Shevlin acknowledges the support of the Paul Pigott-PACCAR Professorship.

Contemporary Accounting Research Vol. 26 No. 3 (Fall 2009) pp. 899–932 © CAAA
doi:10.1506/car.26.3.11

References

Ainslie, G., and N. Haslam. 1992. Hyperbolic discounting. In *Choice over Time*, eds. G. Lowenstein and J. Elster, 57–92. New York: Russel Sage Foundation.

Google Scholar

Arya, A., and B. Mittendorf. 2005. Offering stock options to gauge managerial talent. *Journal of Accounting and Economics* **40**: 189–210.

Web of Science® | Google Scholar

Barber, B., and T. Odean. 2001. Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics* **116** (1): 261–92.

Web of Science® | Google Scholar

Benartzi, S. 2001. Excessive extrapolation and the allocation of company stock to retirement accounts. *Journal of Finance* **56** (5): 1747–64.

Web of Science® | Google Scholar

Bergman, N., and D. Jenter. 2007. Employee sentiment and stock option compensation. *Journal of Financial Economics* **84** (3): 667–712.

Web of Science® | Google Scholar

Bettis, J., J. Bizjak, and M. Lemmon. 2005. Exercise behavior, valuation, and the incentive effects of employee stock options. *Journal of Financial Economics* **76** (2): 445–70.

Web of Science® | Google Scholar

Brav, A., J. Graham, C. Harvey, and R. Michaely. 2005. Payout policy in the 21st century. *Journal of Financial Economics* **77** (3): 483–527.

Web of Science® | Google Scholar

Choi, J., D. Laibson, B. Madrian, and A. Metrick. 2004. Employees' investment decisions about company stock. NBER paper no. 10228.

Google Scholar

Core, J., and W. Guay. 2001. Stock option plans for non-executive employees. *Journal of Financial Economics* **61** (2): 253–87.

Web of Science® | Google Scholar

De Bondt, W. 1993. Betting on trends: Intuitive forecasts of financial risk and return. *International Journal of Forecasting* **9** (3): 355–71.

Web of Science® | Google Scholar

Deloitte. 2005. *Options take a hit, but what will take their place?* The 2005 Deloitte Stock Compensation Survey. New York: Deloitte Development LLC.

Google Scholar

Devers, C., R. Wiseman, and R. Holmes. 2007. The effects of endowment and loss aversion in managerial stock option valuation. *Academy of Management Journal* **50** (1): 191–208.

Web of Science® | Google Scholar

Farrell, A., S. Krische, and K. Sedatole. 2008. *Employees' subjective valuations of their stock options: Evidence on the use of heuristics*. Working paper, University of Illinois and Michigan State University.

Google Scholar

Fidelity Investments. 2003. *Maximizing employee stock option plans*. Boston: Fidelity Investments.

Google Scholar

Gebhardt, W., C. M. C. Lee, and B. Swaminathan. 2001. Toward an implied cost of capital. *Journal of Accounting Research* **39** (1): 135–76.

Web of Science® | Google Scholar

Goldstein, D., E. Johnson, and W. Sharpe. 2006. *Measuring consumer risk-return tradeoffs*. Working paper, London Business School, Columbia University, and Stanford University.

Google Scholar

Golec, J., and M. Tamarkin. 1998. Betters love skewness, not risk, at the horse track. *Journal of Political Economy* **106** (1): 205–25.

Web of Science® | Google Scholar

Graham, J., C. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* **40**: 3–73.

Web of Science® | Google Scholar

Hall, B., and K. Murphy. 2002. Stock options for undiversified executives. *Journal of Accounting and Economics* **33**: 3–42.

Web of Science® | Google Scholar

Heath, C., S. Huddart, and M. Lang. 1999. Psychological factors and stock option exercise. *Quarterly Journal of Economics* **114** (2): 601–28.

Web of Science® | Google Scholar

Heisler, J. 1994. Loss aversion in a futures market: An empirical test. *Review of Futures Markets* **13**: 793–822.

Google Scholar

Hemmer, T., S. Matsunaga, and T. Shevlin. 1994. Estimating the "fair value" of employee stock options with expected early exercise. *Accounting Horizons* **8** (4): 23–42.

Google Scholar

Hitt, M., M. Dacin, E. Levitas, J. Edhec, and A. Borza. 2000. Partner selection in emerging and developed market contexts: Resource-based and organizational learning perspectives. *Academy of Management Journal* **43** (3): 449–67.

Web of Science® | Google Scholar

Hodder, L., W. Mayew, M. McAnally, and C. Weaver. 2006. Employee stock option fairvalue estimates: Do managerial discretion and incentives explain accuracy?. *Contemporary Accounting Research* **23** (4): 933–75.

Web of Science® | Google Scholar

Huddart, S., and M. Lang. 1996. Employee stock option exercises: An empirical analysis. *Journal of Accounting and Economics* **21**: 5–43.

Web of Science® | Google Scholar

Ingersoll, J. 2006. The subjective and objective evaluation of incentive stock options. *Journal of Business* **79** (2): 453–87.

Web of Science® | Google Scholar

Jensen, N., K. Murphy, and E. Wruck. 2005. *Remuneration: Where we've been, how we got to here, what are the problems, and how to fix them*. Working paper, Harvard Business School.

Google Scholar

Johnston, D. 2006. Managing stock option expense: The manipulation of option-pricing model assumptions. *Contemporary Accounting Research* **23** (2): 395–425.

Web of Science® | Google Scholar

Kahl, M., J. Liu, and F. Longstaff. 2002. Paper millionaires: How valuable is stock to a stockholder who is restricted from selling it? Working paper, National Bureau of Economic Research.

Google Scholar

Kahneman, D., and A. Tversky. 1979. Prospect theory: An analysis of decision under risk. *Econometrica* **47** (2): 263–91.

Web of Science® Google Scholar

Karolyi, A. 2001. *Why stock return volatility really matters*. Working paper, Ohio State University.

Google Scholar

Kedia, S., and Mozumdar, A. 2002. *Performance impact of employee stock options*. Working paper, Harvard University.

Google Scholar

Kim, D. C. 1992. Risk preferences in participative budgeting. *The Accounting Review* **67** (2): 303–18.

Web of Science® Google Scholar

Klassen, K., and A. Mawani. 2000. The impact of financial and tax reporting incentives on option grants to Canadian CEOs. *Contemporary Accounting Research* **17** (2): 227–62.

Google Scholar

Kloss, A., E. Weber, and M. Weber. 2005. Investment decisions and time horizons: Risk perception and risk behavior in repeated gambles. *Management Science* **51** (12): 1777–90.

Web of Science® Google Scholar

Korniotis, G., and A. Kumar. 2007. *Does investment skill decline due to cognitive aging or improve with experience?* Working paper, University of Texas at Austin.

Google Scholar

Lambert, R., D. Larcker, and R. Verrecchia. 1991. Portfolio considerations in valuing executive compensation. *Journal of Accounting Research* **29** (1): 129–49.

Web of Science® Google Scholar

Liang, N., and S. Weisbenner. 2002. *Investor behavior and the purchase of company stock in 401(k) plans â€˝ The importance of plan design*. Working paper, University of Illinois at Urbana Champaign.

Google Scholar

Longstaff, F. 1995. How much can marketability affect security values?. *The Journal of Finance* **50** (5): 1767–74.

Web of Science® | Google Scholar

Longstaff, F. 2001. Optimal portfolio choice and the valuation of illiquid securities. *Review of Financial Studies* **14** (2): 407–31.

Web of Science® | Google Scholar

Magnan, M., and S. St-Onge. 2005. The impact of profit sharing on the performance of financial services firms. *Journal of Management Studies* **42** (4): 761–91.

Web of Science® | Google Scholar

March, J., and Z. Shapira. 1987. Managerial perspectives on risk and risk taking. *Management Science* **33** (11): 1404–18.

Web of Science® | Google Scholar

Meulbroek, L. 2001. The efficiency of equity-linked compensation: Understanding the full cost of awarding executive stock options. *Financial Management* **30** (2): 5–30.

Web of Science® | Google Scholar

Nofsinger, J. 2008. *The psychology of investing*, 3rd ed. Upper Saddle River, NJ: Pearson Prentice Hall.

Web of Science® | Google Scholar

Olsen, R. 1997. Investment risk: The experts' perspective. *Financial Analysts' Journal* **53** (2): 62–6.

Google Scholar

Oyer, P., and S. Schaefer. 2005. Why do some firms give stock options to all employees? An empirical examination of alternative theories. *Journal of Financial Economics* **76** (1): 99–133.

Web of Science® | Google Scholar

Pratt, S. 1989. *Valuing a business.* Homewood, IL: Irwin.

Google Scholar

Sanders, W. 2001. Behavioral responses of CEOs to stock ownership and stock option pay. *Academy of Management Journal* **44** (3): 477–92.

Web of Science® | Google Scholar

St-Onge, S., M. Magnan, L. Thorne, and S. Raymond. 2001. The effectiveness of stock option plans: A field investigation of senior executives. *Journal of Management Inquiry* **10** (3): 250–66.

Web of Science® | Google Scholar

Slovic, P., and S. Lichtenstein. 1971. Comparison of Bayesian and regression approaches to the study of information processing in judgment. *Organizational Behavior and Human Performance* **6** (6): 649–744.

Web of Science® | Google Scholar

Taylor, S., and J. Brown. 1988. Illusion of well-being: A social psychological perspective on mental health. *Psychological Bulletin* **103** (2): 193–210.

CAS | PubMed | Web of Science® | Google Scholar

Tversky, A., and D. Kahneman. 1974. Judgment under uncertainty: Heuristics and biases. *Science* **185** (4157): 1124–30.

CAS | PubMed | Web of Science® | Google Scholar

Weinstein, N. 1980. Unrealistic optimism about future life events. *Journal of Personality and Social Psychology* **39** (5): 806–20.

Web of Science® | Google Scholar

Weinstein, N. 1987. Unrealistic optimism about illness susceptibility: Conclusions from a community-wide sample. *Journal of Behavioral Medicine* **10** (5): 481–500.

CAS | PubMed | Web of Science® | Google Scholar

Yates, F., and E. Stone. 1992. The risk construct. In *Risk-Taking Behavior*, ed. F. Yates, 1–25. New York: John Wiley & Sons.

Web of Science® | Google Scholar

Citing Literature