Available online at www.sciencedirect.com
SCIENCE DIRECT®
Journal of Banking & Finance 30 (2006) 915–945
Journal of BANKING & FINANCE Applied Section
www.elsevier.com/locate/jbf

Does stock option-based executive compensation induce risk-taking? An analysis of the banking industry

Carl R. Chen [a,*], Thomas L. Steiner [b], Ann Marie Whyte [c]

[a] *Department of Economics and Finance, University of Dayton, Dayton, OH 45469-2251, United States*
[b] *Steiner Consulting Group, Dayton, OH, United States*
[c] *University of Central Florida, Orlando, FL 32816-1400, United States*

Received 7 October 2003; accepted 9 June 2005
Available online 7 December 2005

Abstract

We investigate the relation between option-based executive compensation and market measures of risk for a sample of commercial banks during the period of 1992–2000. We show that following deregulation, banks have increasingly employed stock option-based compensation. As a result, the structure of executive compensation induces risk-taking, and the stock of option-based wealth also induces risk-taking. The results are robust across alternative risk measures, statistical methodologies, and model specifications. Overall, our results support a management risk-taking hypothesis over a managerial risk aversion hypothesis. Our results have important implications for regulators in monitoring the risk levels of banks.

JEL classification: G21; J33

Keywords: Risk-taking; Executive compensation; Banking industry

* Corresponding author. Tel.: +1 937 229 2418; fax: +1 937 229 2477.
E-mail address: chen@udayton.edu (C.R. Chen).

0378-4266/$ - see front matter
doi:10.1016/j.jbankfin.2005.06.004

1. Introduction

The issue of risk-taking has been a central focus of the banking literature. While banks must operate within the constraints imposed by regulators, they have discretion in making decisions that can have a significant impact on the riskiness of the institution. One area in which banks exercise discretion is in their choice of executive compensation levels and structures. The compensation level and structure employed by each bank has implications for risk-taking and for the agency relation between managers and stockholders. John et al. (1995) note that managerial compensation affects the investment choices made by the firm, and the effects of these choices are magnified when moral hazard and managerial discretion are present. Thus, both regulators and stockholders have an interest in monitoring the executive compensation that is in place in the banking industry.

This paper examines the relation between risk-taking and option-based executive compensation in the banking industry. The issue of risk-taking and executive compensation has been previously studied for industrial firms by a number of researchers.[1] For example, Agrawal and Mandelker (1987) find that large stock and option holdings by a manager induce him/her to select variance-increasing investments. DeFusco et al. (1990) report that both implied volatility and stock return variance increase after the approval of executive stock option plans. The results for industrial firms, however, cannot necessarily be generalized to the banking industry for several reasons.

First, Houston and James (1995) find that the compensation structure in the banking industry differs significantly from the structure in other industries, both in terms of total compensation and in terms of the relative importance of the individual elements that comprise total compensation. Second, evidence presented by Smith and Watts (1992) and Mayers and Smith (1992) suggests that compensation is less responsive to firm performance in regulated industries than in unregulated industries. Since banks operate in a different business and regulatory environment than their nonbank counterparts, this may alter the incentives created by the compensation contract.

An impressive body of research examining executive compensation and performance has been formed in the banking literature.[2] However, few studies on the banking industry examine the relation between executive compensation and firm risk-taking. One such study by Houston and James (1995) reports that bank chief executive officers (CEOs) receive less cash compensation, are less likely to participate in stock option plans, and receive a smaller percentage of their total compensation in the form of stock options than do their counterparts in other industries. They conclude that the compensation structure in the banking industry does not promote risk-taking. However, their inquiry focuses on comparing the compensation structure of banks to the compensation structure of industrial firms rather than analyzing the impact of compensation on risk across banks.

More recently, John et al. (2000) make theoretical arguments highlighting the continuing viability and importance of an empirical investigation into the relation between exec-

[1] While our focus is the relation between risk-taking and executive compensation, a large number of studies have investigated the relation between compensation and performance. Studies in the non-banking sector include Jensen and Murphy (1990a,b), Mehran (1995), Coughlan and Schmidt (1985), Lewellen et al. (1987), Agrawal et al. (1991), Goldberg and Idson (1995), Aggarwal and Samwick (1999), and Core et al. (1999).

[2] The banking studies include Barro and Barro (1990), Crawford et al. (1995), Hubbard and Palia (1995), Collins et al. (1995), Houston and James (1995), Fields and Fraser (1999), and John et al. (2000).