



Some unpleasant general equilibrium implications of executive incentive compensation contracts [☆]

John B. Donaldson ^{a,1}, Natalia Gershun ^{b,2}, Marc P. Giannoni ^{c,d,*}

^a Columbia University, United States

^b Pace University, United States

^c FRB New York, United States

^d CEPR, United Kingdom

Received 7 June 2009; final version received 20 December 2011; accepted 1 January 2012

Available online 26 October 2012

Abstract

We consider a simple real business cycle model in which shareholders hire self-interested executives to manage their firm. A generic family of compensation contracts similar to those employed in practice is studied. When compensation is convex in the firm's dividend, an increase in the firm's output results in a more than proportional increase in the managers' income. Incentive contracts of sufficient yet modest convexity are shown to result in an indeterminate general equilibrium, one in which business cycles are driven by self-fulfilling fluctuations in managers' expectations. The proposed family of contracts may yield first-best outcomes for specific parameter choices.

© 2012 Elsevier Inc. All rights reserved.

JEL classification: E32; J33

Keywords: Delegation; Executive compensation; Indeterminacy and instability

[☆] We thank the editor, Christian Hellwig, an associate editor and an anonymous referee for very helpful comments and suggestions. The views expressed herein are solely those of the authors and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System.

* Corresponding author at: Federal Reserve Bank of New York, Research and Statistics Group, 33 Liberty Street, New York, NY 10045-0001, United States. Fax: +1 212 720 1844. Research Officer.

E-mail addresses: jd34@columbia.edu (J.B. Donaldson), ngershun@pace.edu (N. Gershun), marc.giannoni@ny.frb.org (M.P. Giannoni).

¹ Mario J. Gabelli Professor of Finance, Columbia Business School, Uris Hall, 3022 Broadway, New York, NY 10027, United States.

² Associate Professor of Finance, Lubin School of Business, 1 Pace Plaza, New York, NY 10038, United States.

1. Introduction

Executive compensation in public companies typically is provided in the form of three components, a cash salary (the wage and pension contributions), a bonus related to the firm's short term operating profit, and stock options (or other related forms of compensation based on the firm's share price). In seeking to create stronger links between pay and performance, the use of stock options, in particular, has emerged as the single largest ingredient of U.S. executive compensation. According to Hall and Murphy [15], "in fiscal 1999, 94% of S&P 500 companies granted options to their top executives. Moreover, the grant-date value of stock options accounted for 47% of total pay for S&P 500 CEOs in 1999." CEOs of the largest U.S. companies frequently receive annual stock option awards that are on average larger than their salaries and bonuses combined.^{3,4} Frydman and Jenter [12] report that for the period 2000–2005, options and other long term incentive pay averaged 60% of total executive compensation; in 2008 the salary component had fallen to only 17% of average total pay.

Executive options contracts represent a particular instance of a highly non-linear convex style contract.⁵ In this paper we demonstrate that convex executive pay practices, within the context of the separation of ownership and control in the modern corporation, may have dramatic, adverse business cycle consequences. In particular, we show that convex compensation contracts may give rise to generic sunspot equilibria in otherwise standard dynamic stochastic general equilibrium models. Sunspot equilibria (indeterminacy) formalize the notion that expectations not grounded in fundamentals may lead to behavior by which they are fulfilled. These equilibria may involve arbitrarily large fluctuations in macroeconomic variables even though production is characterized by constant returns to scale at the social as well as private level. As such, convex managerial compensation contracts provide an entirely new mechanism by which indeterminacy may arise in real (non-monetary) economies. An even more disturbing observation is that convex contracts may lead, under certain parameter configurations, to non-stationary behavior. Practically speaking this means that convex contracts may induce the self-interested manager to adopt investment policies that drive his firm's equilibrium capital stock to zero.⁶

³ See also Jensen and Murphy [18]; also, Shleifer and Vishny [28] and Murphy [24].

⁴ In the past few years, restricted stock grants have begun to supplant strict call options as the largest category of executive compensation. Restricted stock grants are awards of stock to managers that cannot be sold until the end of a prespecified vesting period and/or until certain performance goals are met. The purchase price of the stock is preset at the grant date, and the executive typically receives the difference between the purchase price and the sale price of the stock at the conclusion of the vesting period. At the level of abstraction of this paper, such grants are nothing more than long term options with a time to maturity equal to the required vesting period. In actual practice, however, the executive incurs no tax liability in the vesting period (until he cashes out) whereas the value of options grants are immediately taxable as ordinary income at the initial grant date. Such favored tax treatment encourages the use of stock grants over pure options.

⁵ To clarify the sense of an options contract being convex, consider a single call option with a payoff at expiration of $c_T = \max\{0, q_T^e - E\}$ where T is the expiration date, q_T^e is the price of the underlying stock at expiration, and E is the exercise price. The payoff is piecewise linear and convex in the sense that if $q_T^e \leq E$, $c_T = 0$, and if $q_T^e > E$, $c_T = (q_T^e - E)$, the latter being representable as a line with unit slope over its region of definition.

A portfolio of N call options would have a diagonal payoff line that is much steeper (the slope would, in fact, be " N "). In this sense the payoff to N options is "more convex" than the payoff to one option: increases in q_T^e above E have a much greater monetary benefit to the owner of the calls. When a CEO is given a grant of 1,000,000 options the diagonal line becomes nearly vertical and convexity in the above sense becomes enormous.

⁶ Financial firms seem especially prone to lavishly convex compensation practices. We are reminded of the financial crises surrounding the collapse of LTCM. In the year preceding its bankruptcy, the partners took the deliberate decision to reduce the firm's capital, as a device for maximizing returns. More recently (2008) highly convex managerial

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات