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# Keeping up with CEO Jones: Benchmarking and executive compensation☆

Ron A. Laschever*

University of Illinois at Urbana-Champaign, USA

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ABSTRACT

This paper seeks to understand the role that peer comparisons play in the determination of executive compensation. I exploit a recent change in the Securities and Exchange Commission's regulations that requires firms to disclose the peer companies used for determining the compensation of their top executives. Using a new dataset of S&P 900 companies' choice of benchmarking firms during two fiscal periods (2007 and 2008), I investigate what determines the choice of comparison firms. I find that companies have a preference for choosing higher-CEO-compensation firms as their benchmark. Though I find that companies prefer to choose as their benchmark peers with similar firm characteristics, for CEO compensation, this effect is countered by a preference for firms with higher-than-own CEO compensation. Using the complete map of firms' choices, I implement an instrumental variable strategy that uses the characteristics of peers-of-peers to estimate the effect of others' compensation on own compensation. For Fiscal Year 2007, I find an elasticity of 0.5.



## 1. Introduction

Executive compensation has risen considerably since the 1980s[1] and continues to attract attention from shareholders, policy makers, and the public at large.[2] Anecdotal evidence suggests that firms tend to choose high-compensating firms as their peers. For instance, in a recent New York Times article, Denise L. Nappier, the treasurer of Connecticut and fiduciary of the state's $23 billion Retirement Plans and Trust Funds is quoted as saying: "The thing about looking at CEO pay of competitive companies, often companies will want a CEO to be paid in the top quartile of his peers. But not everyone can be above average and this tends to ratchet pay up" (Morgenson, 2006). Piketty and Saez (2003) document that a large part of the increase in income inequality in the US during the last few decades is due to the growing share of wage-earners, such as

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* Correspondence address: Purdue University, Department of Consumer Science and Department of Economics, 812W. State Street, West Lafayette, IN 47907, USA. Tel.: +1 217 766 9340.

E-mail address: ronl@purdue.edu

[1] Murphy (1999) documents that S&P 500 CEO realized pay doubled in real terms between 1980 and 1995. Bebchuk and Grinstein (2005) find that the ratio of top executives compensation to firm earnings grew from 5 percent in 1993–1995 to 10 percent in 2001–2003.

[2] For instance, in 2007, the New York Times (Dash, 2007), ran a seven-page story (which it does annually) on executive compensation. The Committee on Oversight and Government Reform (110th Congress), held hearings regarding CEO pay on December 5, 2007 and March 7, 2008.

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executives, in the top percentile and 0.1 of a percentile of the income distribution. They suggest social norms regarding pay inequality as one possible explanation for this increase.

Firms may choose higher-paying peers to benchmark against because those firms are more attractive, or because compensation committees may want to give a competitive compensation package to their Chief Executive Officer (CEO).[3] Compensation committee members may also be influenced by a psychological motivation and choose to pay CEOs in comparison to their own pay (as proposed by O'Reilly et al., 1988) or that of other CEOs. Festinger (1954) posited that absent objective measures of ability, individuals will seek to compare to the abilities of others. Similarly, compensation committees might find it hard to evaluate their own CEOs and turn to other firms for best practices.

This paper seeks to understand the role that comparisons and peers play in the continued increase of executive compensation. I exploit a recent change in the United States Securities and Exchange Commission (SEC) regulations requiring companies to disclose the peer companies used for determining compensation. I construct a new dataset of companies' choice of benchmarks for all firms in the Standard & Poors 900 (consisting of the S&P 500 and MidCap indices). I investigate what determines the choice of comparison companies and find that firms have a preference for including as their benchmark larger (in terms of assets, net sales, and number of employees) firms, and firms that have higher CEO compensation. In addition, I find that firms display an aversion to choosing firms that are dissimilar to them, but that this effect is largely mitigated when firms consider other firms that have higher compensation than their own. I then examine the causal effect of a change in others' pay on own pay using an instrumental variable strategy that makes use of the extensive network mapping that is revealed by firms' benchmark choices.

In 2006, the SEC implemented changes to the required reporting of executive compensation. The amended Final Rule Release was released on August 2006 (Securities and Exchange Commission, 2006). The purpose of the changes was to increase transparency.[4] The new release calls for an extended Compensation Discussion and Analysis disclosure. One suggested component is: "whether the company engaged in any benchmarking of total compensation or any material element of compensation, identifying the benchmark and, if applicable, its components (including component companies)" (Securities and Exchange Commission, 2006, p. 32). I exploit this change in regulations that resulted in firms reporting the firms they used for their executive compensation benchmark to construct a new dataset of the lists of benchmarking firms.

Though the SEC regulation increased transparency, there are no actual stipulations regarding how a firm must go about choosing its benchmark. Similarly, there are no direct guidelines as to how the benchmarks and their components should be used in determining executive compensation. Nonetheless, the majority of companies provide some rationale in their proxy statements for how they choose their benchmarks (including the use of compensation consulting firms). Many of the firms then use their benchmark choices to determine own-firm executive pay, either via a simple regression, or more often, using some summary statistic such as the mean or a particular decile. Hence, the choice of benchmark affects CEO compensation. Furthermore, because firms' current-year compensation then is used by other firms in their benchmarking, a ratcheting effect could possibly occur.

This paper is related to a growing literature on the determinants of executive compensation. Murphy (1999) and Bertrand (2009) provide a comprehensive review of some of the issues, as well as reasons for the growing interest in the topic. This paper is also related to a growing interest among economists in the role of peer effects and social influences.[5] Antle and Smith (1986) were one of the first to examine the effect of relative performance evaluation on executive compensation. There are several papers that examine the role of relative performance pay. Gibbons and Murphy (1990) examine CEO contracts and find that many firms use relative performance pay as part of compensation. Though relative performance evaluation is somewhat tied to the choice of benchmarks, it is possible for a firm to determine its CEO pay based on the pay of others, without explicitly using any form of relative performance evaluation.

There are also several studies investigating actual proxy statements of firms. For instance, Porac et al. (1999) scan firms' proxies for the use of words such as peers to examine the use of comparable firms. Bannister and Newman (2003) examine proxy statements for use of relative performance evaluation practices. However, these studies are all constrained by the fact that until the recent change in SEC regulations, information on the actual components of each firm's benchmark is limited. Two recent exceptions are the work of Faulkender and Yang (2010) and Bizjak et al. (2011) who, concurrently with my work, have examined the factors that affect benchmark choices by using the same recent change in SEC regulation. Similar to my results on the determinants of benchmark choice, they find a preference for higher-compensation firms as a benchmark.

This paper extends these findings on two important dimensions. First, in the case of benchmark choice, I make use of an additional year during which firms make choices. I use this to allow for choosing-chosen pair-wise fixed effects that control for any systematic unobservable component between every two possible firms. Once these fixed effects are incorporated,

[3] Two recent game-theoretic models suggest that firms may prefer higher pay for strategic reasons. Hayes and Schaefer (2009) present a game-theoretic model in which they assume firms set high CEO pay to increase the external perceptions of their firm's value. Gritsko et al. (2013) consider an arms race where in equilibrium firms are forced to hire high-pay (and high-performance) CEOs to stay competitive with other high-paying firms.

[4] In a speech given January 23, 2007, SEC Commissioner Roel C. Campos said: "our goal is to make executive compensation as transparent as possible, so that shareholders fully understand what executives are being paid. Further, with our new rules requiring a 'Compensation Discussion and Analysis' section, it is also our goal to require disclosure of the board's process of setting executive compensation and to have companies explain the board's analysis as to why it settled on the levels of compensation granted". The speech is available at http://www.sec.gov/news/speech/2007/spch012307rcc.htm.

[5] These range from theoretical work on network formation and network games (see Jackson, 2004 for a survey of networks games) to the measurement of peer effects in such settings as welfare take-up (Bertrand et al., 2000), recidivism (Bayer et al., 2009), etc.