International Review of Economics and Finance 48 (2017) 406–422

Contents lists available at ScienceDirect

International Review of Economics and Finance

journal homepage: www.elsevier.com/locate/iref

Does fairness breed efficiency? Pay gap and firm productivity in China☆

Yunhao Dai[a], Dongmin Kong[b,*], Jin Xu[c]

[a] School of Economics Huazhong University of Science and Technology, Wuhan 430074, Hubei, China
[b] School of Finance Zhongnan University of Economics and Law, Wuhan 430073, Hubei, China
[c] School of Economics Huazhong University of Science and Technology, 430074 Hubei, China

ARTICLE INFO

JEL classifications:
D31
J24
J31
J33

Keywords:
Pay gap
Productivity
Executive compensation
Wages
China

ABSTRACT

The pay gap (*PG*) between executives and employees has received considerable attention. *PG* may incentivize employees to work hard for promotions; alternately, it may also lead to inequity aversion and decrease employees' work effort. We examine these two competing theories about the effects of *PGs* on firm productivity. By incorporating incentive and inequity aversion hypotheses into one model, we find that productivity is an inverted-U function of *PG*. Supporting evidence is provided using wage expenses of listed firms in China. To establish causality, policy shocks are introduced. We further show that outside job opportunities and employees' skills significantly moderate the inverted-U relationship.

"Inequality, rather than want, is the cause of trouble."

– Confucius,

1. Introduction

The pay gap *(PG)* between executives and employees has attracted considerable attention from social media, the public, and governments. For example, on February 4, 2009, the U.S. President Barack Obama imposed a US$500,000.00 cap on the pay for senior executives working in the most distressed financial institutions.[1] The Dodd–Frank Act, passed on July 21, 2010, required companies in the US to disclose the pay ratio of CEO compensation to the company's median employee compensation.

However, little is known about the economic consequences of *PGs*. To the best of our knowledge, Faleye, Reis, and Venkateswaran (2013) were the first to examine the effects of *PG* on firm performance, using detailed information about employees' and executives'

☆ We acknowledge the helpful comments from Carl Chen (the editor), the anonymous referee, Wenjing Li, Shasha Liu, Pingui Rao, Rui Shen, Mingli Xu, and seminar participants in Jinan University, Peking University, Wuhan University, Zhongnan University of Economics and Law. Financial support from the National Natural Science Foundation of China (Nos.: 71372130; 71173078) are also gratefully acknowledged. All errors are our own.

* Corresponding author.
E-mail addresses: daiyunhao@hust.edu.cn (Y. Dai), kongdm@hust.edu.cn (D. Kong), jinxu@hust.edu.cn (J. Xu).

[1] http://www.cnn.com/2009/politics/02/04/obama.executive.pay

http://dx.doi.org/10.1016/j.iref.2017.01.003
Received 8 December 2015; Received in revised form 26 December 2016; Accepted 2 January 2017
Available online 03 January 2017
1059-0560/

compensation.[2] Faleye et al. (2013) find that the relation between relative pay and employee productivity is insignificant, but firm performance increases with relative pay. However, Faleye et al. (2013) conducted their study based on U.S. data, and only 10% of the firms had disclosed employee wage information. Therefore, their results suffer from severe self-selection bias. Furthermore, the endogenous issue was not addressed in Faleye et al. (2013), and they only investigated the linear effect of *PG* on productivity.

To fill this gap, we investigate the relationship between *PG* and firm productivity using a model that integrates two theories: the tournament theory and the inequity aversion theory. The tournament theory emphasizes the incentive effect of the *PG*, which posits that a large wage dispersion motivates employees to work hard to achieve promotion (Lazear and Rosen, 1981; Rosen, 1986). According to this theory, a large pay gap can increase employees' effort and thus is beneficial to firm performance (Lallemand, Plasman & Rycx, 2004; Banker, Bu & Mehta, 2016).[3] In contrast, the inequity aversion (or relative deprivation) theory focuses on distributive justice, which suggests that income inequity will be harmful to individual (Adams, 1965; Alesina, Di Tella & MacCulloch, 2004).[4] A large pay gap will engender the feelings of unfairness among employees because they think they receive less than they deserve. A large wage dispersion not only decreases employee morale, but also encourages employees to find alternative ways to shirk (Corneliben, Himmler & Koenig, 2011; Chen & Sandino, 2012). Thus, inequity aversion theories predict that a large pay gap negatively affects firm performance and productivity (Lazear, 1989; Pfeffer and Langton, 1993; Bloom & Michel, 2002; Siegel & Hambrick, 2005; Tao, Chuang & Lin, 2016).[5]

Intuitively, low wage dispersion decreases the motivation for both employees and executives because employees cannot obtain a pay raise even after promotion and executives may be attracted by other firms that pay higher compensation. However, when the wage dispersion is exceedingly large, employees will become angry and have low morale because of inequity aversion or deprivation. For example, Bebchuk, Cremers, and Peyer (2011) find that executive pay disparity, measured by CEO Pay Slice (CPS), is negatively associated with firm value. Chen, Huang, and Wei (2013) also observe that a large CPS increases the implied cost of equity and lowers the value of the firm. Thus, it's important to pay more attention on the fairness between employees and executives.

Therefore, we predict a non-linear relation between *PG* and firm productivity. Specifically, the tournament theory takes effect when wage dispersion is under the optimal level of *PG*, and the effects predicted by the equity and relative deprivation theories become dominant when the wage dispersion is above the optimal level. Therefore, *PG* and firm productivity have an inverted-U relationship.

In particular, we investigate this relationship between *PG* and firm productivity of publicly traded firms in China during the period from 2003 to 2011. Unlike firms in the U.S., publicly traded firms in China are required to disclose salary expenses paid to both executives and employees. Therefore, Chinese data is more appropriate for this study because they may avoid selection bias issues.

Although we use Chinese data in this study, the insights gained from our evidence are not limited to the Chinese market. In effect, governments in both developed countries, such as the U.S., and developing countries, such as China, have realized the importance of fairness (Chao, Nabin, Nguyen & Sgro, 2016) and have begun to manage large pay disparities by establishing ceilings on CEO compensation.

For example, the Ping An Insurance Co. chairman, Ma Mingzhe, earned more than RMB66 million (around US$9.3 million) in 2007, which is about 2647 times the average salary of a worker, measured as the average annual income of urban workers according to the National Bureau of Statistics of China. Such high executive compensation was disapproved of by 93% of voters in an online poll.[6] To solve the problem, the Chinese government has formulated policies to adjust the relative pay of executives and employees. Since the implementation of the annual compensation system in 2002, the State-owned Assets Supervision and Administration Commission (SASAC) has required that executive compensation in government-controlled companies cannot be higher than 12 times that of the average employee salary in the firm. However, the enforcement of this policy has been very weak and many executives' salaries are much higher than this ceiling (Li, Lou, Wang, and Yuan, 2013). In April 2009, the Ministry of Finance imposed a pay cap for top executives at state-owned financial institutions because of rising public complaints about huge pay packages for top executives in those companies.[7] On September 16, 2009, with the purpose of limiting top executive compensation, a dozen Chinese government ministries issued the *Guidelines for Regulating Compensation of Executives at Centrally Administered SOEs* (the *2009 salary guidelines*), which apply to Chinese central state-owned firms. These 2009 salary guidelines require that the basic salaries of executives of SOEs should not exceed five times the average pay of employees in the last year and the bonus pay should not exceed three times the basic salaries of executives (i.e., twenty times in all). On August 29, 2014, the Central Committee Political Bureau of China further implemented its program of salary reform for the salaries of top executives in state-owned sectors.[8] This salary reform can be seen as an important part of China's efforts to push forward the reform of the income distribution system.[9]

[2] Previous studies have examined the effect of wage dispersion (Cowherd and Levine, 1992; Bloom, 1999; Martins, 2008), however, they were not able to estimate the pay gap accurately due to data limitations and the results are controversial.

[3] However, it is important to note that a compressed wage structure is preferred when the initial incentive effect of a performance-related pay system is offset by a lower degree of work cohesion due to the sabotage of some workers, as suggested by Lazear (1989).

[4] In addition to these two streams of literature, there are alternative theories explaining the relationship between wage dispersion on team performance, such as Mohan (2014).

[5] The notion of fairness is especially important in China, which values traditional culture. Highly paid CEOs receive plenty of attention and heavy pressure from the public; when they do something wrong, the reaction of the public is strong and affects both the entrepreneurs and the reputation of the firm.

[6] http://www.wsj.com/articles/SB120775645203201929

[7] http://news.xinhuanet.com/english/2009-04/09/content_11159461.htm

[8] http://www.china.org.cn/china/2014-08/28/content_33374610.htm

[9] http://news.xinhuanet.com/english/china/2014-08/29/c_133606542.htm, http://www.globaltimes.cn/content/911299.shtml