Closing the Income Gap:

Evaluating the Effectiveness of Employee Stock Ownership Programs

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Abstract

I. Introduction

In the last 50 years, average wealth has increased tremendously around the world, but this increase has not been shared equally by all groups (McKernan et al. 2017). Specifically, the top .1 percent has captured 13 percent of all economic growth over the past four decades (Levitz 2017). One measure of this inequality is the increased disparity between executive and employee pay. For example, in 2015 the ratio of average CEO pay to average worker pay was 335 times, compared to 40 times in 1980 (Hermalin and Weisbach 2017). In 1956 political economist Louis Kelso, recognizing executive and employee pay disparity as a potential barrier to long-term capital expansion, devised the Employee Stock Ownership Plans (ESOPs) and the Employee Stock Purchase Plans (ESPPs) as a way of distributing economic growth to the entire workforce and providing lower-income workers with access to increased earnings (Freeman and Knoll 2008). ESOPs allow employees to own stock in the company without having to purchase shares, and ESPPs allow employees to use after-tax wages to purchase stock in their companies, usually at a discounted price (NCEO 2018). In 1974, Congress passed the Employment Retirement Income Security Act (ERISA) which contained information regarding ESOPs, and led to the start of companies incorporating these plans. As of 2015, 36% of employees working for companies with stock options owned stock or options in their companies (NCEO 2018). By providing all employees, not just those at the top, with access to capital, is it possible that in companies with ESOPs and ESPPs, the economic gap between the top and the bottom is compressed? And, given possible differences in incentive structure within ESOP companies, are the management teams at those companies more likely to reward the firmôs CEO for increasing the pay of its workers? Might ESOPs be a viable response to the urgent problem of income inequality?

This paper will utilize panel data from 2007-2016 to answer these questions by examining

whether or not CEO pay in ESOP-firms is more sensitive to employee wage increases, to an increase in the number of employees, or to an increase in firm performance and by analyzing whether there is a significant difference between the within-firm pay gap in the various types of firms. Perhaps CEOs of ESOP companies get remunerated for pursuing worker interests in addition to shareholder interests or perhaps companies with ESOPs impose more discipline on CEO pay because employees now have stake in the game. Similarly, perhaps because ESOPs have been proven to improve employee morale and productivity, then employees of ESOP companies are not only making more income due to higher productivity, but are also now making money through capital gains. If this is the case, then not only does this provide insight

owners to sell a substantial stake to the trust (NCEO 2018). Relying on employees to make the decision on whether or not to purchase shares historically shows that the majority of eligible employees will not participate, as people tend to favor current income over future rewards (NCEO 2018). Furthermore, among those who do participate, the amount set aside will be skewed towards higher-paid employees who have more disposable income (NCEO 2018). Despite the different rules, countries such as Ireland, the UK, Australia, New Zealand, and South Korea all have multiple laws to encourage widespread employee ownership, but the number of employees involved is significantly lower. For example, in the UK there are only about one million employees engaged in ownership plans (NCEO 2018). Similarly, in South Korea in 2012, there were 3,000 employee ownership plans covering just 1.2 million workers (NCEO 2018).

Both ESOPs and broad-based option plans provide more wealth to employees. Findings indicate that ESOP participants have about 2.2 times the retirement assets of comparable employees in comparaplo DŽ ` ¯ ḥ r

a firm wants to achieve a specific goal, they will orient their reward system towards it (Jensen 2010). Therefore, if employee stock ownership plans essentially make employees shareholders, then under this theory, a firm would want to reward an employee potentially through higher wages.

attitudes of employees and concluded that employee-owners exhibit higher levels of integration, involvement and general satisfaction than non-owners. Daniel Hollack et al. (2004) build upon these findings and assert that employee satisfaction is higher in ESOP companies because ownership enables employees to feel as if their work has more influence on the firm- a feeling correlated to higher satisfaction. But Saioa Arando et al. (2015) find that job satisfaction is actually lower among workers with significant employee ownership than it is in firms with modest employee ownership. If employee satisfaction in ESOP companies is higher than in non-ESOP companies, and higher satisfaction leads to higher wages indirectly, then this is yet another mechanism by which ESOPs should lead to employee wage improvement.

ESOPs can not only improve wages indirectly through higher productivity and satisfaction, but also have been linked to higher levels of wealth directly. Robert Bruner and Richard Brownlee (1990) examined the relationship between ESOP and wealth and found that public shareholdersô wealth increased by 15.90% post ESOP implementation (Bruner and Brownlee 1990). Buchele et al. (2010) utilize a newer data set and find that a one-dollar increase in ownership is associated with an 80 cent increase in total wealth. If ESOPs have been proven to increase firm performance (Jones and Kato (1993), Quarrey et al. (1986)

2010). Thus, we can see the equalizing effect of ESOPs. But when looking more specifically at the wealth distribution, the results show that the shape of the distribution of wealth within the group of employee-

between CEO pay and average wages to represent inequality. Furthermore, all three studies utilize the same two datasets, the NBER survey of workers in 14 companies that use shared capitalism programs extensively, and the national GSS survey, which provides a broad representative view of the extent of the pogroms (Blasi, Freeman, Kruse 2008). Both of these data sets encompass data up until 2006. No studies have examined wealth inequality using data from the past decade. My study hopes to provide a broader understanding of the implications for employee stock ownership plans on income inequality, and assess whether or not widespread employee stock ownership plans could be an effective solution to the growing disparity between CEO and employee pay. Given the importance and changing nature of managerial structures, and given that pay inequities between executives and lower level workers has been proven to lower productivity, increase turnover, and decrease morale (Murphey 1999), it is vital that we explore ways to counter the rising wealth disparities in America.

IV. Basic Empirical Strategy and the Data

In order to test the sensitivity of CEO pay

CEO to Worker Pay Ratios to gather information on CEO total pay and median worker total pay. One caveat I recognize in using this data is the potential response biases, as most workers historically underreport bonuses and stock options in surveys, or neglect to remember the exact numbersð tendencies that could impact the recorded data from Glassdoorôs salary survey (Glassdoor 2015). I will take these CEO pay and median worker pay measurements to gather a within firm pay-gap measurement. I will control for firm metrics gathered through Bloomberg to ensure robustness in my results.

On the one hand, it is possible that given that ownership plans are often correlated with a more egalitarian company culture, and given that the culture of the company (HR policies) influences CEO pay (Murphy 1999), then perhaps CEO pay would not rise even if employee wages rise, mitigating the inequality gap. It is also possible that managers of companies that decide to employ ownership plans would want to reward a CEO who increases the wellbeing of its workers, providing insight into the incentive structure prevalent in companies with employee stock ownership plans (ESOP), and employee stock purchasing plans (ESPP). The result of this provides insight into the sensitivity of CEO pay to employee wages. I will then examine whether companies with ownership plans tend to reward their CEOs for increasing the number of employees or whether there is no difference in the sensitivity of CEO pay between ownership companies and non-ownership companies when the number of employees increase. The results of these findings will broaden the discussion on both incentive structure and income inequality by showing how ownership plans impact CEO-pay sensitivity. Lastly, I will examine how the within-firm pay compression variable differs between the types of firm, providing understanding of whether or not firms with employee ownership tend to be more egalitarian.

V. Methodology

To account for the possibility that the presence of pay systems may have an indirect effect on CEO salary, I will employ a fixed effects model following the specification of Jones and Kato (1995). This model includes year dummy variables to capture shocks that are common to all firms, as well as firm specific effects, like managerial ability and worker quality, to capture the time invariant heterogeneity of firms (Jones and Kato, 1995). Specifically, the general model will regress CEO salary onto the firm metric, followed by the same regression but with the interaction between the metric and the ownership scheme:

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where ᶦ ₒ represents the sensitivity of CEO pay with respect to the firm's performance metric, E is the ESOP dummy, P is the ESPP dummy, captures firm fixed effects and ό is the error term. I employ this model utilizing three metrics- Market Cap, Wages, and Number of Employees. Market Cap refers to the total value of the company's shares and is typically used to measure company revenues (Murphy 1999). Due to the fact that American corporations neglect to report

where β_0 and β_2 represent the coefficients on the ESOP a erm respectively, β_1 represents the coefficient on the performance metric, and nts the error term. Given that Employee Ownership plans were initially designed to cou rowing wealth disparity in the 1950s, it is worth studying whether these plans have succ eir original mission. If the results indicate that there is in fact a lower pay-gap in ES nies, then employing them

Descriptive Statistics of the Data

The summary statistics show data on the disparities between ESOP and non-ESOP companies, and between ESPP and non-ESPP companies. The merged panel dataset contains observations from companies on the S&P 500- 24% of which have an ESOP and 44% of which have an ESPP that were all established prior to 2007. The average CEO salary for ESOP companies is $1,969,967, approximately $490,000 higher than the avee.3 321.53 Tm0 greg

total pay/median worker total pay) is almost 250 less than it is for non-ESOP companies. The

companies make $37.85 for every dollar increase in wages. This result is consistent with the conclusion from the Market Cap regressions discussed above in that CEOs of ESOP firms are held more accountable to changes in company metrics. In this case, CEOs of ESOP companies are rewarded more for improving the wages of their employees, providing information on the incentive structures prevalent in ESOP firms. But if ESOP CEOs are getting more than non-ESOP CEOs per every dollar increase in employee wage, this would mean that the gap for ESOP firms is actually growing. If CEO salary increases by $38 dollars (.0023%) to every $1 increase (.0007%) for employees, this would only work to perpetuate the inequality gap. Thus perhaps ESOPs cause CEOs to be held more accountable, but the closing of the income gap is not achieved. However, given the tendency for companies to not report wage data, one must note that the sample drops from 290 companies to 27 companies. Thus, the results must be taken cautiously as the sample is not representative. Lastly, the lack of significant results for the ESPP interaction reveal that the presence of ESPPs makes less of an impact than does the presence of ESOPs on CEO pay.

Table 1c gives us information on how CEO pay is impacted by a change in the number of employees within the company, and how this differs between ESOP and non-ESOP companies, and ESPP and non-ESPP companies. The coefficient on the number of employees is 26.47, indicating that as the number of employees increases by one, CEO pay will rise $26.74. The coefficient on the interaction term of both the ESOP and ESPP variable and the number of employees is statistically insignificant, indicating that the presence of an ownership scheme may not impact how sensitive CEO pay is to changes in the number of employees. This implies that CEOs of ESOP companies are more likely to get higher compensation increases than non-ESOP

CEOs for changes in market cap or employee wages than they are for changes in the number of employees.

Pay-Gap Compression Results

Table 2

The t-test of pay gap and ESOPs show that despite the lower pay gap level

VII. Conclusions and Implications

This paper has looked at the dynamics between CEO salary and firm performance, wage improvements, and employee count, in the context of whether or not executive pay sensitivity varies between companies with employee ownership plans

and align the goals of the employees with those of the firm and with shareholdersð would be more inclined to reward CEOs for their performance. Moreover, the data proves that the type of ownership scheme matters as the presence of ESPP does not statistically impact CEO pay sensitivity. These findings suggest that if companies with ESOPs impose more discipline on CEO-pay as represented by a stronger pay performance sensitivity, then CEOs of ESOP companies are incentivized to help their workers.

This paper provides an up-to-date assessment of the benefits of ESOPs. It uses panel data from 2007-2016 to examine how ESOPs impact executive pay, with the goal of assessing the potential role such plans might play in mitigating inequality. The results indicate that CEOs get rewarded more for higher Market Cap, in line with previous studies, and that this reward is higher for CEOS of ESOP companies, a new contribution to this field. Further research examining how other non-monetary benefits play into this equation would provide a deeper understanding of ESOP culture and inequality, as monetary benefits are not the only factor encompassing employee wealth. This paper is the first to utilize Glassdoorôs CEO pay ratio data to examine whether or not ESOPs have an equalizing effect on the CEO to worker pay gap, and finds that ESOPs do not have a significantly lower pay gap. As of 2018, the Securities and Exchange Commission will require publically traded companies to disclose how their CEOs are compensated in comparison to their employees. Thus repeating the study with this new data could potentially alter the insignificant conclusions. Overall, this paper broadens the discussion of corporate pay schemes and CEO pay, and examines the potential for ESOPs to serve as a mechanism for mitigating the growing inequality in America.

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Summary Statistics

p	Number	Wages				Market Ca
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 1a

VARIABLES	1	2	3	4
[illegible]	7.322***	2.007	10.36**	1.674
Market Cap	[illegible]	[illegible]	[illegible]	[illegible]
Observations	2,217	2,217	2,217	2,217
R-squared	0.010	0.005	0.010	0.005
Number of Companies	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Table 2A: Pay Gap

VARIABLES	1	2	3	4
SOP	23.08		81.74	77.52
Observations	[illegible]	[illegible]	[illegible]	264

264 270 266

Table 2b:Log Pay Gap

VARIABLES	1	2	3	4
ESOP	-0.133		-0.0595	-0.115
	(0.215)		(0.239)	(0.231)
ESPP		0.0569	0.0523	

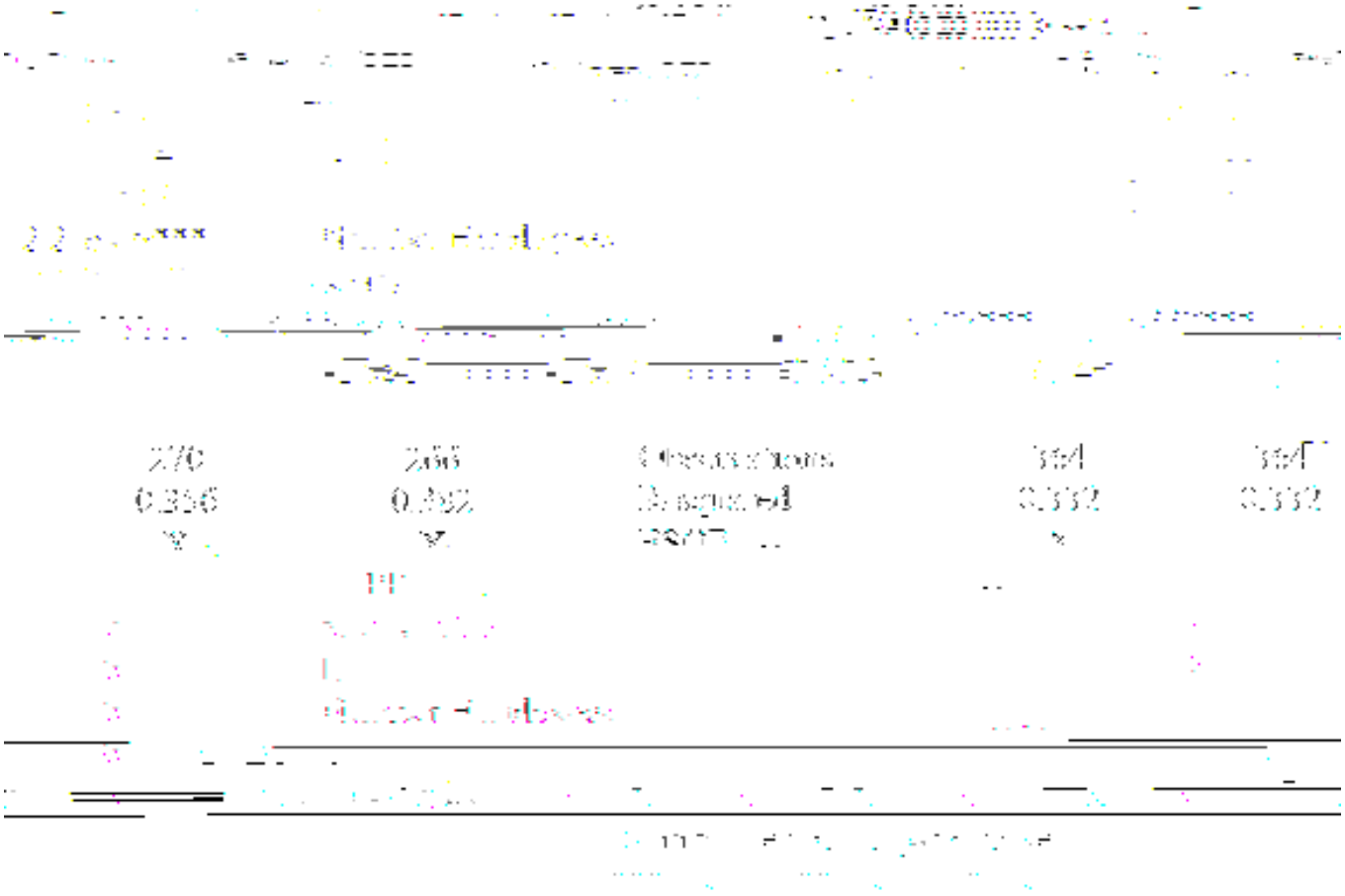
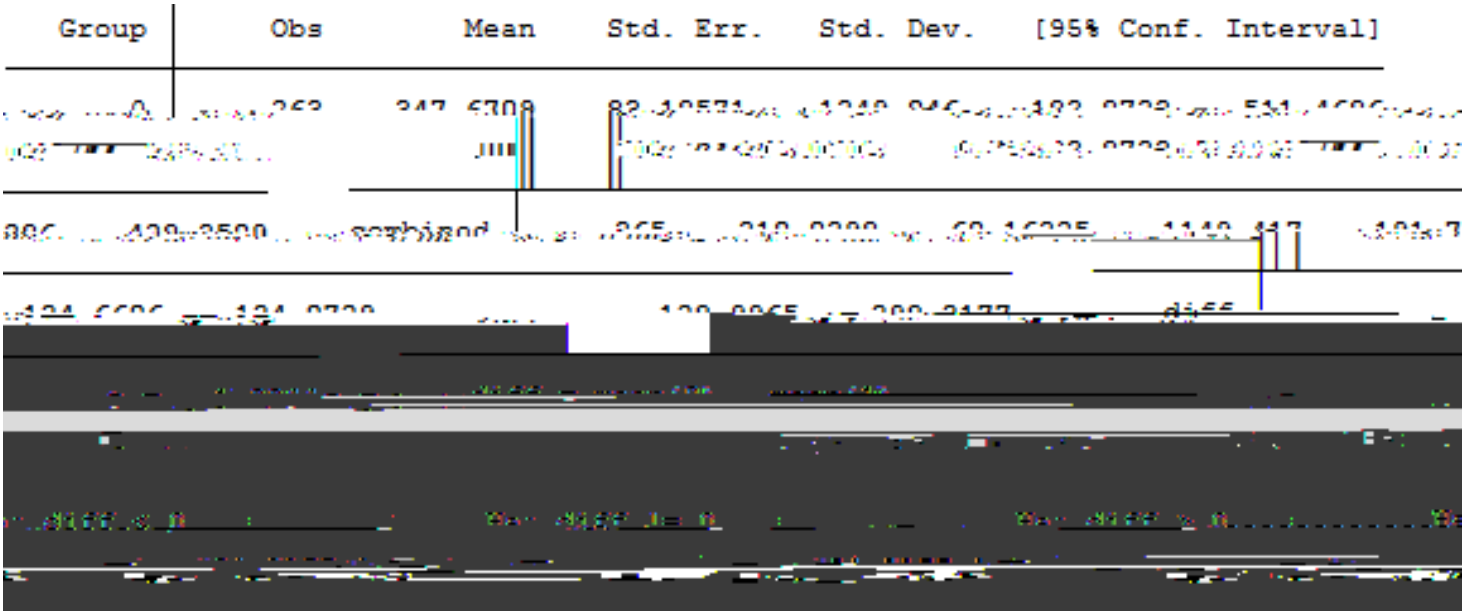


Table 2D: Estimating CEO Pay

Median Worker Pay	8.751	8.639	0.744	0.401	[illegible]
Observations	364	270	266	[illegible]	364

Appendix

T-Test pay gap (by ESOP)



T-Test pay gap (by ESPP)