

# **Pay me a single figure!**

## **Assessing the impact of single figure regulation on CEO pay**

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### **Abstract**

In this paper, we examine the relation between quantitative disclosure of CEO pay and the optimality of pay structure in terms of 1) level of pay, 2) pay-performance relationship, and 3) CEO-to-employee pay ratio. We use the new reporting regulation in 2013, requiring large and medium-sized companies and groups in the UK to report a single figure of total pay, as an exogenous shock to pay disclosure. Our results are based on a hand-collected sample of FTSE 100 firms over the period of 2010-2017. The main findings are threefold: Firstly, we find that CEO total pay stays roughly the same before and after the new regulation. In addition, firms that voluntarily adopt the regulation early have higher pay increases than their counterparts that do not adopt early in univariate tests. Secondly, pay-performance sensitivity actually declines after the new regulation by more than 50%. This effect is particularly evident in firms with weak corporate governance. Thirdly, the effect of the reform on the CEO-to-employee pay ratio is minimal, whereby it declined slightly following the reform, but this is only significant in univariate tests. Our results suggest that the 2013 regulation which increases the reporting transparency has limited impact on total pay and pay-performance in the UK.

Keywords: Executive compensation; Pay-performance; Regulation; CEO pay gap

JEL code: M12; M48; M52

## 1. Introduction

Executive compensation in the UK continues to be a controversial topic due to the perception of excessive pay that is not linked to firm performance. Total pay for bosses of FTSE 100 companies has quadrupled over the 18 years up to 2016 despite efforts by shareholders to control this (FT, 2017). At the same time, CEO pay is not related to shareholder returns (e.g. Ozkan, 2011). As an example, Dalton Philips, the former CEO of the UK supermarket chain, Morrisons, was awarded a £1.1 million payoff in addition to doubling his pay during his last year as CEO before being fired in 2015 (Haughton, 2015). This ‘reward for failure’ is not an isolated case.

One approach the regulatory bodies in the UK have taken to address these issues is to increase disclosure requirements.<sup>1</sup> Specifically, the Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendments) Regulation 2013 (hereafter LMCGR2013), which came into force on October 1<sup>st</sup>, 2013, was introduced to increase transparency in reporting CEO pay. The regulation requires eligible companies to report CEO total compensation as a single figure, making it easier to have a consistent estimate of pay including long-term incentive plans. It provides detailed specifications on what to disclose and how to present CEO compensation, effectively putting CEO compensation under scrutiny; thereby increasing pressure on companies to justify pay to their top managers. The new regulation intends to rein in excessive pay and to better align pay with manager performance (Petrin, 2015). Some evidence shows that the regulation may have been successful in this regard. In 2019, the median pay of FTSE 100 CEOs fell to its lowest level in five years. This was the lowest level since 2014 when the single pay disclosure came into force (FT, 2019).

Before the single figure regulation became mandatory, most firms disclosed some components of CEO pay but not aggregated total pay. For example, Barratt Developments shows CEO pay of £1.4 million in the 2010 annual report including salary, bonus, pension, and benefits in kind (Barratt Developments 2010 annual report, p. 50). However, no values were provided for long-term incentive plans or share option plans awarded/vested. Instead, only information on the number of shares awarded or options granted/vested was presented (Barratt Developments 2010 annual report, pp. 51-52) Therefore, to fully understand CEO’s total pay, different pay

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<sup>1</sup> In addition, regulatory reforms have given more power to shareholders to vote down the compensation contracts. Shareholders have had an advisory vote for or against executive compensation contracts in the UK since 2002 and this vote has been mandatory since 2013, to be carried out at least once over a three year period (Enterprise and Regulatory Reform Act 2013). The UK government has proposed to mandate annual votes but this may apply only to some elements of pay (FT, 2016).

components, disclosed in different parts of the annual report, need to be collated. This complexity significantly reduces the transparency of compensation.

Although well intended, it remains unclear whether the single figure regulation limits pay and improves pay-performance. Historically, some well-intended compensation reforms caused the exact opposite effect.<sup>2</sup> While directly regulating pay is costly and could be ineffective,<sup>3</sup> regulators are keen to know whether a soft approach can achieve good results. Prior literature finds that firms use obfuscation strategies in compensation reports to hide excessive pay and avoid shareholder dissent (e.g. Craighead et al., 2004; Hooghiemstra et al., 2017). So, increasing transparency in financial reports could impact pay practice. If proven effective, the disclosure requirement could set an example for future compensation reform. This paper attempts to address this by investigating the new disclosure requirement.

Specifically, we take a closer look at the single figure regulation as an exogenous shock on disclosure in the UK and investigate its effectiveness in controlling excessive CEO pay. Using hand collected data from a sample of FTSE 100 firms in the years 2010-2017, we provide new evidence of the effect of the single figure regulation, complementing results of Gupta et al. (2016). In addition, we examine firms that present the single pay in their annual report before the mandatory date in October 2013.

Our findings are threefold: firstly, the level of CEO pay does not change significantly after the introduction of the single figure requirement. Interestingly, firms that voluntarily adopt the regulation before the required October 2013 date increase CEO pay in the univariate tests. These findings indicate that the reform has little impact, or the opposite effect than intended by the regulators, on the overall level of pay.

Secondly, we examine whether companies strengthen the pay-performance relationship following the reform. Our findings indicate that pay-performance (where firm performance is measured by return on assets) declines after the reform. Instead of strengthening the pay-performance relation, the new regulation makes executive compensation less sensitive to firms'

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<sup>2</sup>In the US, the one million-dollar deductibility rule (i.e. US Internal Revenue Code Section 162(m)) led to higher CEO compensation, even though the rule was intended to reduce CEO pay (Perry and Zenner, 2001; Murphy 2013b). In the UK, the Corporate Governance Code introduced "say on pay" back in 2002, as an indirect mechanism to constrain CEOs' excessive pay. However, empirical studies find that its effectiveness is very limited (Conyon and Sadler, 2010).

<sup>3</sup>Effect of the EU bonus cap and UK Remuneration Code are still being debated.

performance. On average, pay-performance in firms drops by more than 50%. This phenomenon is particularly evident in firms with weak corporate governance.

Thirdly, the CEO-to-employee pay ratio does not significantly change in the full sample. Even though the pay ratio declines on average by 17 points in univariate tests, this drop is not significant after controlling for firm, CEO and governance characteristics. While the reform intends to control the pay gap, its effectiveness is questionable. This result is similar to the findings of Gupta et al. (2016) who doubt the regulation has any substance.

We contribute to the literature in the following ways. Firstly, we extend the literature on executive compensation by investigating the pay structure and pay-performance sensitivity during a recent regulatory reform. This extends prior work examining alternative regulatory reforms. For example, Chang et al. (2012) find in a US sample, that pay-performance sensitivity of CEOs has decreased substantially following the Sarbanes-Oxley Act (2002). Our findings extend this research in a regulatory setting that directly targets increased transparency in executive compensation disclosure. This is different from reforms that directly regulate pay levels; for example, the Internal Revenue Code Section 162 (m) in the US directly regulates CEO pay; the rule limits tax deductibility of CEO pay above \$1 million unless it is performance-related (Balsam and Yin, 2005).<sup>4</sup> We also consider other executive compensation attributes such as level of pay and CEO-to-employee pay ratio.

Secondly, we extend the literature on firm disclosure, presenting an example of required increased level of disclosure which appears to be ineffective. This is in line with prior research on other types of disclosure, such as firm risk disclosures, which are found to be boilerplate (e.g. Bao & Datta, 2014; Beatty et al., 2019). Our data is also hand-collected and presents details of CEO pay contracts over a recent period in the UK.

Thirdly, our results offer new insights to the theoretical literature. While the interaction between shareholders (principal) and CEO (agent) are extensively examined and well understood, few studies introduce regulation changes in theoretical models. For example, Guo and Ou-Yang (2005) and Dutta (2008) demonstrate that both positive and negative relationships between risk and incentives are possible under modified principal-agent models. However, neither study formally modelled the impact of regulation changes, which is an important determinant of pay-performance. Gabaix and Landier (2008) and Edmans et al.

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<sup>4</sup> This has since been repealed in by the Tax Cut and Jobs Act, effective for taxable years beginning after December 31<sup>st</sup>, 2017. See <https://www.congress.gov/115/bills/hr1/BILLS-115hr1enr.pdf>.

(2009) provide two interesting modifications to the conventional principal-agent model. Their results explain the rapid rise in CEO compensation in the US. Yet again, they do not consider regulation change. Our results suggest an active avenue to extend the current principal-agent literature where regulation changes are not formally modelled.

Finally, we extend the literature on the CEO labour market by investigating regulatory effects on this market. Prior research on the CEO labour market examines the effect of regulation on appointed CEO characteristics (e.g. CEO quality as in Palia, 2000) or CEO compensation notwithstanding regulation (e.g. Fulmer, 2009). We extend these studies by examining the effect of regulation on several aspects of CEO pay, while controlling for the effect of CEO-specific characteristics.

The remainder of the paper is as follows. The next section discusses the single figure pay regulation, followed by related literature and our hypotheses in section 3. Section 4 presents the sample and research design. Our main findings are presented and discussed in section 5, followed by a conclusion in section 6.

## **2. The Single Figure Pay Regulation**

The single figure regulation, namely LMCGR2013, amends the previous version of the same regulation which was introduced in 2008. In the 2008 regulation, firms were required to disclose executives' compensation in a separate table of the annual report – director's total remuneration. However, pensions and long-term incentive plans (hereafter, LTIPs) were not required to be disclosed in the same table. Most firms disclosed pensions and LTIPs in their respective sections. The practice is understandable as pensions and LTIPs are both complex instruments that need involved explanation. But this reduces the level of transparency as the total compensation paid to CEOs is not clear. Readers of annual reports would have to manually calculate the total figure paid to top managers, which is not an easy task even for experienced analysts (Li & Young, 2016). Since LTIP is a substantial part of CEO compensation (a survey of CEO pay in FTSE 100 companies in 2017 finds LTIPs to represent 56% of total pay, CIPD, 2018), the reported total pay figure significantly understates CEOs' actual pay.

The single figure regulation addresses this issue and requires firms to report all pay components including pensions and LTIPs in the same table. Section 7.5 in part 3 of the new regulation states: *“The most substantive introduction is the requirement for companies to disclose the amount each director has been paid and to express this as a single figure taking account of all*

*elements of remuneration.*” (LMCGR, 2013).<sup>5</sup> The firm must also explain the director’s actual performance, and the basis on which it has made decisions on the level of variable pay. Additionally, firms need to justify the actual variable pay the CEO receives. This is a considerable change as firms have to adjust how LTIPs are presented and disclosed in annual reports. This regulation applies to annual reports on or after October 1<sup>st</sup>, 2013.

Another important issue the regulation addresses is the rising pay gap between CEOs and ordinary employees. Under the regulation, firms are required to produce a “statement of relative importance of spend on pay”, which compares executive compensation and remuneration paid to all employees. In addition to the two rules outlined above, there are other rules that directly relate to pay disclosure. For example, firms are required to compare changes in CEO pay to changes in employee pay. This rule intends to limit a common practice called “peer benchmarking”, where directors’ remuneration was negotiated by comparing competitors’ pay structure. Furthermore, the regulation has other rules that relate to remuneration disclosure. The most notable changes of the regulation are outlined in Exhibit 1.

((Exhibit 1))

### **3. Related Literature and Hypotheses Development**

#### *3.1 CEO Pay and Disclosure*

Public companies with diverse ownership suffer from agency problems due to the divergent interests of the principals (shareholders) and the agents (executives). The role of executive compensation is seen as a remedy to alleviate these problems using optimal contracting mechanisms (e.g. Holmstrom, 1979). However, empirical evidence does not support optimal contracting in all cases (e.g. Jensen and Murphy, 1990; Cohen et al., 2013; Choe et al., 2014) and finds evidence of rent extraction by CEOs in the form of high pay (Choe et al., 2014), that is not linked to firm performance (e.g. Bebchuk et al., 2011; Faulkender and Yan, 2015). This can lead to shareholder discontent and voting down pay packages such as in the case of BP in 2014 (The Guardian, 2016a).

One mechanism CEOs can use to limit shareholder discontent is to reduce the understandability of the CEO pay contracts. Li and Young (2016) document that director’s remuneration reports in 2015 are 50% longer and 20% less readable compared to similar disclosures in 2004.

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<sup>5</sup> The Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013 can be found at: <http://www.legislation.gov.uk/ukxi/2013/1981/contents/made>.

Albuquerque et al. (2015) find that excessive CEO pay is higher when compensation contracts are more complex, and therefore more difficult to understand. Similarly, Laksmana et al. (2012) find that firms with excessive CEO pay have compensation discussion and analysis sections that are complex and difficult to read. Hooghiemstra et al. (2017) find that US firms that make their reports less readable face fewer shareholder dissent when CEO pay is excessive, suggesting that firms are using complex pay packages to hide CEO pay. But the results do not hold when large institutional shareholders are present, reinforcing the monitoring role of sophisticated investors. Managers also produce less readable narrative disclosures to hinder monitoring of their activities by shareholders in other contexts (Hasan and Habib, 2020).

Evidence on whether CEO pay disclosure affects the CEO pay structure is mixed. Some prior literature finds no effect or a negative effect. For example, Mas (2016) finds that CEO pay increased following the mandated pay disclosure by the Securities and Exchange Act of 1934 in the US. On the other hand, Craighead et al. (2004) argue that mandated compensation disclosure leads to increased pay-performance sensitivity in widely held firms, compared to closely held firms. They find that pay-performance sensitivity is lower in widely held firms when there is no mandated disclosure.

### *3.2 Effect of Compensation Reforms on CEO Pay Level*

Prior research on compensation reforms suggest that compensation practices are market responses to regulation change. Murphy (2013b) documents that the initial popularity of stock options (as well as its later downfall) in the 1950s and the extensive use of stock options in the 1990s were a market response to changes in compensation regulation. Evidence also indicates that governments' direct intervention in executive compensation usually has unintended consequences. Perry and Zenner (2001) study the effect of a new regulation intended to limit CEO total pay in the US by placing a cap on non-performance-based pay. Their results suggest that firms reduce CEO salaries and increase stock-based compensation after the introduction of the regulation, but overall pay levels do not change contrary to the regulation's original intention. Similar evidence is found in Rose and Wolfram (2002) and Balsam and Yin (2005). Regulatory responses to the credit crisis also led to a number of compensation reforms on financial firms intended to curb the rising CEO pay. The Remuneration Code in the UK and Bonus Cap in the EU are prime examples that are extensively discussed in the literature. Dittmann et al. (2011) find that restrictions on CEO pay, through the EU bonus cap, can be easily circumvented. Conyon et al. (2011) analyse compensation reforms conducted in the past



three decades in the UK and find that compensation reform has very little impact on the upward trend of CEO pay. Firms seem to always find a way to increase their CEO pay. Murphy (2013a) explains why directly regulating pay has limited success in reducing overall pay level. His results suggest that demand for talent and market competition renders bonus caps ineffective. Kleymonova and Tuna (2018) study the consequences of the UK Remuneration Code in financial institutions over the period 2006-2012. They find that the regulation lowered annual compensation but only because large amounts of pay are deferred.

The single figure reform proposes to reduce complexity and increase the level of transparency. The reform introduced a standardised format for pay disclosure, with the aim of putting CEO compensation under scrutiny and increasing pressure on firms to justify pay to their top managers. Gupta et al. (2016) provide some early evidence on the impact of the single figure reform in a UK sample of FTSE 100 companies over the period 2011-2013. Their results suggest that the new regulation makes little impact. Therefore, in our first hypothesis we expect to find no effect on the level of CEO pay after the introduction of the new regulation. Our first hypothesis is formulated as follows:

*H1: CEO total pay does not change after the introduction of the single figure reporting regulation in 2013.*

### *3.3 Effect of Compensation Reforms on Pay-performance*

Agency theory (Holmstrom, 1979) suggests that optimal contracting can alleviate the conflict between managers and shareholders, so positive pay-performance should be observed in large samples of public firms. Empirical evidence conducted in the US provides some support to the theory (e.g. Jensen and Murphy, 1990; Cohen et al., 2013). In the UK, there is both anecdotal and empirical evidence of a weak pay-performance relationship. For example, pay of CEOs of FTSE 350 companies rose 82% over a period of 13 years to 2014, while return on invested capital rose by less than 1% (The Guardian, 2016b). Gregg et al. (1993) investigate the relationship between CEO pay and performance of around 300 UK companies in the 1980s and early 1990s. They find a weak link between pay and firm performance. More recently, Ozkan (2007) and Ozkan (2011) find a positive, albeit weak, relationship between CEO pay and firm performance in a sample of UK firms over the period 1999-2005. Similarly, in the banking sector, Tian and Yang (2014) find that CEO pay relative to performance increased from 2005 to 2009 and argue that an underlying reason is the power of the CEO.

The literature examining pay-performance following regulatory changes document some mixed evidence. For example, Kleymonova and Tuna (2018) find that financial institutions' CEO pay was more sensitive to stock prices following the UK Remuneration Code requirements. However, Gupta et al. (2016) do not find an improvement in pay-performance sensitivity following the single figure reform. Therefore, we formulate our second hypothesis in the null form as follows:

*H2: CEO pay-performance sensitivity does not change after the introduction of the single figure reporting regulation in 2013.*

### *3.4 Effect of Compensation Reforms on CEO Pay Gap*

The pay gap between CEO and ordinary employees has been on the rise. In 2015, more than two-thirds of FTSE 100 CEOs were paid more than 100 times the average UK salary (The Guardian, 2017a). In the US, the average CEO of a large firm makes 271 times the wages of the average worker (Fortune, 2017). Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) in the US requires the disclosure of the CEO-to-median employee pay ratio starting January 1, 2017. Kelly and Seow (2016), in an experimental setting, find that disclosing the CEO-to-median employee ratio in the US has a significant impact on the perceived CEO pay fairness. However, there is no research on whether the increased disclosure has curbed CEO pay, given the recency of the disclosure regulations.

In the UK, there are proposals to fully provide the pay gap details (FT, 2018) but these have not been implemented yet. Furthermore, a proposal to cap CEO compensation not to exceed 20 times the wage of the lowest paid worker for government contractors was suggested but not implemented (The Guardian, 2017b). While setting a pay cap is unlikely to succeed as companies can outsource low pay jobs (to effectively circumvent the cap), increased transparency may force companies to reduce this gap.

The single figure reform could force firms to narrow the pay gap between CEO and ordinary employees. As pay disclosure becomes more standardised, firms would be more reluctant to increase CEO pay while employee wages stagnate. On the other hand, given the evidence that other regulatory compensation reforms appear to be boilerplate, there could be no impact on the CEO-to-employee pay ratio. Therefore, we formulate the following hypothesis in the null form:

*H3: CEO-to-employee pay ratio does not change after the introduction of the single figure reporting regulation in 2013.*

### 3.5 Early adoption

Prior to the single figure regulation, which came into force on October 1<sup>st</sup>, 2013, CEO pay disclosure was not comprehensive. However, some firms were more transparent in their disclosures and opted to disclose a single figure compensation. Furthermore, some firms may have decided to comply with the regulation early, given that information related to the regulation was known before the 2013 adoption date. Specifically, consultations on the matter were published in September 2011, followed by the announcement in January 2012 by the Secretary of State for Business of the incoming regulatory changes (FRC, 2012).

Firms have different reasons to adopt regulations early. For example, better board governance is associated with more disclosure of compensation practices (Laksmana, 2008). Furthermore, firms may opt to comply with regulations early to signal their better compensation practices. Evidence of this can be found in other contexts. For example, Denicolò (2008), using a theoretical approach, shows that firms that have a competitive advantage in the use of cleaner technology over-comply with environmental regulations in order to signal that compliance costs are low. Also, firms that chose to adopt International Financial Reporting Standards (IFRS) early, before it became mandatory, experienced positive liquidity and valuation effects (Daske et al., 2008), implying perceived benefits from the stakeholders' perspective.

On the other hand, early compliance may be a mechanism to signal to the market that the firm has effective governance mechanisms in place, when it is not true. For example, Elsbach et al. (1998) find that hospitals use anticipatory impression management tactics to fend off patients' challenges and to prevent these from escalating. Similarly, Addy et al. (2014) argue that concerns over image can lead boards to take actions which manage impressions of external stakeholders, so the boards can be seen as effective. Therefore, early adoption can be interpreted as window dressing with limited positive impact, although empirical evidence for this is scarce (Taylor et al., 2018).

Based on the above discussion, we are not certain about the effects of the reform on early adopters. We formulate the following hypotheses in the null form:

*H1a: CEO total pay of early adopters does not differ from that of late adopters after the introduction of the single figure reporting regulation in 2013.*

*H2a: CEO pay-performance sensitivity of early adopters does not differ from that of late adopters after the introduction of the single figure reporting regulation in 2013.*

*H3a: CEO-to-employee pay ratio of early adopters does not differ from that of late adopters after the introduction of the single figure reporting regulation in 2013.*

## **4. Sample Selection and Research Design**

### *4.1 Sample Selection*

Our sample consists of firms in the FTSE 100 index. We exclude financial and utility firms, as strict regulation in these two industries limits their comparability with firms in other industries.<sup>6</sup> Firms are included if they are listed on the FTSE 100 index at least once during the sample period, which covers 2010 to 2017. Companies were only required to start reporting the single figure in October 2013, so we collect data for the period 2010-2017, to ensure there are at least 3 years of data both before and after the new regulation. We do not include data after fiscal period 2017 to avoid the effect from the Corporate Governance Code (2018), which includes specific changes to executive compensation. For example, discretion is encouraged to override formulaic calculations of performance-related pay in the updated Code (FRC, 2018).

We also remove observations that have missing firm characteristics' data. The final sample consists of 583 firm year observations from 81 unique firms and 182 unique CEOs. Our data is comparable to Ozkan (2011) and Li and Young (2016) which both investigate compensation practices of FTSE 350 firms.

CEO total pay is calculated by summing up salary, bonus, LTIP pay, pension and other benefits. We hand collect CEO total pay and its components from annual reports of firms. Before the single regulation reform, these components are available in the annual report in different sections of the remuneration report. Following the reform, they can be found in a single integrated table in the remuneration report. Corporate governance data is collected from BoardEx. All other firm level data is from Bloomberg.

Given that firms can choose to comply with the regulation early or present total pay in a single table before the regulation, we also collect from the annual report the first year of adoption of the new regulation. Of the 583 observations, 298 observations (51%) belong to firms that adopt the regulation early and therefore present a single remuneration table before October 2013. The remaining 285 observations (49%) belong to firms that adopt the regulation in October 2013.

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<sup>6</sup> Financial firms are regulated by the Financial Conduct Authority (FCA) which issues regulations specifically for financial institutions, namely the Remuneration Code.

## 4.2 Research Design

To investigate the first hypothesis (*H1*) examining changes in the CEO pay level before and after the reform, we employ the following regression:

$$TOTAL\ PAY_{it} = \alpha + \beta_1 REG_{it} + \sum \beta_{2-12} Controls_{it} + \varepsilon_{it}, \quad (1)$$

Where  $TOTAL\ PAY_{it}$  is the natural logarithm of CEO total pay for firm  $i$  in year  $t$ , which includes salary, bonus, LTIP, benefits and pension pay;  $REG_{it}$  is a dummy variable that equals 1 if the observation is after October 2013 (when the regulation became effective), 0 otherwise. We run the above regression using both firm fixed-effect and CEO fixed-effect models.<sup>7</sup>

Our variable of interest in the above regression is  $REG$ , capturing the effect of the regulation on CEO pay. The control variables relate to firm and CEO characteristics. We first include an accounting performance measure,  $ROA$  since CEO total pay is higher in better performing firms (Tosi et al., 2000). We also include variables for firm size ( $SIZE$ ), leverage ( $LEV$ ), stock volatility ( $VOL$ ), and growth prospects ( $MTB$ ) to control for firm characteristics that can impact the level of CEO pay (Tosi et al., 2000; Cadman et al., 2010). We include board independence ( $INDEP$ ) as a governance variable to control for the effectiveness of the board (Abernethy et al., 2015; van Essen et al., 2015). We also include CEO-specific variables such as whether the CEO also holds the chairperson position ( $DUALITY$ ), the number of years as CEO ( $TENURE$ ), and the CEO education level ( $EDU$ ) to control for CEO characteristics and the strength of the CEO position within the firm's governance structure (e.g. Bebchuk and Fried, 2003; Abernethy et al., 2015; van Essen et al., 2015).  $EDU$  can serve as a proxy for the CEO's general skills and  $TENURE$  can be a proxy for the CEO's firm specific skills. The two variables examine the theoretical predictions in Dutta (2008) about the differential effect of firm specific and general CEO skills on pay-performance sensitivity. We also control for the level of ownership ( $OWN$ ) of the CEO as this might impact the information asymmetry between the board and the CEO (e.g. Cheung et al., 2005; Jaiswall and Bhattacharyya, 2016).<sup>8</sup> Finally, we control for the level of engagement with environmental, social and governance activities ( $ESG$ ) since prior work shows that corporate social responsibility activities are related to CEO compensation (Cai et al., 2011). We use the  $ESG$  combined score provided by Refinitiv

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<sup>7</sup> All regressions are conducted using Eviews. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). We also cross checked regressions results using R.

<sup>8</sup> We assign a value of zero for observations that have missing data on the education and ownership level of the CEO since this was not complete in the sample. Results excluding these two variables are similar to those reported in the tables.

which is a number between 0 and 100 and reflects the company's environmental, social and governance performance, commitment and effectiveness based on publicly reported information. All variables are defined in the appendix.

We employ firm and CEO fixed-effect regressions to address firm-specific and CEO-specific unobservable variables. As shown in later sections, our results generally hold for both fixed-effect models. Firm and CEO fixed-effect models are widely applied in the literature. Graham et al. (2012) provide evidence that firm and CEO fixed-effects explain a majority of the variation in executive compensation.

In *H1*, we expect no difference in the level of CEO pay following the reform. Therefore, we should observe an insignificant coefficient on the variable, *REG* ( $\beta_1$ ). This coefficient measures the difference in levels of CEO pay before and after the single figure reform that cannot be accounted for by differences in firm and CEO characteristics and firm (or CEO) fixed-effects.

Hypothesis 2 (*H2*) examines the pay-performance association around the adoption of the single figure reporting regulation. To test hypothesis 2, we employ the following panel equation (see, for example, Murphy, 1985; Aggarwal and Samwick, 1999; John et al., 2010; Graham et al., 2012):

$$TOTAL\ PAY_{it} = \alpha_1 + \beta_1 REG_{it} + \beta_2 ROA_{it} + \beta_3 REG_{it} * ROA_{it} + \sum \beta_{4-13} Controls_{it} + \varepsilon_{it}, \quad (2)$$

Where  $ROA_{it}$  is return on assets for firm  $i$  in year  $t$ , measured as net income divided by total assets; all other variables are as previously defined.

In the above regression, we include *ROA* as an accounting performance measure to capture the pay-performance association. As an alternative, we also use annual stock returns as the performance measure in untabulated results and find qualitatively similar results. The coefficient  $\beta_2$  measures pay-performance sensitivity of CEO's total pay. If pay-performance does not change after the reform (as expected in *H2*), we should observe an insignificant coefficient,  $\beta_3$ , on the interaction variable which measures the incremental difference in pay-performance sensitivity after the single figure reform.

Hypothesis 3 (*H3*) relates to the ratio of CEO pay to other employees. Similar to hypothesis 1, we test hypothesis 3 using the following equation:

$$PAY\ RATIO_{it} = \alpha + \beta_1 REG_{it} + \sum \beta_{2-12} Controls_{it} + \varepsilon_{it}, \quad (3)$$

Where  $PAY\ RATIO_{it}$  equals to CEO total pay divided by the average employee wages for firm  $i$  in year  $t$ ; all other variables are as previously defined.

We include the same control variables as those presented in equation (1). We also include firm or CEO fixed-effects in our regressions to account for unobservable variables that relate to firm and CEO characteristics. The regression examines how the pay gap ( $PAY\ RATIO$ ) changes after October 2013. If the new regulation does not improve the pay gap in line with  $H3$ , then we should observe an insignificant coefficient,  $\beta_1$  in the above equation.

Our remaining three hypotheses examine the impact of early adoption of the reform on CEO pay level ( $H1a$ ), pay-performance sensitivity ( $H2a$ ) and CEO pay ratio ( $H3a$ ). We first examine the determinants of early adoption through a logit regression of the form:

$$EARLY_{it} = \alpha_1 + \beta_1 ROA_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 VOL_{it} + \beta_5 MTB_{it} + \sum \beta_{6-8} Controls_{it} + \varepsilon_{it}, \quad (4)$$

Where  $EARLY_{it}$  is a dummy that equals 1 if the firm complied with the single pay reform early (before October, 1<sup>st</sup>, 2013), 0 otherwise; all other variables are as previously defined.

We include as independent variables firm characteristics (e.g.  $ROA$ , firm size, leverage and volatility) and as control some governance variables (e.g. board independence, CEO duality and tenure). We also include the level of CEO pay as well as the pay ratio.

To test the effect of early adoption on the CEO pay level ( $H1a$ ), we include an interaction term to equation (1) above. Specifically, we include the variable  $EARLY$ , which equals 1 if the observation belongs to a firm that adopted the single figure reporting regulation before October 2013, 0 otherwise, as follows:

$$TOTAL\ PAY_{it} = \alpha + \beta_1 REG_{it} + \beta_2 EARLY_{it} + \beta_3 REG_{it} * EARLY_{it} + \sum \beta_{4-14} Controls_{it} + \varepsilon_{it}, \quad (5)$$

Where all variables are as previously defined.

To test  $H2a$ , which examines the effect of early adoption on the CEO pay-performance sensitivity, we re-run equation (2) separately for firms that adopted the regulation before October 2013 ( $EARLY = 1$ ) and those that did not ( $EARLY = 0$ ).

Our final hypothesis examines the impact of early adoption on changes in the CEO-to-employee pay through the following regression:

$$PAY\ RATIO_{it} = \alpha + \beta_1 REG_{it} + \beta_2 EARLY_{it} + \beta_3 REG_{it} * EARLY_{it} + \sum \beta_{4-14} Controls_{it} + \varepsilon_{it}, \quad (6)$$

Where all variables are as previously defined.

### 4.3 Data and Descriptive Statistics

Table 1 presents the yearly and industrial distribution of the sample. The most represented industry in the sample as shown in Table 1 is Consumer Services (N=155) followed by Industrials (N=138), Consumer Goods (N=103), and Basic Materials (N=77). The remaining industries each constitute less than 10% of the sample. In terms of yearly distribution, the sample is evenly distributed across the years.

((Table 1))

Table 2 presents comparative descriptive statistics for CEO total pay (panel A) and *PAY RATIO* (Panel B) by industry and year. In Panel A, we document a discrepancy in total pay between industries, with, on average, the highest paid CEOs in the Health Care sector (mean = £6.4 million), followed by Consumer Goods (mean = £6 million), Oil & Gas (mean = £5.7 million) and Consumer Services (mean = £4.9 million). The lowest paid CEOs, on average, are in the Technology industry (mean = £2.5 million). In the last two columns in panel A, we find that CEO pay has increased over time from an average of £2.7 million in 2010 to £5.6 million in 2017.

Panel B presents similar evidence of a discrepancy in the CEO *PAY RATIO* between industries, with several CEOs paid more than 100 times the average employee. We find the highest pay gap in the Consumer Goods industry (136 times), followed by Consumer Services (127 times), Health Care (111 times). The lowest pay ratio is in the Oil & Gas industry (42 times).

In terms of the change over time, the average *PAY RATIO* actually increased from 97 in 2010 to 147 in 2014 then dropped over the following three years to 84 in year 2017, indicating perhaps an attempt by firms to reduce the pay gap following the 2013 regulation.

((Table 2))

The sample descriptive statistics are presented in Table 3. Average CEO total pay is over £4.7 million, a large proportion of this figure being variable pay (Bonus = £1.1 million and LTIP = £2.2 million); non-variable pay on the other hand is much smaller with salary = £0.9 million,



pension = £0.4 million and benefits = £0.1 million. These results reflect the general pay practice in the UK, where most pay is performance-related.

The mean for the *SIZE* variable in the sample is 9.15 (equivalent to £27 billion), while stock price volatility has a mean of 20%. The variable, return on assets (*ROA*), a measure of firms' accounting performance, is 7.15% on average. We also report that the ratio of CEO-to-employee pay (*PAY RATIO*) is 108 times on average. Overall, these characteristics are consistent with the profile of FTSE 100 firms.

On the corporate governance side, most CEOs do not hold the position as chairperson (mean *DUALITY* = 0.03), Independent directors also out-number executive directors (mean *INDEP* = 0.41).<sup>9</sup> Furthermore, CEO tenure is on average 5.67 years. Most CEOs have some level of university education (mean *EDU* = 0.72) and a significant level of share ownership (mean *OWN* = 24%). The sample firms also have high levels of social responsibility (mean *ESG* = 57). All variables are defined in the appendix.

((Table 3))

Table 4 presents the correlation between our main variables. We find that the performance measure, *ROA*, is positively correlated with *TOTAL PAY* and this is statistically significant at the 1% level (coefficient = 0.19). We find no significant correlation between *REG* and *TOTAL PAY* or *PAY RATIO*. This suggests that the single figure reform may have little impact on CEO pay. The variable *EARLY*, which represents adoption of the single pay reform before October 2013, is positively and significantly correlated with *PAY RATIO* (coefficient = 0.16), *SIZE* (coefficient = 0.17), *INDEP* (coefficient = 0.23), *TENURE* (coefficient = 0.13), and *EDU* (coefficient = 0.20).

((Table 4))

We also examine corporate governance variables and find that they have varied correlation with CEO pay. *INDEP*, *TENURE*, *EDU*, and *ESG* positively correlate with pay. This shows that corporate governance is an important determinant of CEO pay. Finally, the *PAY RATIO* is highly correlated with *TOTAL PAY* (coefficient = 0.39). This is because CEO pay varies largely every year, but employee wages are usually stable, so variation of the pay ratio stems

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<sup>9</sup> Median board independence in our sample is 75%; this value is used to determine the variable, *INDEP*, used as a control variable. See the definition in the appendix. A similar measure of independence was used in prior research such as Osma (2008).

mostly from variation of CEO pay. For this reason, regression results for CEO pay and pay ratios, as demonstrated in later sections, are largely the same.

## 5. Discussion of Results

### 5.1 Univariate Differences

We first investigate the differences in the pay structure over the periods before and after the reform. Table 5 presents univariate results of differences in CEO total pay, components of pay, and CEO to-employee *PAY RATIO*. In Panel A, most pay components show little difference post the reform. For example, mean and median difference for salary, bonus, benefits and pension are all insignificant. The only exception is LTIP, which shows a substantial and significant increase after the reform. On average, the CEO's LTIP is £0.9 million more than it is before the reform. Interestingly, total pay also increases by a similar amount after the reform (£0.8 million), with the mean difference significant at the 10% level. Firms seem to have adjusted the incentive structure and increased CEO's overall pay. Finally, there is a significant drop in the *PAY RATIO* after the reform but only for the median difference (difference = -17, significant at the 1% level). Overall, there is limited evidence that the reform has achieved its aim.

((Table 5))

Panels B and C present differences in CEO total pay as well as *PAY RATIO* in the subsamples of early adopters (who complied with the regulation before October 2013) and late adopters, respectively. In panel B, we find a significant increase in CEO total pay for firms that adopted the regulation before October 2013 (mean difference = £1.25 million, significant at the 10% level). The *PAY RATIO* also slightly decreased after the reform (median difference = -2, significant at the 5% level). In panel C, we find no significant difference in CEO total pay but find the *PAY RATIO* to have significantly decreased following the reform (mean (median) difference = -24 (-16), significant at the 5% (1%) level). Overall, there is limited evidence that the regulation had the intended impact on CEO pay but find some evidence of a reduction in *PAY RATIO*, especially for late adopters.

### 5.2 The Impact of Single Figure Pay Reform on CEO Pay Level

Table 6 examines the impact of the reform on total pay (*HI*), while controlling for other factors that can impact pay using equation (1). We employ both firm and CEO fixed-effect models which are commonly used in the compensation literature (e.g. Graham et al, 2012). As

discussed previously, fixed-effect models are used to capture the time-invariant omitted variables. Our results are generally consistent in both regressions.

((Table 6))

The variable of interest is *REG*, which captures the effect of the reform. The results confirm the univariate tests shown in Table 5. Specifically, CEO's total pay is not affected by the single figure reform as most coefficients on the *REG* variable are insignificant. These results hold with and without control variables, with firm fixed-effects (columns 1-3) as well as with CEO fixed-effects (columns 4-6). The only exception is in columns 4 and 5, where total pay appears to have increased following the reform (coefficient on *REG* = 0.28 and 0.26, both significant at the 5% level in columns 4 and 5, respectively), in line with the univariate tests. This is a rather disappointing finding given that the single figure reform was designed to mitigate the rising CEO pay.

The results also show that CEO pay is positively associated with *ROA*, indicating a positive pay-performance relationship. Pay is also positively associated with firm size and market-to-book ratio, consistent with findings in the literature (Aggarwal and Samwick, 1999). Furthermore, CEO pay is negatively associated with firm leverage (*LEV*) and volatility (*VOL*), consistent with the principal-agent theory (Holmstrom, 1979; Holmstrom and Milgrom, 1991). These results are consistent across both firm and CEO fixed-effect models and demonstrate that firm characteristics are important determinants of CEO pay. We also find that total pay increases in *TENURE* and CEO share ownership (*OWN*), while surprisingly being negatively related to *DUALITY*. This could be due to the increased scrutiny of firms that combine the role of chairperson and CEO in the sample. Overall, we find little changes in CEO pay (other than in the opposite effect) following the single pay reform of 2013, which supports the null expectation in hypothesis 1 (*H1*). Therefore, the intended objective of the reform was not met.

### 5.3 The Impact of Single Figure Pay Reform on Pay-performance Sensitivity

In this section, we provide evidence related to hypothesis 2. Rather than curbing total pay, the single pay reform could force firms to justify their CEO pay. Therefore, we examine whether firms increase the pay-performance relation to ensure CEOs' incentives are aligned with those of shareholders after the reform. We employ *ROA* to measure firm performance. To test changes in pay-performance, we run regressions using *TOTAL PAY* as the dependent variable, using the interaction term between the reform dummy and the performance variable to capture

the incremental effect of the single figure reform (equation 2). Our results are presented in Table 7. Similar to Table 6, both firm characteristics and corporate governance variables are included as controls. We find the coefficient on *ROA*, which captures the pay-performance relation, is positive and statistically significant for all specifications indicating that pay is largely associated with firm performance. The value of the coefficients is between 0.04 and 0.06 in the regressions, indicating that a 1% increase in *ROA* is associated with an increase in total pay around 4.08% ( $=e^{(1 \times 0.04)} - 1$ ) to 6.18% ( $=e^{(1 \times 0.06)} - 1$ ). While the pay-performance is somewhat low compared to findings conducted in the US (Gao & Li, 2015), where they find the coefficient for *ROA* is around 0.7, the result is consistent with studies in the UK. For example, using a sample of FTSE 350 firms, Ozkan (2011) finds the coefficient on performance is around 0.06.

((Table 7))

The interaction term *REG \* ROA* captures the incremental difference between pay-performance sensitivities before and after the single figure reform. The coefficients on the interaction terms are negative and significant, and the results hold for both CEO and firm fixed-effect models. While the single pay reform intends to strengthen the pay-performance relationship, the results suggest that pay-performance actually declines after the reform. To be precise, coefficients for the interaction term is -0.03 for all regressions. At a minimum, this suggests that after the single figure reform a 1% increase in *ROA* is only associated with a 3.05% ( $=e^{(1 \times [0.06 - 0.03])} - 1$ ) increase in *CEO total pay*, instead of a 6.18% increase in CEO pay before the reform. This is a 50% reduction in the pay-performance relation. We also find a significant relationship between pay and most control variables, other than *EDU* and *ESG*.

To sum up the main findings in this subsection, the accounting measure of firm performance (return on assets) is positively associated with CEO pay, i.e. there is a positive accounting pay-performance relationship. The single figure reform has a significant impact on firm's pay-performance relation, which does not support hypothesis 2. However, rather than strengthening the relationship or having no effect on this relationship, the reform actually makes pay-performance worse.

#### 5.4 The Impact of Single Figure Pay Reform on Pay Ratio

In this sub-section, we examine hypothesis 3 (*H3*) through equation (3). Table 8 presents results of the impact of the reform on the CEO-to-employee pay ratio. In Table 5 (univariate tests), we

find that the *PAY RATIO* has decreased following the reform, and this was more evident in the late adopters sample. However, when controlling for other factors (in Table 8), we do not find evidence that the reform affected the pay ratio. The coefficient of *REG* is insignificant in all regressions. As noted in our previous discussion, the pay ratio simply is a proxy for CEO's total pay. Since employee wages are relatively constant across time, variation of the *PAY RATIO* comes solely from the CEO's total pay. This is also evident from Table 4 where pay ratio and total pay are highly correlated. Overall, this result supports hypothesis 3 and suggests that improving pay disclosure alone is not effective at reducing the pay gap between CEO and ordinary employees.

((Table 8))

### 5.5 *The Effect of Early Adoption*

In this section, we examine the effect of early adoption of the regulation on CEO pay structure. Table 9 present results of the logistic regression (equation 4) examining the determinants of early compliance of the regulation. In column 1, firms that have a higher focus on environmental, social and governance factors adopt the reform early (coefficient on *ESG* is 0.01, significant at the 10% level). Firms that comply early with the regulation are those that have higher total pay, e.g. coefficient on *TOTAL PAY* is 0.27 and significant at the 1% level in column 3; more independent boards e.g. coefficient on *INDEP* is 0.67 and significant at the 1% level in column 2; higher CEO tenure e.g. coefficient on *TENURE* is 0.09 and significant at the 1% level in column 2; and higher CEO education e.g. coefficient on *EDU* is 0.29 and significant at the 1% level in column 2. There does not seem to be an effect from performance, leverage, volatility or growth (coefficients on *ROA*, *LEV*, *VOL*, and *MTB* are insignificant in all regressions). Overall, this set of results indicates that firms with higher pay and better monitoring may have been encouraged to adopt the regulation early, possibly as impression management.

((Table 9))

The final set of hypotheses *H1a*, *H2a*, and *H3a* relate to the effect of the reform on CEO total pay, the pay-performance relationship and CEO pay gap across firms that complied with the regulation early (early adopters) and those that did not. The first set of results (*H1a*, equation 5) are presented in Table 10. We find the interaction coefficient  $\beta_3$  to be insignificant in all columns, even when controlling for firm, CEO and governance characteristics. This suggests that changes in CEO total pay for early adopters does not differ from that of late adopters, in

line with hypothesis 1a. Specifically, neither group shows any decrease (or increase) in total pay. All control variables, other than *DUALITY*, are significant in at least one of the regressions.

((Table 10))

In Table 11, we examine the effect of the reform on the pay-performance relationship for early and late adopters, separately. Specifically, we present results from equation (2) separately for both groups. The results for the early adopters (*EARLY* = 1) show that the negative impact on pay-performance is somewhat less pronounced than that in the late adopters (*EARLY* = 0). Specifically, the interaction term *REG \* ROA* is negative and significant in the early adopters (coefficient = -0.03 and -0.02, both significant at the 1% level in columns 1 and 2, respectively) and somewhat smaller than in the late adopters (coefficient = -0.04, significant at the 1% level, in columns 3 and 4). However, these differences do not appear to be significant. Therefore, the impact of the reform on pay-performance does not appear to be different between firms that chose to comply with the single pay reform early and those that did not. This supports *H2a*.

((Table 11))

Our final test examines *H3a*, investigating the change in *PAY RATIO* following the reform in firms that adopt the single pay regulation early compared to those that do not. The results of equation (6), presented in Table 12, indicate that firms that adopt the regulation early do not have a significantly different *PAY RATIO* following the reform period. Specifically, the coefficient on *REG \* EARLY* is not significant in any of the regressions using firm or CEO fixed-effects. Therefore, we find support for *H3a*. Overall, we find no evidence that the reform has a negative effect on early adopters as compared to late adopters.

((Table 12))

### 5.6 Additional Tests

While the reform reduces pay-performance in general, it is possible that the reform has a different impact on different firms. Prior evidence points to the governance structure impacting the pay-performance relationship (e.g. Ozkan, 2011). Therefore, we divide our sample into two groups based on the strength of their corporate governance. We measure a corporate governance (*CG*) index by assigning a score to each firm based on the four governance measures: *INDEP*, *DUALITY*, *TENURE* and *OWN*. The detailed definition of the scoring system is presented in the appendix. The score can take a value of either 0, 1, 2, 3 or 4. The

higher the score, the stronger the firm's corporate governance. For example, a firm is assigned a score of 4, if the percentage of independent directors is higher than the median board independence in the sample (75%), the CEO is not the chairman/chairwoman, the CEO tenure is less than 4.3 years (sample median) and the CEO has share ownership in the firm. Firms that have corporate governance (CG) scores equal to 3 or 4 are classified in the high CG index group, whereas the low CG index group consists of firms with CG scores equal to 0, 1 or 2.

We re-run regressions from equation (2) in each of the subsamples; the results are presented in Table 13. We find as in the main tests that the coefficients on *ROA* are positive and significant in both high and low CG groups. As before, the coefficients on the interaction term are negative and these hold for both high and low CG group. But they are not significant for firms in the high CG group. This supports the view that the decline in pay-performance mostly stems from firms with weak corporate governance.

((Table 13))

We also run regressions for equations (1), (2) and (3) using each pay component as the dependent variable separately, e.g. bonus and LTIPs. These results are not reported as they are largely in line with results in Tables 6 and 7 and 8; that is, the total amount of bonus and LTIPs show no change before and after the reform. Pay-performance from bonus and LTIPs also drop after the reform.

Furthermore, due to the structure of the sample, which is considered a micro panel (number of firms in sample (*N*) exceeds time period of sample (*t*)), standard errors may be biased. We employ alternative methodologies to those presented for our main hypotheses to calculate robust standard errors. These results are not reported, but coefficient significance are exactly the same as those presented in Tables 6, 7 and 8. Additionally, we also used feasible generalised least square (FGLS) estimation, which is efficient for micro panel datasets, to rerun the analyses. The results are not reported but all coefficients are quantitatively similar and the significance remains the same.

## **6. Conclusion**

This paper examines the association between quantitative disclosure of compensation (through the so-called single figure regulation) and CEO pay structure. Specifically, we investigate CEO pay in terms of: 1) level of pay, 2) pay-performance, and 3) CEO-to-employee pay ratio. Prior studies (Gupta et al., 2016) with a limited sample find that the new regulation has little impact

on the level of total pay. Furthermore, pay-performance does not improve after the new regulation is introduced. Our findings are in line with Gupta et al. (2016) that the new regulation does not have any impact on CEO total pay. The regulation does not improve the CEO-to-employee pay ratio either, although the pay ratio has declined in recent years as seen in univariate results.

Using a more comprehensive data than Gupta et al. (2016), we provide additional evidence about the unintended consequences of the single figure regulation. Rather than improving the link between pay and firm performance, pay-performance actually declines after the introduction of the new regulation by around 50%. This is particularly obvious in firms with weak corporate governance. The unintended effect highlights the dilemma regulators now face. While directly regulating CEO pay has already proven to be ineffective at controlling pay rises (Dittmann et al, 2011, Murphy, 2013a, Kleymenova and Tuna, 2018), the moderate approach of increasing disclosure and the level of transparency is also problematic.

This evidence is in line with prior research on the effect of regulation in different contexts. Cieślak (2018) documents that CEO pay-performance sensitivity disappears in Sweden following the implementation of the European Recommendations regarding executive compensation in the period of 2010-2013. She argues that the egalitarian environment in Sweden may punish the star CEO and equalize the pay. In the banking sector, Allen et al. (2012) discuss how Basel III reforms have a negative impact on access to credit by riskier customers as well as consequences for employment and long-term growth.

We also focus on compliance with the single pay regulation presentation by examining the date when firms started presenting all elements of pay in a single table format. We find that CEO pay of early adopters is not significantly different from late adopters, after controlling for CEO and firm characteristics.

As with all research, our study has limitations. The sample is small and includes only firms that belong to the FTSE 100 index, which tend to be large. Therefore, the generalisability of the results may not hold. Furthermore, findings that relate to early adopters do not consider incentives for this early adoption. This group includes firms that complied with the regulation either near the actual compliance date or several years before, which may indicate other factors leading to the single figure reporting. We do not disentangle these which means our sample may suffer from self-selection bias.



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**Exhibit 1: New rules set out in Large and Medium-sized Companies and Groups (Accounts and Reports) (Amendment) Regulations 2013 (LMCGR 2013)**

LMCGR 2013 is the single figure regulation. The full regulation is available on UK government website at: <https://www.legislation.gov.uk/ukxi/2013/1981/contents/made>

<b>Rules directly related to pay</b>	Disclose a single figure remuneration table which presents salary, bonus, benefits, other pay, pensions and long-term incentive plan pay, as well as a single total figure for each person who has served as a director
	Disclose percentage changes in CEO pay and average percentage change in employee pay
	Present a statement of relative importance of spend on pay showing total expenditures on employees, distributions to shareholders and any significant distributions of profit or cashflow
	Disclose compensation actually paid to CEO as a percentage of maximum that could have been paid each year for each component of pay
<b>Other disclosure rules</b>	Director's report should include three parts: a chairman's statement, a forward-looking policy report and a report on current year's policy implementation (LMCGR 2013, paragraph 3 and paragraph 22(1))
	Disclose annual general meeting (AGM) voting results which approve the remuneration policy
	Disclose fees paid to compensation advisors (LMCGR 2013, paragraph 22 (c)(iv))

**Table 1: Sample distribution**

This table reports industrial and yearly distribution for the sample of UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The industrial distribution is based on the ICB classification used by FTSE.

<b>Industry</b>	<b>N</b>	<b>%</b>	<b>Year</b>	<b>N</b>	<b>%</b>
<b>Basic Materials</b>	77	13.21	<b>2010</b>	70	12.01
<b>Consumer Goods</b>	103	17.67	<b>2011</b>	73	12.52
<b>Consumer Services</b>	155	26.59	<b>2012</b>	73	12.52
<b>Health Care</b>	39	6.69	<b>2013</b>	77	13.21
<b>Industrials</b>	138	23.67	<b>2014</b>	77	13.21
<b>Oil &amp; Gas</b>	42	7.20	<b>2015</b>	79	13.55
<b>Technology</b>	14	2.40	<b>2016</b>	68	11.66
<b>Telecommunications</b>	15	2.57	<b>2017</b>	66	11.32
<b>Total</b>	<b>583</b>	<b>100</b>	<b>Total</b>	<b>583</b>	<b>100</b>



**Table 2: CEO compensation by industries and years**

This table reports CEO compensation by industries and years. The sample is UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The industrial distribution is based on the ICB classification used by FTSE. All variables are defined in the appendix.

**Panel A : CEO total pay (£000s)**

<b>Industry</b>	<b>Mean</b>	<b>Median</b>	<b>Year</b>	<b>Mean</b>	<b>Median</b>
<b>Basic Materials</b>	3,866	3,236	<b>2010</b>	3,619	2,686
<b>Consumer Goods</b>	5,969	4,178	<b>2011</b>	3,890	2,858
<b>Consumer Services</b>	4,910	2,789	<b>2012</b>	4,695	3,372
<b>Health Care</b>	6,417	5,239	<b>2013</b>	5,021	3,615
<b>Industrials</b>	3,765	2,483	<b>2014</b>	5,601	3,579
<b>Oil &amp; Gas</b>	5,653	4,278	<b>2015</b>	5,268	3,415
<b>Technology</b>	2,535	1,748	<b>2016</b>	4,397	2,696
<b>Telecommunications</b>	4,488	4,165	<b>2017</b>	5,615	3,029

**Panel B : PAY RATIO (times)**

<b>Industry</b>	<b>Mean</b>	<b>Median</b>	<b>Year</b>	<b>Mean</b>	<b>Median</b>
<b>Basic Materials</b>	93	52	<b>2010</b>	97	65
<b>Consumer Goods</b>	136	104	<b>2011</b>	99	66
<b>Consumer Services</b>	127	76	<b>2012</b>	110	70
<b>Health Care</b>	111	67	<b>2013</b>	118	86
<b>Industrials</b>	81	59	<b>2014</b>	147	84
<b>Oil &amp; Gas</b>	42	39	<b>2015</b>	117	82
<b>Technology</b>	38	32	<b>2016</b>	105	55
<b>Telecommunications</b>	79	73	<b>2017</b>	84	60

**Table 3: Descriptive statistics**

This table reports descriptive statistics for the sample of UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. All variables are winsorized at the 1% level. All variables (other than components of pay) are defined in the appendix.

<b>Variable</b>	<b>Mean</b>	<b>Q1</b>	<b>Med.</b>	<b>Q3</b>	<b>Std.</b>
<b><u>Compensation Variables:</u></b>					
<i>CEO total Pay (£000s)</i>	4,775	1,865	3,206	5,807	5,870
<i>Salary (£000s)</i>	927	687	865	1,083	442
<i>Bonus (£000s)</i>	1,149	504	957	1,535	1,087
<i>LTIP (£000s)</i>	2,200	0	699	2,504	5,098
<i>Benefits (£000s)</i>	115	21	39	88	308
<i>Pension (£000s)</i>	384	103	224	339	1,006
<b><u>Dependent Variables:</u></b>					
<i>TOTAL PAY (Ln)</i>	8.07	7.53	8.07	8.67	0.88
<i>PAY RATIO(times)</i>	108	31	65	113	176
<b><u>Independent Variables:</u></b>					
<i>REG (dummy)</i>	0.59	0.00	1.00	1.00	0.49
<i>EARLY (dummy)</i>	0.51	0.00	1.00	1.00	0.50
<b><u>Control Variables:</u></b>					
<i>ROA (%)</i>	7.15	3.91	6.52	10.02	6.42
<i>SIZE (Ln)</i>	9.15	8.12	8.88	10.05	1.32
<i>LEV (%)</i>	20.28	12.72	20.07	26.85	11.99
<i>VOL (%)</i>	28.71	21.24	26.64	34.28	9.73
<i>MTB (times)</i>	3.85	1.63	2.77	4.82	4.43
<i>INDEP (dummy)</i>	0.41	0.00	0.00	1.00	0.49
<i>DUALITY (dummy)</i>	0.03	0.00	0.00	0.00	0.16
<i>TENURE (years)</i>	5.67	2.20	4.30	7.40	5.27
<i>EDU (dummy)</i>	0.72	0.00	0.00	2.00	1.00
<i>OWN (%)</i>	0.24	0.00	0.04	0.14	0.69
<i>ESG (score)</i>	56.75	45.74	55.75	68.87	16.73

**Table 4: Correlation matrix**

This table presents the Pearson correlation coefficients for the sample of 583 observations from UK FTSE 100 non-financial and non-utility firms during 2010-2017. Typeface is bold if it is significant at the 1% level. All variables are defined in the appendix.

<b>Variable</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
<i>(1) TOTAL PAY</i>	1.00														
<i>(2) PAY RATIO</i>	<b>0.39</b>	1.00													
<i>(3) REG</i>	0.02	-0.05	1.00												
<i>(4) EARLY</i>	<b>0.19</b>	<b>0.16</b>	-0.02	1.00											
<i>(5) ROA</i>	<b>0.19</b>	<b>0.17</b>	-0.11	0.08	1.00										
<i>(6) SIZE</i>	<b>0.37</b>	0.02	0.08	<b>0.17</b>	<b>-0.24</b>	1.00									
<i>(7) LEV</i>	-0.05	<b>-0.14</b>	0.11	-0.04	-0.09	0.04	1.00								
<i>(8) VOL</i>	<b>-0.30</b>	-0.11	<b>-0.15</b>	-0.07	<b>-0.22</b>	<b>-0.16</b>	<b>-0.14</b>	1.00							
<i>(9) MTB</i>	<b>0.15</b>	0.08	0.01	0.06	<b>0.41</b>	<b>-0.15</b>	<b>0.20</b>	<b>-0.18</b>	1.00						
<i>(10) INDEP</i>	<b>0.27</b>	0.08	<b>0.16</b>	<b>0.23</b>	0.01	<b>0.43</b>	0.06	<b>-0.12</b>	0.02	1.00					
<i>(11) DUALITY</i>	0.04	0.00	0.01	-0.01	-0.03	0.02	0.02	0.10	-0.02	0.11	1.00				
<i>(12) TENURE</i>	<b>0.25</b>	<b>0.29</b>	-0.04	<b>0.13</b>	-0.02	-0.06	-0.03	0.07	0.06	-0.05	0.06	1.00			
<i>(13) EDU</i>	<b>0.15</b>	0.03	-0.05	<b>0.20</b>	-0.04	<b>0.11</b>	<b>-0.13</b>	<b>-0.21</b>	-0.02	<b>0.20</b>	0.02	0.03	1.00		
<i>(14) OWN</i>	0.12	0.11	0.01	0.02	0.02	<b>-0.16</b>	-0.03	0.08	0.04	0.09	<b>0.58</b>	<b>0.29</b>	0.09	1.00	
<i>(15) ESG</i>	<b>0.23</b>	<b>0.13</b>	0.11	0.11	0.04	<b>0.16</b>	-0.09	<b>-0.21</b>	0.11	0.11	-0.10	0.04	0.10	-0.06	1.00

**Table 5: Univariate tests**

This table reports the univariate tests comparing the CEO pay before and after the UK “single figure pay” reform (2013 Oct). The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The number of observations for *PAY RATIO* is 557 due to data availability for non-CEO pay. Panel A is for the full sample. Panel B presents results for the subsample which adopted the reforms before October 2013, while the late adopters sample is shown in panel C. A t-test is used to compare the mean while a Wilcoxon test is used to compare the median. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level. *PAY RATIO* is defined in the appendix.

**Panel A: Full sample**

Variable	Prior to Oct 2013		After Oct 2013		Difference in Mean (3)-(1)	Difference in Median (4)-(2)
	Mean (1)	Median (2)	Mean (3)	Median (4)		
<i>CEO total pay (£000s)</i>	4,282	3,106	5,119	3,236	837*	130
<i>Salary (£000s)</i>	940	853	918	876	-22	23
<i>Bonus (£000s)</i>	1,144	919	1,152	980	8	61
<i>LTIP (£000s)</i>	1,654	579	2,581	820	927**	241*
<i>Benefits (£000s)</i>	99	40	126	40	27	0
<i>Pension (£000s)</i>	444	236	342	222	-102	-14
<i>PAY RATIO (times)</i>	118	70	101	53	-17	-17***

**Panel B: Early adopters**

Variable	Prior to Oct 2013		After Oct 2013		Difference in Mean (3)-(1)	Difference in Median (4)-(2)
	Mean (1)	Median (2)	Mean (3)	Median (4)		
<i>CEO total pay (£000s)</i>	4,620	3,844	5,871	3,755	1,251*	-89
<i>PAY RATIO (times)</i>	141	73	133	71	-8	-2**

**Panel C: Late adopters**

Variable	Prior to Oct 2013		After Oct 2013		Difference in Mean (3)-(1)	Difference in Median (4)-(2)
	Mean (1)	Median (2)	Mean (3)	Median (4)		
<i>CEO total pay (£000s)</i>	3,903	2,677	4,372	2,733	469	56
<i>PAY RATIO (times)</i>	95	66	71	50	-24**	-16***

**Table 6: The impact of “single figure pay” reform on CEO total pay**

This table reports the estimation of the impact of UK “single figure pay” reform on CEO total pay (*HI*) through the following regression:

$$TOTAL\ PAY_{it} = \alpha + \beta_1 REG_{it} + \sum \beta_{2-1} Controls_{it} + \varepsilon_{it} \quad (1)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The dependent variable is *TOTAL PAY*. Firm fixed-effect and CEO fixed-effect results are presented in columns (1) to (3) and (4) to (6), respectively. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
<i>REG</i>	0.05 (0.53)	-0.03 (-0.34)	0.02 (0.28)	0.28** (2.55)	0.26** (2.52)	0.02 (0.20)
<i>ROA</i>		0.02*** (3.56)	0.02*** (3.78)		0.02*** (3.93)	0.02*** (4.60)
<i>SIZE</i>		0.41*** (5.07)	0.30*** (3.27)		0.06 (0.43)	0.11 (0.88)
<i>LEV</i>		-0.01** (-3.24)	-0.01*** (-3.15)		-0.01** (-2.56)	-0.01*** (-2.70)
<i>VOL</i>		-0.01*** (-3.37)	-0.01*** (-3.41)		-0.01** (-2.20)	-0.01** (-3.33)
<i>MTB</i>		0.02*** (3.03)	0.02*** (3.00)		0.01 (1.59)	0.01 (1.40)
<i>INDEP</i>			-0.10 (-1.50)			-0.04 (-0.40)
<i>DUALITY</i>			-0.31** (-2.26)			0.06 (0.23)
<i>TENURE</i>			0.05*** (5.93)			0.08*** (4.53)
<i>EDU</i>			-0.03 (-0.69)			0.23** (2.38)
<i>OWN</i>			0.18*** (4.17)			0.09** (2.44)
<i>ESG</i>			0.00 (0.57)			0.00 (0.41)
<i>Constant</i>	8.05*** (130.13)	4.63*** (5.50)	5.35*** (5.74)	7.91*** (97.78)	7.61*** (5.80)	6.79*** (6.17)
Firm fixed-effect	Yes	Yes	Yes	No	No	No
CEO fixed-effect	No	No	No	Yes	Yes	Yes
N	583	583	583	583	583	583
Adjusted R <sup>2</sup>	0.48	0.53	0.58	0.62	0.66	0.68



**Table 7: The impact of “single figure pay” reform on CEO pay-performance sensitivity**

This table reports the estimation of the impact of UK “single figure pay” reform on CEO pay-performance sensitivity (*H2*). The table presents coefficients (p-values) from regressions of the form:

$$TOTAL\ PAY_{it} = \alpha_1 + \beta_1 REG_{it} + \beta_2 ROA_{it} + \beta_3 REG_{it} * ROA_{it} + \sum \beta_{4-13} Controls_{it} + \varepsilon_{it} \quad (2)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The dependent variable is *TOTAL PAY*. Firm fixed-effect and CEO fixed-effect results are presented in columns (1) to (3) and (4) to (6), respectively. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
<i>REG</i>	0.31*** (2.72)	0.18* (1.94)	0.24** (2.52)	0.55*** (4.15)	0.48*** (3.71)	0.21* (1.85)
<i>ROA</i>	0.05*** (11.78)	0.04*** (9.92)	0.04*** (6.74)	0.06*** (7.02)	0.05*** (6.25)	0.04*** (5.02)
<i>REG * ROA</i>	-0.03*** (-3.73)	-0.03*** (-4.78)	-0.03*** (-4.06)	-0.03*** (-3.98)	-0.03*** (-3.93)	-0.03*** (-3.33)
<i>SIZE</i>		0.46*** (5.22)	0.34*** (3.58)		0.08 (0.54)	0.12 (1.04)
<i>LEV</i>		-0.01*** (-2.72)	-0.01** (-2.56)		-0.01** (-2.41)	-0.01** (-2.56)
<i>VOL</i>		-0.01*** (-3.92)	-0.01*** (-3.96)		-0.01** (-2.48)	-0.01*** (-3.51)
<i>MTB</i>		0.02*** (3.13)	0.01*** (3.06)		0.01* (1.69)	0.01 (1.49)
<i>INDEP</i>			-0.11* (-1.68)			-0.03 (-0.33)
<i>DUALITY</i>			-0.28** (-2.07)			0.06 (0.21)
<i>TENURE</i>			0.05*** (6.19)			0.08*** (4.51)
<i>EDU</i>			-0.01 (-0.32)			0.21** (2.00)
<i>OWN</i>			0.16*** (3.83)			0.08** (2.03)
<i>ESG</i>			0.00 (0.57)			0.00 (0.30)
<i>Constant</i>	7.62*** (88.56)	4.03*** (4.62)	4.75*** (4.94)	7.47*** (62.79)	7.29*** (6.07)	6.52*** (6.74)
Firm fixed-effect	Yes	Yes	Yes	No	No	No
CEO fixed-effect	No	No	No	Yes	Yes	Yes
N	583	583	583	583	583	583

**Table 8: The impact of “single figure pay” reform on CEO-to-employee pay ratio**

This table reports the estimation of the impact of UK “single figure pay” reform on CEO-to-employee pay ratio (*H3*). The table presents coefficients (p-values) from regressions of the form:

$$PAY\ RATIO_{it} = \alpha + \beta_1 REG_{it} + \sum \beta_{2-12} Controls_{it} + \varepsilon_{it} \quad (3)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 557 from 81 unique firms and 178 unique CEOs. The sample size is smaller due to data availability of non-CEO pay. The dependent variable is *PAY RATIO*. Firm fixed-effect and CEO fixed-effect results are presented in columns (1) to (3) and (4) to (6), respectively. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
<i>REG</i>	-21.45 (-0.96)	-11.21 (-0.60)	-1.12 (-0.06)	13.08 (0.71)	20.08 (1.12)	12.83 (0.46)
<i>ROA</i>		2.31* (1.65)	2.20* (1.73)		3.86** (2.37)	3.71*** (2.66)
<i>SIZE</i>		-51.47 (-1.21)	-61.72 (-1.57)		-30.91 (-1.04)	-31.07 (-0.88)
<i>LEV</i>		0.14 (0.22)	0.24 (0.38)		-0.34 (-0.43)	-0.23 (-0.25)
<i>VOL</i>		-0.96* (-1.72)	-0.69 (-1.27)		-0.21 (-0.69)	-0.33 (-0.77)
<i>MTB</i>		1.71*** (3.06)	1.42** (2.35)		2.25** (2.00)	2.00* (1.73)
<i>INDEP</i>			-44.94* (-1.95)			-25.40 (-0.58)
<i>DUALITY</i>			-17.46 (-0.50)			27.592 (0.33)
<i>TENURE</i>			3.11* (1.81)			0.87 (0.14)
<i>EDU</i>			8.12 (1.46)			1.98 (0.27)
<i>OWN</i>			30.87** (2.01)			44.11** (2.34)
<i>ESG</i>			-0.07 (-0.18)			0.25 (0.59)
<i>Constant</i>	120.93*** (16.05)	586.39 (1.42)	657.55* (1.66)	100.41*** (8.22)	354.95 (1.24)	342.13 (1.01)
Firm fixed-effect	Yes	Yes	Yes	No	No	No
CEO fixed-effect	No	No	No	Yes	Yes	Yes
N	557	557	557	557	557	557



**Table 9: The determinants of early adoption**

This table reports the estimation of the determinants of early adoption of UK “single figure pay” reform. The table presents coefficients (p-values) from regressions of the form:

$$EARLY_{it} = \alpha_1 + \beta_1 TOTAL\ PAY_{it} \text{ or } PAY\ RATIO_{it} + \sum \beta_{2-12} Controls_{it} + \varepsilon_{it} \quad (4)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs for columns (1) to (4). The sample is 557 observations for column (5) to (6), due to data availability for non-CEO pay. The dependent variable is *EARLY* which equals to one if firms adopted the “single figure pay” policy before October 2013, 0 otherwise. A logit regression is employed. Z-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
<i>TOTAL PAY</i>			0.27** (2.22)	0.10 (0.76)		
<i>PAY RATIO</i>					0.01*** (3.57)	0.02** (2.52)
<i>ROA</i>		0.02 (1.26)	0.01 (0.39)	0.02 (1.06)	0.01 (0.89)	0.02 (1.18)
<i>SIZE</i>		0.15* (1.70)	0.16* (1.91)	0.13 (1.28)	0.24*** (2.99)	0.18** (1.98)
<i>LEV</i>		-0.00 (-0.61)	-0.01 (-0.64)	-0.01 (-0.56)	-0.00 (-0.10)	0.01 (-0.01)
<i>VOL</i>		-0.01 (-0.56)	-0.01 (-0.94)	-0.01 (-0.44)	-0.01 (-0.68)	-0.00 (-0.16)
<i>MTB</i>		0.02 (0.93)	0.03 (1.23)	0.02 (0.86)	0.02 (0.92)	0.01 (0.55)
<i>INDEP</i>		0.67*** (3.11)		0.66*** (3.06)		0.58*** (2.59)
<i>DUALITY</i>		-0.08 (-0.02)		-0.07 (-0.11)		-1.03 (-1.21)
<i>TENURE</i>		0.09*** (4.47)		0.08*** (4.17)		0.07*** (3.26)
<i>EDU</i>		0.29*** (2.85)		0.29*** (2.83)		0.29*** (2.77)
<i>OWN</i>		-0.23 (-1.46)		-0.25 (-1.53)		-0.05 (-0.30)
<i>ESG</i>	0.01* (1.93)	0.00 (0.71)		0.00 (0.63)		0.00 (0.39)
<i>Constant</i>	0.35 (0.93)	-1.53 (-1.31)	-2.49** (-2.12)	-2.05 (-1.53)	-1.32 (-1.32)	-1.80 (-1.49)
Industry effect	Yes	Yes	Yes	Yes	Yes	Yes

N	583	583	583	583	557	557
McFadden R <sup>2</sup>	0.06	0.13	0.09	0.13	0.11	0.15

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**Table 10: The impact of early adoption on CEO total pay**

This table reports the estimation of the joint impact of UK “single figure pay” reform and early adoption on CEO annual pay (*H1a*). The table presents coefficients (p-values) from regressions of the form:

$$TOTAL\ PAY_{it} = \alpha + \beta_1 REG_{it} + \beta_2 EARLY_{it} + \beta_3 REG_{it} * EARLY_{it} + \sum \beta_{4-14} Controls_{it} + \varepsilon_{it} \quad (5)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The dependent variable is *TOTAL PAY*. Firm fixed-effect and CEO fixed-effect results are presented in columns (1) to (3) and (4) to (6), respectively. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
<i>REG</i>	0.07 (0.73)	0.02 (0.27)	-0.01 (-0.13)	0.27** (2.04)	0.21** (2.44)	0.02 (0.27)
<i>EARLY</i>	0.33*** (11.78)	0.19*** (4.07)	0.07** (2.57)	0.98* (1.66)	1.35** (1.98)	0.40 (1.08)
<i>REG * EARLY</i>	-0.07 (-0.68)	-0.06 (-0.64)	-0.05 (-0.42)	0.06 (0.80)	0.05 (0.49)	0.01 (0.14)
<i>ROA</i>		0.03*** (5.83)	0.03*** (6.76)		0.02*** (3.38)	0.02*** (3.72)
<i>SIZE</i>		0.26*** (12.24)	0.27*** (13.60)		0.29* (1.65)	0.17 (1.11)
<i>LEV</i>		-0.01*** (-2.89)	-0.00*** (-2.76)		-0.02** (-2.42)	-0.02** (-2.31)
<i>VOL</i>		-0.01*** (-5.83)	-0.01*** (-4.14)		-0.01** (-2.28)	-0.01*** (-2.86)
<i>MTB</i>		0.02*** (4.62)	0.01*** (3.03)		0.01 (1.45)	0.01 (1.78)
<i>INDEP</i>			0.11** (1.99)			-0.03 (-0.26)
<i>DUALITY</i>			-0.08 (-0.48)			0.04 (0.12)
<i>TENURE</i>			0.04*** (12.54)			0.08*** (3.58)
<i>EDU</i>			0.02 (0.67)			0.23** (1.95)
<i>OWN</i>			0.17*** (3.02)			0.09** (2.06)
<i>ESG</i>			0.01*** (2.79)			0.00 (0.34)
<i>Constant</i>	7.77*** (119.20)	5.70*** (23.77)	5.03*** (20.21)	7.40*** (22.95)	4.92** (2.68)	6.07*** (4.06)
Firm fixed-effect	Yes	Yes	Yes	No	No	No
CEO fixed-effect	No	No	No	Yes	Yes	Yes
N	583	583	583	583	583	583

Adjusted R<sup>2</sup>

0.51

0.56

0.57

0.62

0.66

0.67

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**Table 11: The impact of early adoption on CEO pay-performance sensitivity**

This table reports the estimation of the impact of UK “single figure pay” reform and early adoption on CEO pay-performance sensitivity (*H2a*). The table presents coefficients (p-values) from regressions of the form:

$$TOTAL\ PAY_{it} = \alpha_1 + \beta_1 REG_{it} + \beta_2 ROA_{it} + \beta_3 REG_{it} * ROA_{it} + \sum \beta_{4-13} Controls_{it} + \varepsilon_{it} \quad (2)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The dependent variable is *TOTAL PAY*. Columns (1) and (2) are for the firms which adopted the “single figure pay” policy before October 2013. Columns (3) and (4) are for the firms which did not adopt the “single figure pay” policy before October 2013. Firm fixed-effect models are employed. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variables	(1)	(2)	(3)	(4)
	Early adopters		Late adopters	
<i>REG</i>	0.15 (1.33)	0.16* (1.74)	0.23** (2.38)	0.34*** (2.71)
<i>ROA</i>	0.04*** (6.10)	0.04*** (4.13)	0.05*** (4.17)	0.06*** (3.56)
<i>REG * ROA</i>	-0.03*** (-4.74)	-0.02*** (-3.37)	-0.04*** (-3.37)	-0.04*** (-3.05)
<i>SIZE</i>	0.45*** (5.23)	0.34*** (4.40)	0.56** (2.50)	0.49** (2.06)
<i>LEV</i>	-0.00 (-0.36)	-0.01 (-0.77)	-0.02*** (-5.07)	-0.01*** (-3.21)
<i>VOL</i>	-0.02*** (-3.75)	-0.02*** (-3.36)	-0.01** (-1.98)	-0.01** (-2.26)
<i>MTB</i>	0.04*** (5.08)	0.03*** (3.87)	0.00 (0.78)	0.00 (0.69)
<i>INDEP</i>		-0.01 (-0.12)		-0.21*** (-3.35)
<i>DUALITY</i>		-0.67*** (-4.36)		0.45** (2.40)
<i>TENURE</i>		0.05*** (6.07)		0.06*** (4.13)
<i>EDU</i>		-0.00 (-0.08)		0.03 (0.22)
<i>OWN</i>		0.24*** (4.43)		-0.02 (-0.20)
<i>ESG</i>		0.00 (0.85)		0.00 (0.28)
<i>Constant</i>	4.14*** (5.10)	4.83*** (6.46)	3.17 (1.55)	3.30 (1.51)
Firm fixed-effect	Yes	Yes	Yes	Yes
N	298	298	285	285
Adjusted R <sup>2</sup>	0.56	0.61	0.50	0.53

**Table 12: The impact of early adoption on CEO-to-employee pay ratio**

This table reports the estimation of the joint impact of UK “single figure pay” reform and early adoption on CEO-to-employee pay ratio (*H3a*). The table presents coefficients (p-values) from regressions of the form:

$$PAY\ RATIO_{it} = \alpha + \beta_1 REG_{it} + \beta_2 EARLY_{it} + \beta_3 REG_{it} * EARLY_{it} + \sum \beta_{4-14} Controls_{it} + \varepsilon_{it} \quad (6)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observation is 557 from 81 unique firms and 178 unique CEOs. The sample size is smaller due to data availability of non-CEO pay. The dependent variable is *PAY RATIO*. Firm fixed-effect and CEO fixed-effect results are presented in columns (1) to (3) and (4) to (6), respectively. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firm or CEO (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

<b>Variables</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
<i>REG</i>	-19.86 (-1.36)	-17.45 (-0.48)	-24.40 (-1.60)	22.62*** (3.26)	34.16*** (4.84)	19.60 (0.93)
<i>EARLY</i>	48.26*** (3.75)	38.84** (2.37)	14.39 (1.28)	54.58*** (3.51)	-77.17 (-1.22)	-197.93*** (-3.31)
<i>REG * EARLY</i>	12.90 (0.55)	17.00 (0.68)	23.54 (0.96)	-16.94 (-0.67)	-25.56 (-0.77)	-31.71 (-1.17)
<i>ROA</i>		2.65 (1.40)	2.76 (1.33)		4.20** (2.46)	4.26*** (2.80)
<i>SIZE</i>		6.51 (1.06)	8.14 (1.18)		-47.26 (-1.16)	-68.32** (-2.29)
<i>LEV</i>		-2.24*** (-4.63)	-2.20*** (-4.33)		-0.08 (-0.09)	0.29 (0.29)
<i>VOL</i>		-1.09* (-1.77)	-1.56*** (-2.82)		-0.12 (-0.34)	-0.33 (-0.81)
<i>MTB</i>		1.75* (1.70)	0.47 (0.37)		2.22* (1.89)	1.76 (1.51)
<i>INDEP</i>			20.08 (1.02)			-27.70 (-0.65)
<i>DUALITY</i>			-27.19 (-0.68)			46.02 (0.53)
<i>TENURE</i>			10.13*** (5.24)			5.46 (0.82)
<i>EDU</i>			-9.87** (-2.05)			4.60 (0.68)
<i>OWN</i>			10.34 (0.75)			45.46** (2.35)
<i>ESG</i>			0.50* (1.73)			0.33 (0.75)
<i>Constant</i>	76.83*** (3.26)	71.81 (0.85)	11.76 (0.11)	72.40*** (6.06)	531.45 (1.28)	741.12*** (2.60)
Firm fixed-effect	Yes	Yes	Yes	No	No	No
CEO fixed-effect	No	No	No	Yes	Yes	Yes
N	557	557	557	557	557	557

**Table 13: The impact of “single figure pay” reform on CEO pay- performance sensitivity:  
Subsamples based on corporate governance index**

This table reports the estimation of the impact of UK “single figure pay” reform on CEO pay-performance sensitivity, by using corporate governance index as a subsampling criteria. The results presented are coefficients (p-values) from regressions of the form:

$$TOTAL\ PAY_{it} = \alpha_1 + \beta_1 REG_{it} + \beta_2 ROA_{it} + \beta_3 REG_{it} * ROA_{it} + \sum \beta_{4-7} Controls_{it} + \varepsilon_{it} \quad (2)$$

The sample includes UK FTSE 100 non-financial and non-utility firms from 2010-2017. Total number of observations is 583 from 81 unique firms and 182 unique CEOs. The dependent variable is *TOTAL PAY*. High CG index group is for observations with CG index =3 and 4; while low CG index group is for observations with CG index =0, 1 and 2. Firm fixed-effect models are employed. P-values are based on robust standard errors adjusted for heteroscedasticity and clustered by firms (White cross-section). T-statistics are reported in parentheses. The asterisks \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels, respectively. All variables are winsorized at the 1% level and defined in the appendix.

Variable	(1)	(2)	(3)	(4)
	High CG index group		Low CG index group	
<i>REG</i>	0.27** (2.34)	0.22** (2.06)	0.38** (2.50)	0.17 (0.85)
<i>ROA</i>	0.03*** (4.78)	0.03*** (3.98)	0.07*** (4.44)	0.04** (2.05)
<i>REG * ROA</i>	-0.01 (-1.06)	-0.02 (-1.46)	-0.03** (-2.39)	-0.03* (-1.69)
<i>SIZE</i>		0.54*** (6.27)		0.58*** (2.73)
<i>LEV</i>		-0.01 (-1.37)		-0.02*** (-4.01)
<i>VOL</i>		-0.00 (-0.76)		-0.01*** (-2.95)
<i>MTB</i>		0.01** (2.08)		0.08*** (4.32)
<i>Constant</i>	7.73*** (90.13)	2.93** (4.03)	7.48*** (46.19)	3.24* (1.78)
Firm fixed-effect	Yes	Yes	Yes	Yes
N	340	340	243	243
Adjusted R <sup>2</sup>	0.58	0.59	0.50	0.54

## Appendix: Variable Definitions

Variable	Definition	Source
<i>TOTAL PAY</i>	Natural logarithm of CEO total pay, measured as sum of salary, benefits, pension, bonus and LTIP (long-term incentives plan pay)	Annual report
<i>PAY RATIO</i>	CEO total pay divided by average non-CEO pay [(Total personal expenses) / (No. of employee -1 )]	Annual report/Bloomberg
<i>REG</i>	Dummy variable equal to 1 if the observation is on or after 1 <sup>st</sup> October 2013, 0 otherwise	Annual report
<i>EARLY</i>	Dummy variable equal to 1 if the observation belongs to a firm that adopted the single figure reporting before 1 <sup>st</sup> October 2013, 0 otherwise	Annual report
<i>ROA</i>	Net income divided by total assets	Bloomberg
<i>SIZE</i>	Natural logarithm of the firm's total assets	Bloomberg
<i>LEV</i>	Annual long-term debt divided by total assets	Bloomberg
<i>VOL</i>	The standard deviation of a firm's daily stock return during the fiscal period	Bloomberg
<i>MTB</i>	Market value of equity scaled by book value of equity	Bloomberg
<i>INDEP</i>	Dummy variable which equals 1 if more than 75% (median in sample) of directors on the board are independent, 0 otherwise	BoardEx
<i>DUALITY</i>	Dummy variable which equals 1 if the CEO also holds the position of chairman or chairwoman, 0 otherwise	BoardEx
<i>TENURE</i>	Number of years the CEO has held this position	BoardEx
<i>EDU</i>	Dummy variable for CEO education level; 1 (Bachelor), 2 (Masters), 3 (PhD), 0 otherwise	BoardEx
<i>OWN</i>	CEO's share ownership as a percentage of firm's total shares	
<i>ESG</i>	Environmental, Social and Governance combined score as a percentage from 0 (low) to 100 (high)	Refinitiv
<i>CG</i>	Corporate governance index measured as the sum of the score for Board independence, the score for CEO duality, the score for CEO tenure and the score for CEO ownership (possible values, 0, 1, 2, 3 and 4). The score for Board independence = 1 if board independence is more than 75% (sample median), 0 zero. The score for CEO duality = 1 if CEO is not chairman/chairwoman, 0 otherwise. The score for CEO tenure = 1 if CEO tenure is less than 4.3 years (sample median), 0 otherwise. The score for CEO ownership = 1 if CEO has any share ownership, 0 otherwise	