
Original Article

The Corporate Gini Index (CGI) determinants and advantages: Lessons from a multinational retail company case study

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ABSTRACT This article identifies and compares the determinants of CEO compensation to median employee earnings with those of the Corporate Gini Index (CGI). Using a multinational retail company, the article posits that the CGI is an advantageous corporate alternative pay inequality measure that concerns CEO pay multiples to median employee earnings, which regulators should consider using and disclosing in proxy statements. Although CGI and the official measure of multiples of CEO pay to median employee earnings share some of the challenges, the advantages of CGI as an alternative measure are greater. Our findings suggest that the CGI is a much better measure of corporate income inequality bringing clear benefits at both micro and macro levels of intervention.

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INTRODUCTION

In the wake of the 2008 Global Financial Crisis (GFC), executive compensation became a heavily discussed topic in political, academic and media circles. They blamed the excessive rise of CEO and executive pay in the United States and elsewhere – both in size and structure – as one of the central reasons for the GFC and economic depression that followed – by providing executives with perverse incentives to

maximise short-term shareholder value while undermining companies' long-term performance and ultimately the whole economy (FCIR, 2011).

The observed trends of executive compensation and the poor link between pay and performance led to shareholder activism on both sides of the Atlantic and to political debate and regulatory reforms, particularly in the United States and the United Kingdom, with the approval of the Dodd-Frank Act (2010) and publication of the Hutton Report (2011), respectively.

Some of the key reforms proposed by the number of corporate governance reports

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include the mandatory disclosure of multiples of CEO pay to median employee earnings, shareholder 'say on pay' advisory votes, improved disclosure of executive compensation and company performance, and regular and more accurate board evaluations (Coffee, 2010; AFG, 2011; Hutton, 2011).

The multiples of CEO pay to median employee pay became the only official measure in monitoring excessive CEO pay. However, US and UK firms have not yet adopted measures due to corporate and consultancy industry lobby group criticism (CEC, 2011; Smith and Kuntz, 2013). Criticism from the corporate sector has permeated the debate raising doubts of whether multiples of pay are useful, implementable and add value (PWC, 2010; Harsen *et al.*, 2010; Hay Group, 2011). Some observe (CEC, 2011; Morais *et al.*, 2013) that there is an over-reliance from the Security Exchange Commission (SEC) and other regulators on the measure of CEO to median employee pay ratios. They argue that there are better alternatives available, such as the Corporate Gini Index (CGI).

Building on Morais *et al.*'s (2013) study on developing the CGI as a more complete and accurate measure of corporate income inequality to discuss its determinants, we first start with a background discussion of key trends on executive compensation, wealth distribution, income inequality and pay multiples.

The article then reviews the CEO pay multiples controversy and identifies its key determinants. It then briefly discusses the Gini Index as a macroeconomic measure of inequality and how the measure can be useful to provide a clear link between macro and micro contexts of analysis. The third section compares and contrasts our findings on the CGI determinants with the extant literature. Next, we present the advantages for regulators, companies and other stakeholders, of using the CGI, building on the literature and on our own research. The article closes with conclusions and presents future research opportunities.

EXECUTIVE COMPENSATION AND MULTIPLES OF PAY

The Financial Crisis Inquiry Report (FCIR) in the United States has placed executive compensation – size and structure – at the heart of the 2008 GFC. It highlights that there is a relation between uncontrolled growth of executive compensation and economic collapses like the Great Depression in 1929 and the current crisis (FCIR, 2011).

The ratios between CEO compensation and median worker earnings are far greater in the United States, modestly followed by the United Kingdom and the rest of Europe. An IPS and UFE (2006) study showed that the average US CEO compensation to the average worker pay rose from 107 in 1990, to reach 525 in 2000 and 411 in 2005. The same report showed that between 1994 and 2000, the average CEO pay increased 409.2 per cent, whereas corporate profits actually declined. This was at the same time where from the 1990s until 2005, the average US worker saw his/her salary increase only 4.3 per cent and the federal minimum wage actually fell 9.3 per cent. An IDS (2010) study for the United Kingdom reported similar trends where between 1999 and 2009, the average total compensation of the FTSE 100 chiefs soared 69 times that of the average full-time worker to reach 145 times and predicts that this trend may continue to reach 214 times in 10 years. Comparatively, countries with a stakeholder governance tradition paid their CEOs well below those of the United States and the United Kingdom, in many cases for managing similar or even larger corporations. For example, the ratio of the average German CEO was 12:1 in 2004, the Japanese 11:1 and Sweden 9:1 (Kroll, 2005; Tse, 2011).

We also see these trends in wealth distribution. In the United States, estimates show that 90 per cent of the country's wealth are in the hands of 400 families (Hacker and Pierson, 2010; Lieberman, 2011). Between 1990 and 2007, the top 1 per cent share of pre-tax income increased by 18.3 per cent in

the United States, 14.3 per cent in the United Kingdom, 13.3 per cent in Canada and more modestly, 7.1 per cent in Norway, 6.9 per cent in Sweden and 5.7 per cent in the Netherlands (OECD, 2011). These last countries are also among those with smaller ratios, despite having companies of comparable size to those of the United States.

Some scholars have argued that if these trends continue the social consensus on which the capitalist system is based may erode (Pryce *et al.*, 2011). Others note that these trends are certainly not conducive to a well-functioning and orderly society and economy (Wilkinson and Pickett, 2009a, b; Hutton, 2011).

The regulatory response after the 2008 GFC was quick to reform Governance Codes (Coffee, 2010; FCR, 2010; AFG, 2011; BIS, 2011; EU Commission, 2011; Hutton, 2011; SEV, 2011) which largely remained fixed within the principal-agent theory (Jensen and Meckling, 1976) with little reference to other stakeholders on how to ensure a better balance between efficiency and distribution. The Institute for Policy Studies (IPS, 2010) has already assessed provisions included in the Dodd-Frank Act, 2010 in the United States as having limited impact. These include binding shareholder votes on remuneration packages, mandatory disclosure of CEO pay to median employee pay and regular and more accurate board evaluations.

A recent Bloomberg study with Standard & Poors 250 companies confirms that the Institute of Policy Studies (IPS) fears that so far, regulations have had little or no impact on the size of ratios of CEO compensation to average employee earnings (Smith and Kuntz, 2013). Table 1 shows the ratios of CEO pay to average employee earnings by sector. We derived the CEO pay from the S&P 250 public reports and took average employee wages from the US government's industry-specific averages for workers' pay and benefits (Smith and Kuntz, 2013).

Here we observe that the average ratio of CEO pay to average worker earnings continues to be substantial whatever the sector, and in many cases may have even grown. In effect, the

Table 1: S&P 500 ratio of CEO compensation to average worker by sector

<i>Sector</i>	<i># Companies</i>	<i>Avrg. ratio</i>
Consumer discretionary	49	452
Financials	36	284
Consumer Staples	32	316
Health Care	29	275
Industrials	28	320
Technology	25	299
Energy	17	286
Materials	17	283
Communications	16	403
Utilities	1	402

Source: Adapted from Bloomberg (Smith and Kuntz, 2013).

typical CEO in the S&P 250 earns more in 1 or 2 days of work than the average worker in the industry in the whole year. Individual examples make the numbers even more compelling. Ronald Johnson, former CEO of JC Penny Co., was paid 55.3 million dollars in the fiscal year ending 2012, or 1795 times the average worker pay for the industry. The first eight CEOs comprising the list earn more than 1000 times the average worker for the sector and the first one hundred CEOs earn more than 300 times.

Some of the companies making Bloomberg's list provide explanations for the growing chasm between CEOs and the rest of the workers. Although all of the 250 companies had a chance to comment, only 62 participated. The explanations reveal some patterns that comprise the dominant logic for CEO pay. Most companies aggressively justify it for talent attraction and retention, performance reasons and shareholder value-only considerations, focusing on CEO performance relative to peers. Nike Inc. CEO Mark Parker was placed eighth, with 1050 times the average worker's salary. Spokeswoman Mary Remuzzi stated:

The compensation package is meant to attract and retain top talent, reward



business results and individual performance. The bulk of the salary is incentive based and tied to future financial results of Nike, which in turn maximises shareholder value.

Researchers have associated peer benchmarking with increases in CEO pay (Bizjaka *et al*, 2011), which is why some argue that more disclosure will have a perverse effect. However, rise in the CEO pay is also due to the use of pay consultants who implicitly use the industry benchmark. Those who support the Dodd-Frank CEO pay ratio disclosure provision do so under the assumption that increased disclosure will allow scrutiny, which in turn will drive pay down.

THE DEBATE ON DETERMINANTS OF MULTIPLES OF CEO PAY TO MEDIAN WORKER EARNINGS

After the approval of the Dodd-Frank Act (2010), companies will now start to implement the disclosure of multiples of CEO pay to median employee earnings, but there is still no consensus as to how it is to work and how to interpret the multiples. A PricewaterhouseCoopers (PWC) article on the Dodd-Frank provisions highlights that it will be difficult, particularly for large multinational corporations, to disclose the ratio of CEO pay to median employee earnings due to difficulties in taking a census of all employees and determining the costs. In addition, defining total compensation poses difficulties in gathering all specified components of pay for all employees (PWC, 2010).

Consultancy firm Radford stresses the importance of putting CEO pay multiples into context. It argues that it is 'an overly simplistic means of illustrating the gap' (Harsen *et al*, 2010, p. 1). A US-based study using total CEO compensation (including stock-based) and median employee pay for 253 technological companies, independently and publicly traded, found that the multiple is strongly related to company size (both headcount and sales) and the degree

of company globalisation (for example, opting to move manufacturing to a low-labour-cost country) (Harsen *et al*, 2010).

On 11 November 2011, the Center on Executive Compensation (CEC, 2011) issued a letter to the Securities and Exchange Commission (SEC) expressing the corporate sector's concerns regarding the use of the Statistical Sampling to Implement Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act. This exposed several fragilities of the proposal. A CEC survey revealed that most companies operate within several countries, in hundreds of locations and have multiple payroll systems. It would take months of work and specialised skills to obtain the median employee compensation (if the researchers could even find a common definition).

In response to corporate criticism, on 18 September 2013, the SEC voted 3–2 on a new rule that requires companies to disclose the multiples of CEO pay to median employee pay (SEC, 2013), but does not specify an agreed methodology to calculate the ratio. This provides companies substantial discretion on what to include in the calculations and allows them to undermine any meaningful comparisons.

In the United Kingdom, Prime Minister David Cameron, in The Hutton Fair Pay Review (2011), suggests a cap of 20:1 for all public service organisations. The report introduces pay multiples in public and private organisations and argues that a cap would have different impacts on different organisations and would create perverse incentives for executives earning less (Hutton, 2011).

Despite the single cap's limitations, the report argues that the individual multiple would be a 'clear statement of fairness' and that it could produce the desired effect of agents setting pay as more collectively conscious which could help limit income inequality and improve social mobility and cohesion (Hutton, 2011).

As with the Center on Executive Compensation in the United States, the Hutton Report in the United Kingdom also adds to the number of measurement issues highlighting the need to use

median earnings that would be sensitive to changes at the bottom of income distributions and thus, less susceptible to manipulation and the fact that 'how to define total compensation' is an element of controversy in most studies on executive compensation which some suggest are the base of some inconsistent results (Farmer, 2008; Florin *et al*, 2010).

The report is not clear on how to classify employees and refers to it as 'all employees'. The question remains of how to include part-time and temporary workers, for example. The SEC has opted to mandate companies to include all employees (including temporary workers) in calculating the employee median pay (SEC, 2013).

A Hay Group (2011) study compared on a company-by-company basis an average employee's wages (base salary and bonus) with the base salary and total cash of the CEO for a sample of the FTSE 350 index for the years 2007 and 2009. The study found that sectors that tend to employ highly educated, skilled and mobile workforces exhibited the smallest multiples when considering salary alone (for example, financial services, technology and energy sectors), whereas sectors such as retail with a large number of low-skilled, hourly paid employees exhibited the highest multiples (Hay Group, 2011). Variances in average employee pay more than in CEO pay explained the variance in ratios. The degree of proximity to public consumers, complexity of product or 'service', the business locations and the in- or outsourcing of services all affected the multiples (Hay Group, 2011). The multiples are, however, 'another tool with which to consider the subject of executive pay' (Hay Group, 2011, p. 9).

To date, Hyun *et al* (2012) have conducted the largest academic study that investigated the determinants of executive pay multiple to average (median) employee pay in 500 listed firms in the Korean Stock Exchange, representing 2777 firm-year observations between 2000 and 2009. The fact that the Korean Stock Exchange requires full disclosure of individual and average executive and employee pay facilitated this. They found that 'a substantial portion of cross-

sectional variation in executive pay multiple is explained by the firm's economic, governance, executive and workforce-related characteristics' (Hyun *et al*, 2012, p. 1).

Firmly rooted in theory, Hyun *et al*'s study (2012) investigated 21 potential determinants of multiples of average annual pay (cash and equity based) of inside directors to average annual employee pay.

First, the researchers found that for economic characteristics, companies with high growth opportunities and with membership to high multiples sectors all have strong positive correlation with high multiples, whereas the company degree of leverage was negatively associated with pay multiples (Hyun *et al*, 2012).

Second, for governance characteristics the study found that firms with higher private control benefits (that is, the majority controlling shareholder or relatives take on the position of executive inside director) and weaker board oversight (that is, smaller boards and lower meeting frequency) all tend to have higher multiples (Hyun *et al*, 2012).

As for the executive characteristics, the study consistently found a statistically significant negative correlation between the pay ratios and the executive's average age and probability of promotion of second-tier executives to top executives – namely, measured as the ratio of number of inside directors to the sum of the number of inside directors and number of VPs (Hyun *et al*, 2012). Finally, workforce characteristics showed a positive correlation between the pay multiples and the fraction of employees with shorter tenure and a negative correlation between the multiples and the fractions of union employees and administrative staff (Hyun *et al*, 2012). The study also revealed that employee and executive turnover positively correlated with higher multiples, which suggests that higher multiples harm employee and executive moral (Hyun *et al*, 2012).

Hyun *et al*'s (2012) study found results contrary to the Hay Group (2011) and Radford (Harsen *et al*, 2010) results which found no relationship between higher multiples and



corporate performance. However, these studies are based on one or two years' worth of data only, and in the last case, the study only considers one sector, hence making the findings less reliable when compared with Hyun *et al*'s study. Hyun *et al* found that higher pay multiples have a statistically significant negative relationship with subsequent operating and stock return performance, even after allowing for endogeneity of measuring executive pay multiples. More recently, Faleye *et al* (2013) conducted a large study into the determinants of CEO–employee pay ratios using COMPUSTAT data. The study showed greater ratios where executives enjoy greater bargaining power over the Board and lower power in companies with a higher fraction of unionised or more educated employees (Faleye *et al*, 2013). These results are in line with those for Korean firms (Hyun *et al*, 2012) in relation to the unions' moderating role, but are at odds when it comes to the relation between CEO–employee pay ratio and corporate performance. Faleye *et al* (2013) found that higher ratios did not affect employee productivity and could actually increase under certain conditions (that is, in companies where tournament incentives are higher, and there are no unions).

Research, consultancy reports and corporate lobby groups alike, thus far have been over-concerned with the measurement, implementation and determinants of pay multiples of CEO compensation to median employee earnings, without considering any other alternative measurement approaches. There have been proposals to smooth its implementation, questions about its value and worth for investors and policy making. No one has devised an alternative measure of corporate pay inequality that can demonstrate clear informative, investor and policy-making value.

THE MACROECONOMIC MEASUREMENT OF INEQUALITY: THE GINI INDEX

The Gini Index is the most popular measure of income inequality (De Maio, 2007; Pryce

et al, 2011) and is the measure that the International Labour Organisation (ILO) used in its most recent study on income inequality (2008). The Gini Index is derived from the Lorenz curve of cumulative income distribution (Gini, 1921). A Gini coefficient of zero indicates perfect equality – everyone has the same income, whereas a Gini coefficient of one is perfect inequality – one person has all the income. Thus, the Gini Index measures the extent to which income distribution deviates from a perfectly equal distribution or in other words, it measures 'the ratio of the area between the Lorenz Curve and the equidistribution line (henceforth, the concentration area) to the area of maximum concentration' (Bellú and Liberati, 2006, p. 4). Some scholars have pointed to limitations of using the Gini Index, namely that it is incapable of differentiating income inequalities. As a result, it is more sensitive to income inequalities in the middle part of the distribution (De Maio, 2007).

Thus, some view the Gini Index as 'not neutral' or value free (Atkinson, 1975; De Maio, 2007). Nevertheless, and according to Pryce *et al* (2011), differences between income inequalities would be apparent from the Lorenz Curve from which the Gini Index derives. Researchers have used the Gini Index widely as it generates a single measure of the whole income distribution; thus, one can cross reference a CGI to the 'macroeconomic Gini' that the vast majority of countries and NGOs use.

Building on Litchfield's (1999) and Cowell and Jenkins' (1995) work, Pryce *et al* (2011) summarise the five criteria for 'the appropriateness of any given measure of income inequality', arguing that the Gini index meets at least the first four of them. These are (Pryce *et al*, 2011):

- *The Transfer Principle*: the measurement in question should fall (rise) with the redistribution of income from (to) a richer to (from) a poorer person, or at least should remain unchanged.
- *Income Scale Independence*: when all incomes change proportionally, there is no change in the measurement of inequality.

- *Population Principle*: merging two distributions will not alter the measure of inequality.
- *Anonymity or Symmetry*: only individual incomes are taken into account in the construction of the measure.
- *Decomposability*: the overall measure and changes are consistent with changes at every level, so that increases in inequality within population subgroups will result in overall increases in inequality.

Scholars have associated macro-economic income inequality as measured by the Gini Index with a number of social ills (Kaplan *et al*, 1996; Kahn *et al*, 1998; Fajnzylber *et al*, 2002; Schell *et al*, 2007; Gross *et al*, 2009; Wilkinson and Pickett, 2009a, b) and economic factors (Hsing, 2005; Kumhof and Rancière, 2010; Berg and Ostry, 2011; Azzimonti *et al*, 2012).

Hsing (2005) emphasises that high Gini Index scores hurt economic growth and two different International Monetary Fund (IMF) studies have indicated that countries with lower income inequality as measured by the Gini Index have longer growth spells and recover faster from economic downturns (Berg and Ostry, 2011). In addition, shifts on the bargaining power over incomes and consequent accumulation of wealth at the top are a direct cause of leverage and financial crisis (Kumhof and Rancière, 2010). This is further confirmed by the Federal Reserve Bank of Philadelphia study which showed how government debt accumulation was linked to growing income inequality (Azzimoti *et al*, 2012). Further, Wilkinson and Pickett (2009b), for example, compared the macro Gini Index of each of the 50 richest countries with at least 3 million inhabitants, with an Index of Health and Social Problems¹ and concluded that the lower the income differentials the better countries performed. The most unequal countries, such as the United States, the United Kingdom and Portugal, rated very poorly in most of the key indices. They showed greater health and social problems strongly correlating with income inequality (Wilkinson and Pickett, 2009a). They found

similar results for the 50 US states for which data was available.

The wealth of research and evidence at the macro-economic level heightens the interest for researchers and policy makers to apply the Gini Index at the micro-economic level. One may argue that if at the macro-economic level increased income inequality as measured by the Gini Index hurts economic growth and social well-being, the same could happen at the corporate level where growing CGI would hurt shareholder value, employee morale, turnover and other performance indicators (Pryce *et al*, 2011; Morais *et al*, 2013).

Next, we will devote our attention to the case study where we have, for the first time to our knowledge, applied the Gini Index to a microeconomic context (that is, the corporation), and the lessons, determinants and advantages learned along the way.

THE CORPORATE GINI INDEX: THE CASE STUDY

Applying the CGI to a real multinational listed retail company case study has provided a wealth of insights and learning points regarding implementing the CGI which can be useful for researchers, companies and regulators alike. We may divide these into: (i) gaining access; (ii) defining the scope and data collection process specifications; (iii) identifying the likely barriers to data collection; and (iv) computing the CGI.

Gaining access

Gaining access to a multinational listed company to study such a sensitive topic as executive compensation and income inequality is not an easy task. We first gained approval from the company's Chairman who has a press and media reputation as an exemplary socially and environmentally proactive individual. We met the Chairman during a conference, approached the subject and after several follow-up contacts with the Chairman and especially with the company's Secretary, we were able to explain



the research and gain the Chairman's approval, thus gaining subsequent support from the corporate HR department to obtain the necessary data for this study.

Defining the scope and data collection process specifications

The HR Director designated an internal team within the HR Department (Group level) to support the researchers in collecting the data. Numerous meetings were necessary to agree on the time-frame (2007–2010), on the concept of total compensation, on which types of employees to include, and which pay bands to consider and the geographical coverage (that is, which countries). We required several meetings, telephone calls and considerable time to ensure data reliability and conformance with the study requirements and to overcome a number of non-anticipated barriers. We have used the concept of total compensation which we define as 'the monetary and non-monetary rewards offered to employees including ... all forms of financial payments and a variety of employee benefits' (Jackson *et al*, 2008, p. 356) and included only full time employees (FTE) and their equivalent under an employment contract for the domestic operations. We collected income distributions for six basic categories of pay for the domestic company from 2007 to 2010. These were Executive Board, Top Management, Regional Directors/Deputy Directors, District Managers, Store Managers and Equivalent, as Table 2 illustrates.

Identifying barriers to data collection

It is important to anticipate a number of barriers to data collection before embarking on the process, as we discovered during our research. Previous mergers and acquisitions where the integration of payroll systems has yet to occur has an impact on data collection as well as the different payroll systems deriving from varying regulatory requirements. This limited both the

Table 2: Pay categories, head count and average and median pay (2007–2010)

Layers	2007			2008			2009			2010		
	HC	Average	Median	HC	Average	Median	HC	Average	Median	HC	Average	Median
Board	4	650.937	NA	4	791.767	NA	4	834.470	NA	4	944.920	NA
Exec. Directors	8	248.860	249.219	5	230.642	219.657	5	249.882	223.328	8	233.994	227.588
Operational Directors	21	103.982	89.465	24	102.234	91.996	26	105.661	98.758	26	112.849	112.215
Districts	59	52.763	51.805	87	48.126	48.890	83	50.384	50.069	82	54.845	54.609
First Line Management	457	34.040	32.196	736	27.022	25.117	794	34.103	33.059	798	19.935	18.917
Shop-Floor Employees	17.385	11.732	8.966	19.935	11.196	8.144	21.610	14.348	14.008	24.375	9.011	8.419

Note: NA – not available.

geographical and the business unit's coverage of our data collection. Disparate organisational structures (that is, more or less hierarchical) also have an impact on how to define the pay bands. Furthermore, the process is very time consuming and it took the internal team nearly a year to support the researchers in aligning the data with the pay band specifications, conversion of full time and part-time employees and concept of total compensation.

Computing the CGI

Computing the CGI is actually a very simple process. The problem is getting the data right.

We devised a more comprehensive measure of inequality that accounts for the wider work-force and society. We computed a Standard Gini Index using the covariance formula as Bellú and Liberati (2006) suggested:

$$G = \text{Cov}(\gamma, f(\gamma)) \cdot 2 / \bar{\gamma}$$

where

Cov is the covariance between income level γ and the cumulative distribution of the same income $f(\gamma)$ and $\bar{\gamma}$ the average income.

Table 3 shows a breakdown of the CGI calculation for the period 2007–2010.

The results showed a growing CGI except for the year 2009 where the CGI declined for points

Table 3: CGI calculations (2007–2010)

Year	Rank	HC	γ	$f(\gamma)$	$\text{Cov}(\gamma, f(\gamma))$	$\bar{\gamma}$	$G = \text{Cov}(\gamma, f(\gamma)) \cdot 2 / \bar{\gamma}$ Standard Gini Index
2007	Rank 6	4	650 937	1	1052.09	12791.81	0.1645
	Rank 5	8	248 860	0.999777			
	Rank 4	21	103 982	0.9993309			
	Rank 3	59	52 763	0.9981599			
	Rank 2	457	34 040	0.9948701			
	Rank 1	17385	11 732	0.9693878			
2008	Rank 6	4	791 767	1	1523.21	12218.81	0.2493
	Rank 5	5	230 642	0.9998076			
	Rank 4	24	102 234	0.9995671			
	Rank 3	87	48 126	0.9984128			
	Rank 2	736	27 022	0.9942283			
	Rank 1	19935	11 196	0.9588283			
2009	Rank 6	4	834 470	1	1559.51	15480.61	0.2015
	Rank 5	5	249 882	0.9998224			
	Rank 4	26	105 661	0.9996004			
	Rank 3	83	50 384	0.998446			
	Rank 2	794	34 103	0.9947607			
	Rank 1	21610	14 348	0.9595063			
2010	Rank 6	4	944 919	1	1550.57	9830.16	0.3155
	Rank 5	8	233 994	0.9998419			
	Rank 4	26	112 849	0.9995256			
	Rank 3	82	54 845	0.9984976			
	Rank 2	798	19 935	0.9952556			
	Rank 1	24375	9 011	0.9637054			

Source: Compiled by the authors.



fuelled by zero growth on both average and median shop floor pay. As we have reported elsewhere (Morais *et al*, 2013), the results in 2009 are not explicated by changes in compensation policies or to variations in company performance that would have justified a growth in variable compensation, or by any other factor susceptible to change the figures so dramatically, including employee turnover or executive compensation growth. Nevertheless, our results show that the CGI is growing, and nearly doubled from 0.1645 in 2007 to 0.3155 in 2010.

We conducted the study with a large, listed multinational food retail company operating in several countries; however, results are only for one of the countries (Portugal) in which the company operates. Next, Table 4 presents the average total compensation for Portugal and the wider sector, as well as the national minimum wage which the government fixes annually in conjunction with unions and industry.

Although the data above is not directly comparable to that of the company (that is, cannot compare shop-floor employee average pay with that of the country or the sector as a whole), it shows that shop-floor employees are paid below the country average and sector average for all years, while on average the company pays well above the national minimum wage for the country.

During our journey we discovered some key CGI determinants which we will compare and

contrast next with the proposed measure of multiples of CEO pay to median employee earnings as to the determinants and advantages.

CORPORATE GINI INDEX (CGI) DETERMINANTS

Although our research results shares most of the determinants of pay multiples, providing further evidence in support of the extant literature, it also finds more specific determinants that can influence the CGI.

Table 4 summarises the literature findings on the determinants of the multiples of average CEO pay to median employee earnings and our own findings for the CGI, and a discussion follows.

High growth opportunities and size

The Korean case study (Hyun *et al*, 2012) revealed that firms with higher growth opportunities tend to exhibit higher multiples of CEO pay to median employee earnings. Our study supports these findings. In our case study, the CGI almost doubled along with group total sales. For the period of 2007–2010, the company's total sales grew at a steady pace from roughly 5 billion euros in 2007 to nearly 10 billion euros in 2010 (about 50 per cent growth), largely driven by a new international market with high growth potential. During the same period, the CGI rose from 0.1645 to 0.3150. Reflecting the above, we found significant correlations at the 0.05 level (1-tailed) between the CGI, Group EBITDA ($P=0.048$) and Group Sales ($P=0.044$). Subsequently, results also lend support to size, both in terms of headcount and sales volume, as a driver of changes on the CGI, as the literature claims (Harsen *et al*, 2010; Hay Group, 2011; Hyun *et al*, 2012).

Workforce profile and sectorial differences

There is wide consensus that the workforce profile is one of the main determinants of pay

Table 4: Average total compensation for Portugal, the sector and national minimum wage

Year	Average total compensation Portugal (in €)	Average total compensation sector* (in €)	National minimum wage (in €)
2007	13 486.00	12 686.00	5 642.00
2008	14 112.00	13 125.00	5 964.00
2009	14 478.00	13 430.00	6 300.00
2010	15 054.00	13 876.00	6 650.00

Source: PORDATA.

*sector values are for the broader food and drink sector, including manufacturing

multiples variance (Harsen *et al.*, 2010; Hay Group, 2011; Hyun *et al.*, 2012). Our study supports the Hay Group's claim (2011) that sectors with a typically more educated, highly skilled and mobile workforce would have lower pay multiples when compared with sectors such as retail with a large base of low wage, low-skill shop-floor employees. It also supports the idea that changes in median employee pay mainly influence the multiple of pay or that the fraction of administrative staff has an impact on both multiples and the CGI. Across a 4-year period (2007–2010), the proportion of shop-floor employees was very high (around 96 per cent of all employees) that accounted for 88–89 per cent of company income generation. The workforce profile mainly explained the variations in the multiples and CGI and thus changes in average/median employee pay (either increases or decreases) had an impact on the CGI.

Although we did not use the fraction of unionised employees in our study, we learned that differences on sectorial labour agreements do impact CGI. Although in the domestic retail sector collective labour agreements demand differentiating jobs and pay for shop-floor employees (for example, a butcher or a baker are considered specialised, and thus paid more), in international operations retail sector labour agreements push for all shop-floor employees receiving equal pay. Therefore, while the fraction of unionised employees can be a good proxy for employee bargaining power, the specific sectorial agreements and their characteristics provide much more value as they impact directly on pay grades, and thus on the CGI.

Although human resources turnover is a determinant of pay multiples (and we did find some evidence of this), we found that new job creation, which is strongly linked to a company's growth opportunities, contributes to enlarging the bottom of people distribution starting at the lowest pay grade. This impacts the CGI and means that turnover is not a good indicator as it can be high without the company necessarily creating any further jobs.

Governance-related factors

The case study did not allow for controlling board oversight and ownership structure. However, we did observe that after the company changed from a monistic (in operation until 2006) to an Anglo-American Model of Governance (2007), inequality shown as the rise in the CGI, rocketed from 0.1645 to 0.3150, thus supporting literature claims that this type of governance model produces more inequality (Clarke, 2010). Noting this observation, it is plausible that we could better explain the CGI growth for the period by the company growth and consequent increase in executive compensation, among other aspects. We recognise that it may take some time for the corporate governance model changes to take effect. Nevertheless, we do not rule out that these changes had some effect during the period under analyses, and we certainly hypothesise future growth in the company CGI as the model becomes more dominant and embedded in executive culture.

The Anglo-American shareholder model of governance distinguishes from other more stakeholder-oriented models (that is, German, Latin and Japanese models) for having a very low ownership concentration and hence, more managerial empowerment which encourages 'free-riding' and short-termism (Van Hulle, 1997; Weimer and Pape, 1999). An active market for corporate control and a tendency to have performance considerations in attributing executive compensation are other features which the literature claims to be specific to the Anglo-American model (Weimer and Pape, 1999).

In effect, from 2006 the company has delegated all executive affairs to a new organ – the executive committee – charged with the day-to-day running of the company. The company also increased the number of (independent) outside directors and progressively introduced a number of committees, notably an internal audit and remuneration committee (in 2007) and subsequently, an ethics and corporate responsibility committee (in 2010) staffed with



non-executives. The Board, which was charged with many executive functions, became a monitoring body for the executive committee's actions, led by the CEO.

However, the literature observes that executives use their power for self-serving purposes such as awarding themselves generous compensation packages, using the market of corporate control and leverage to engage in acquisitions with little long-term value for shareholders and pursuing other short-term strategies such as downsizing *en masse* to meet quarterly targets. This is in line with Faleye *et al*'s findings (2013). They suggest that the growth in income inequality would be greater where the management has greater power over the Board and where employees have less bargaining power with management (that is, not unionised, for example), both of which are characteristic of the Anglo-American model of governance.

Interestingly, and in sharp contrast with the Anglo-American model, Balsmeier *et al*'s recent study (2013) with a large sample of German listed companies investigated whether employee representation at the board level was beneficial from the shareholders' viewpoint. They found that the relationship between labour power and Tobin's Q (the ratio between the market value and the replacement value of the same physical asset) and market-to-book was an inverse u-shape, where labour power was optimal between 40 and 46 per cent from a shareholder viewpoint (Balsmeier *et al*, 2013). From this perspective, one begins to understand why the ratios of CEO pay to median employee pay are much lower in stakeholder countries, and how this can become beneficial to owners and society at large.

Business model/degree of internationalisation/geography

The research design did not allow us to test whether the business model is a determinant of the CGI. However, it is intuitive that the degree of internationalisation and therefore geographical factors do affect employee wages

as illustrated in our case with the different labour regulations that occur in domestic and international operations. In other words, the costs of context influence the CGI.

ADVANTAGES AND DISADVANTAGES OF USING THE CGI FOR REGULATORS, COMPANIES AND OTHER STAKEHOLDERS

There are a number of pros and cons that researchers associate with using a CGI. We found that the CGI can provide much more information for companies and policy-makers as one can cross-reference it to the macro Gini Index, accounting for wider income distribution and specific subgroups within the workforce. This allows for better assessing the impact of corporate remuneration policies and practices in the wider society. As discussed above, disclosing the CGI will allow institutions to monitor whether certain inequality-led macroeconomic (Hsing, 2005; Kumhof and Rancière, 2010; Berg and Ostry, 2011; Azzimonti *et al*, 2012) and macro-social trends (Willkinson and Pickett, 2009a, b) are occurring at the microeconomic level whereby, increased inequality may damage long-term shareholder value, and other stakeholders such as employees' morale, turnover, wages and ultimately, the whole of the society.

Figure 1 illustrates our findings regarding the evolution of the company CGI *vis-à-vis* the country Gini Index where the company is located.

The chart shows a convergence of the company CGI to the country-level Gini, aggravating corporate inequality. The chart exemplifies the type and value of information policy-makers, companies and other stakeholders could enjoy if companies would disclose CGI in their proxy statements. Tracking a CGI across time and sectors could yield important insights for compensation and CSR committees, regulators and policy-makers alike, by uncovering patterns between micro and macro income inequality.

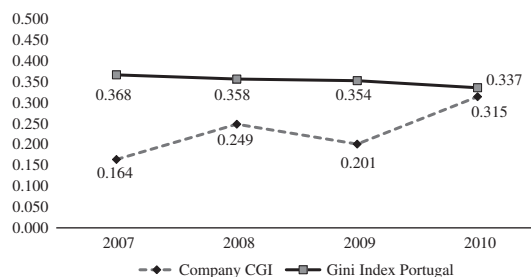


Figure 1: Evolution of the company CGI vis-à-vis Portugal Gini Index (2007–2010).
Sources: Company data and PORDATA.

For companies, choosing to disclose the CGI opposed to the pay multiple will not represent extra costs as the information required to disclose one or the other is basically the same.

The CGI also provides a mean of comparison across sectors that do not have the limitations of multiples as it does partially eliminate industry-related effects on the measure. It is also a fairer measure for corporations as it presents the information in a manner that is not so alarming

Table 5: Multiples of pay and CGI determinants

Determinants	Multiples of CEO to median employee earnings						CGI
	Hay Group (2011)	Harsen <i>et al</i> (2010)	PWC (2010)	Hutton (2011)	Hyun <i>et al</i> (2012)	Faleye <i>et al</i> (2013)	Morais <i>et al</i> (2013)
<i>Economic related</i>							
Sector	x	x	x	x	x		x
Business model	x	x	x	x			x
Geography/Degree of internationalisation	x	x	x				x
Growth opportunities					x		x
Size	x	x		x	x		x
Degree of leverage					x		
<i>Labour related</i>							
Workforce profile ^a	x	x	x	x	x		x
Rate of unionisation					x		
Sectorial labour agreements							x
Employee/Management bargaining power						x	
Job creation rate							x
Degree of outsourcing	x			x			
<i>Governance related</i>							
Ownership structure					x		
Board oversight					x		
Management power over board						x	
Corporate governance model							x
<i>Executive characteristics</i>							
Executive's average age					x		
Promotion probability					x	x	

^aMore skilled, qualified and mobile workforces are paid more; hence, multiples are lower.

Source: Compiled by the authors.



for the wider public while providing much more useful information for policy making. It can ultimately be a source of competitive advantage for companies, by attracting consumers and talent for which equality and fairness considerations are important. Moreover, the Gini Index meets the essential criteria of any measure of income inequality (Litchfield, 1999), which does not happen with the multiples of pay.

In addition to the Hay Group (2011) study, which highlighted that pay multiples are another tool to evaluate executive compensation and other compensation practices, we contend that CGI can be more helpful in evaluating executive compensation in a variety

of ways. Table 5 summarises key CGI and multiples of pay advantages and disadvantages (Table 6).

Although it is clear that a CGI is far more valuable as a measure of corporate income inequality, discussion has almost obsessively concentrated in disclosing the multiples of CEO pay to median employee earnings. The US SEC has recently mandated the disclosure of the ratios (SEC, 2013) providing much discretion for companies to choose the methodology to calculate it. We argue that, if the SEC is serious in monitoring executive pay and corporate income inequality, then it must ensure that this is done properly by using the best metrics available – The CGI.

Table 6: CGI and the multiples of pay

<i>Measures</i>	<i>CGI</i>	<i>Multiples</i>
<i>Advantages</i>	<ul style="list-style-type: none"> • Provides a single comprehensive measure easier to compare across industries. • Measures the whole of the income distribution and not only top to bottom. • Better assesses the impact on the wider community and society. • Provides more information for policy-makers. • It's fairer to corporations as it does not cause the public alarm that multiples can cause. • Can cross-reference it to macro Gini. 	<ul style="list-style-type: none"> • More easily accessible and readily understandable to the wider public. • Executive compensation (CEO) is readily visible.
<i>Disadvantages</i>	<ul style="list-style-type: none"> • Hard to obtain data and potential costs associated with this. • Legal issues of whether home-based jurisdiction applies for companies to have to disclose multiples of overseas operations. • More suitable for experts, less accessible to wider public scrutiny. • Top pay does not become apparent. 	<ul style="list-style-type: none"> • Hard to obtain data and potential costs associated with this. • Legal issues of whether home-based jurisdiction applies for companies to have to disclose multiples of overseas operations. • It's not a good proxy for fairness as different multiples may reflect different realities. • Measures only top to bottom inequality hiding other sub-groups. • Cannot readily link it to any measure of macroeconomic income inequality. • Causes public alarm by the way data is presented.

Source: Compiled by the authors.

CONCLUSIONS AND FUTURE RESEARCH

The review of the extant literature as to the limitations and the determinants of CEO pay to median employee pay and the lessons from our own experience in developing a CGI show that one needs to carefully interpret both multiples of pay and the CGI according to identified influencing factors. The results from our study confirm that the CGI shares most of the determinants with the pay multiples measure, namely workforce profile, size, business model, degree of outsourcing, degree of internationalisation, sectorial variance, employee turnover and growth opportunities. In addition, our study provides some evidence that the job creation rate (linked to growth opportunities) is also a key determinant of CGI and pay multiples behaviour. Hyun *et al* (2012) have also identified weak board oversight, higher private control benefits and probability of promotion as influencing pay multiples. Our case study did not allow us to control these variables, but we do have some evidence that this type of governance model influences the behaviour of pay multiples and the CGI, supporting some claims (Clarke, 2010) that the shareholder value model of governance produces more inequality.

We found that the specific sectorial labour agreements also had an impact on CGI and multiples, which indirectly supports the claims that the fraction of unionised employees (Hyun *et al*, 2012) and the employee bargaining power relative to management (Faleye *et al*, 2013) affect the multiples of pay. Finally, we have concluded that the CGI is a much more advantageous measure of corporate income inequality and a much better referential for setting executive pay when compared with the pay multiples which create considerably more controversy without adding as much value.

Should regulators and corporations adopt the CGI approach? If a CGI committee could develop a framework to highlight corporate ethical, fairness and equality concerns in relation to pay and add value by linking the company's

CGI to the macro-economic Gini, ideally, companies with a reputation of fairness could see sales increase or could attract talent for which fairness is important.

We urge the SEC and other regulators around the world to carefully consider the CGI as a measure that should be disclosed in proxy statements, by introducing amendments to existing regulation (in the case of the Dodd-Frank Act) or by launching public debate about the topic.

There is still little research around the topic of income inequality/pay multiples, particularly its relation to corporate performance, but we hope that improved and widespread disclosure of information by companies will make this area of research very promising. Should companies regard the CGI as a measure to disclose in proxy statements, we could consider other soft performance indicators such as number of hours lost for sick leave (proxy for health effects at the macro-economic level), number of disciplinary and grievance events, labour disputes, strikes (proxy for social unrest, crime, violence), unionisation of employees, employee participation, engagement and satisfaction (proxies for social capital and quality of community life). (Morais *et al*, 2013).

Future research could focus on exploring other CGI determinants, for example, in different corporate governance traditions. The relation between the CGI and workforce diversity (that is, ethnic background) could also be an interesting line of research and could allow for uncovering and monitoring issues related to equal opportunities. Drawing from the study on the Korean Stock Exchange, further research on how Korean firms have adapted to the disclosure requirements in place since 2000 could be useful for Western firms to learn and perhaps could demystify the consultancy sector's arguments that disclosing this type of information will make firms incur unacceptable costs without adding any value.

NOTE

- 1 The authors developed the index from several official sources and included: life



expectancy; maths and literacy scores; infant mortality; homicides; imprisonment; teenage births; trust; obesity; mental illness, including drug and alcohol abuse; and social mobility.

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