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Abstract

This paper adds to the empirical evidence on the extent to which the European executives are incentivized and rewarded by stock-based pay. It shows that stock-based compensation of CEOs in European listed firms is usually underestimated and it documents the heterogeneity among countries. We base our work on a sample of 227 large, publicly-traded companies listed in the S&P Europe 350 index from five major European countries: France, Germany, Italy, Sweden and United Kingdom. Through analysing companies' annual reports, we have hand-collected data on various elements of compensation of the company's CEO in 2015, with an emphasis on the gains that executives actually realize from stock-based pay. We document that on average half of the total compensation of the European CEOs in our sample is stock-based, measured by actual realized gains. However, there are large differences between countries. Although in France and the UK the majority of total compensation is stock-based, the proportions are still well below those that prevail in the United States. A comparison of realized gains measure of CEO compensation with the data based on fair value estimates shows that the latter underestimates the relevance of share-based pay, in the case of some countries dramatically. Our research findings add to the existing policy debate on transparency of remuneration policy and the link between pay and performance of corporate executives in the EU. Based on our work we propose that the Commission should insist that the companies submit executive data in a standardized form that enables international comparisons, and, above all, uses realized gains measures.

Keywords: Executive compensation, stock-based pay, stock options, stock awards, estimated fair value, actual realized gains, EU

JEL codes: D22, D31, G35, J33, M41, M52

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Introduction

Creating a better link between pay and performance of company directors is an important part of a European Commission's agenda to support the long-term sustainability of EU companies. The issue of executive remuneration came to the forefront after the 2007-09 financial crisis, when concerns were raised about substantial increases in executive pay, the short-term focus of remuneration policies and the increased relevance of variable pay in the composition of directors' remuneration (European Commission 2010). Public outrage over perceived excesses in executive pay that were uncovered has been known to shape government interventions even before (Conyon et al. 2013; Hill 2006), let alone after the crisis. Excessive directors' pay not justified by performance was identified by the Commission as one of the shortcomings in the corporate governance of listed companies, leading to dissatisfaction of shareholders and society at large (European Commission 2017). Some of the cases are telling. For example, oil company BP awarded its CEO a 20% pay increase for 2015 in spite of a record annual loss of the company; in response to a shareholder protest, the company did decrease his pay packet by 40%, but not before 2016 (http://www.independent.co.uk/news/business/news/bp-ceo-pay-cut-bob-dudley-shareholder-protest-a7670091.html). Data were also emerging that showed an insufficient link between pay and performance. For example, in France the average remuneration of directors in the years 2006 to 2012 increased by 94% whereas the average share price of listed companies decreased by 34% (European Commission 2014, pp. 26).

It is not only the size of executive compensation packages that is an issue, the way they are paid is of even greater relevance. If incentives of executives are mainly tied to short-term performance targets, their decisions might be taken with a focus on short-term value extraction and not with the company's long-term investments in value creation in mind. The European's Commission's Green paper on long-term financing in the EU has raised concerns about a bias towards short-termism and speculation, with remuneration being a part of the problem (European Commission 2013). As an attempt to address this issue, a revision of Shareholders' Rights Directive was adopted in April 2017, with the EU Member States now having 24 months to transform it into law. The directive aims to create more transparency on remuneration policy and actual remuneration awarded to directors and create a better link between pay and performance of directors, amongst other (European Parliament 2017). However, some of the issues remain unaddressed. We want to contribute to this debate by developing a consistent measure of executive pay compensation and its components for a number of European countries, with a focus on equity-based compensation.

The debate on executive pay in European firms needs to be based on reliable data, but transparency of remuneration continues to be problematic, in spite of several Commission's recommendations addressing its disclosure requirements in listed companies (European Commission 2004, 2009). EC's consultations with stakeholders showed that it is hard to disentangle what executives are actually earning and to judge whether this remuneration is appropriate; and such important information is difficult to identify amongst all the details included in current directors' remuneration reports (European Commission 2014). Because of these problems of adequate information and its interpretation, assessing remuneration and comparing it between companies, especially across borders, is costly and time consuming (European Commission 2017).

Even more important, the remuneration data that are usually gathered and presented for European companies falls into the same trap as the data for US companies, identified by Hopkins and Lazonick (2016), that of systematic mismeasurement of executive compensation. Compensation of executives includes salaries, social security contributions, post-employment benefits, non-monetary benefits, bonuses and deferred compensation, as well as stock-based payments. When it comes to recording stock-based pay, the two bodies that determine how remuneration is being reported for the US listed firms, i.e. Financial Accounting Standards Board and the Securities and Exchange Commission, promote the use of "fair value" estimates of what stock-based pay might be worth in advance of being realized as distinct from the gains that executives actually realize from stock-based pay. "Fair value" measures of stock-based pay are based on estimates, where grant-date stock prices are used in the estimation model to determine the value of newly vested (but unexercised) stock options and vested stock awards. Yet this measure fails to capture changes, often significant, that can take place in the company's stock price since the time the stock options and awards were granted. Actual realized gains should be captured instead, i.e. what the CEO actually takes home as compensation and is obliged to pay income tax on. Actual realized gains measure stock-based pay when stock options are exercised and stock awards vest, using the market price of the stock. Hopkins and Lazonick (2016), analysing the 500 highest-paid corporate executives of US companies from 1992 to 2014, show that a) stock-based pay, in the forms of realized gains from stock options and stock awards, dominates both the size of and the changes over time in the total compensation of the highest-paid senior executives; and b) the fair-value estimates of stock-based pay tend to understate, often substantially, the realized gains from stock-based pay that these executives actually receive. Since it is the actual realized gains from stock-based pay that are relevant as incentives for the executives, not the "fair value" estimates that are being approved and promoted by the governance institutions, this is an important issue that has not, to our knowledge, been researched for the case of European companies.

The issue of executive pay is to an important extent connected to the allocation of corporate resources to investments into productive capabilities. The actual realized gains of the executives will depend on the vesting-date stock price, thus giving them an incentive to take actions to drive up the stock price which will affect the way they run companies. This mode of compensation becomes a problem when stock-based pay rewards senior executives for value extraction rather than value creation (Lazonick 2016). Since the 1980's, stock buybacks, as a prime mode of value extraction, have become massive and pervasive in the US corporate economy and an explanation for the increase in open-market repurchases is the rise of stock-based pay (Lazonick 2014). By creating demand for the company's stock that provides an immediate boost to its stock price, buybacks reward those shareholders who sell their shares, with access to information on the precise timing of buybacks as a critical variable in determining which types of share sellers are best positioned to reap these gains. The executives are among the most prominent share sellers, and they have access to information to time their stock sales to take advantage of buyback activity. Stock-based pay thus gives the executives strong incentives for stock buybacks instead of investing profits in innovation and productive capabilities (Lazonick 2014).

In spite of the relevance of this issue, there is a lack of empirical research generating insights into these processes of value creation and value extraction in European companies. This paper seeks to address this gap. It adds to the empirical evidence on the extent to which the European executives are incentivized and rewarded by stock-based pay, hence being susceptible to financialized decision making in corporate resource allocation. Our contribution is twofold. First, this is a first study showing actual realized gains from stock-based pay of CEOs of European largest companies. And second, by using a consistent approach in gathering data for companies from five different countries, we sidestep the deficiencies of the existing databases. We thus provide data on the measures of CEO pay and their components that allow us to document heterogeneity between countries and also between industries.

We base our work on a sample of large, publicly-traded companies listed in the S&P Europe 350 index from five major European countries: France, Germany, Italy, Sweden and the United Kingdom. Our sample includes 227 companies from these countries and the data is gathered for the year 2015. Through analysing annual reports and/or remuneration reports of the companies, we have hand-collected data on various elements of compensation of the company's chief executive officer (CEO). Special effort was put into gathering the data relevant to calculate the realized gains from stock-based pay, which is what the existing databases including in-depth information on executive compensation, like BoardEx and Capital IQ, do not provide. We have also obtained data from Capital IQ, to be able to make a comparison between their CEO compensation calculations and our realized gains measure. In addition, we have hand-collected some qualitative data on CEO compensation, such as performance criteria determining the level of variable pay. Finally, we have also gathered data on employee wages and salaries to calculate the CEO-to-average employee pay ratio of each company and each country.

We document that on average half of the total compensation of the European CEOs in our sample is stock-based, measured by actual realized gains. However, there are large differences between countries, with the largest proportion of stock-based compensation found in companies from the UK and France (60% and 58%, respectively) and the lowest in Italian companies (14%). Comparison with data collected by Matt Hopkins and William Lazonick for the 500 CEOs of S&P 500 companies in 2015 reveals average total compensation of USD19.5 million, or EUR17.0 million, with the actual realized gains from stock-based pay accounting for 76 percent of the total. Data that we present in this paper for 227 CEOs of European companies show average total compensation of EUR5.3 million, with 51 percent from stock-based compensation. Of these European CEOs, 48 from France averaging EUR6.0 million in total compensation, with 58 percent from stock-based compensation, and 98 from the UK averaging EUR5.9 million, with 60 percent from stock-based compensation. Based on these data, European CEOs get paid far less than their U.S. counterparts. Although in France and the UK the majority of total compensation is stock-based, the proportions are still well below those that prevail in the United States.

Stock awards are the most prevalent form of share-based pay in Europe. Stock options have a relatively unimportant share of total CEO compensation in all European countries but France. A comparison of realized gains measure of CEO compensation with the data based on fair value estimates shows that the latter underestimates the relevance of share-based pay, in the case of some countries dramatically. Our results also show that the CEO-to-average-employee pay ratio is the highest in French and the UK companies while the lowest ratio can be found in Italy.

The paper is structured as follows. In the following section, we discuss the measurement of executive compensation in European countries and present the main elements of regulatory framework that determines the disclosure of executive pay. Section 2 presents the process of data collection and the sample. The empirical findings are presented in Section 3. Finally, we discuss the implications, along with the limitations of our study.

1 Measurement of executive compensation and institutional background

Research on executive pay in Europe usually relies on databases such as BoardEx or Capital IQ when measuring individual CEO compensation (see for example Burns et al. 2015; Croci et al. 2012; De Cesari and Ozkan 2015; Fernandes et al. 2013; Geiler and Renneboog 2015; Conyon et al. 2013). Another option that is used are the data handpicked from companies' annual reports (for example Bouras and Gallali 2016; Hüttenbrink et al. 2014; Muslu 2010; Oxelheim and Randøy 2005; Schmid and Wurster 2016; Gupta et al. 2016).[3] In both of these cases, the data on executive compensation are being sourced from the summary compensation tables that the companies provide in their annual reports. These tables detail the different forms of compensation, including equity-based compensation which is usually a part of Long-Term Incentive Plans (or LTIPs) of rewarding the executives but it can also be found as a part of short-term incentives. Stock-based compensation comes in the form of stock options and stock awards (with the latter including such variations as restricted stock and stock appreciation rights). There is a great variety, even within the same country, in how these are reported in the annual reports. Companies usually provide either the fair value measures of stock-based pay that was granted at the beginning of a vesting period, or face values of the granted stock options/awards calculated by using the grant-date stock prices. In any case, "fair value" measures of stock-based pay are usually used in summary compensation tables and thus also for the purposes of research and reporting on CEO compensation in Europe, similar to most of the studies done for US companies.

The widespread use of fair value measures for stock options and stock awards is not surprising, given the regulatory requirements. In the case of US it is the Financial Accounting Standards Board that, with the regulatory support of the Securities and Exchange Commission, promotes the reporting of fair value estimates of stock-based compensation expenses (Hopkins and Lazonick 2016). The European counterpart of such an institution is the International Accounting Standards Board that issues international financial reporting standards (IFRS) for public-interest entities. Since 2005, following the "IAS Regulation" (European Commission 2015b), consolidated financial statements of listed EU companies must be prepared in accordance with IFRS as adopted by EU. IAS Regulation was introduced to build an integrated capital market operating effectively, smoothly and efficiently and the use of a single set of international accounting standards aims to enhance comparability of consolidated financial statements (European Commission 2015a). The introduction of IFRS standards has significantly changed the accounting rules for stock-based payments, contributing to an increase in their disclosure (Ferrarini et al. 2009). The standards address the measurement principles and specific requirements for equity-settled transactions and cash-settled share-based payment

[3] Another line of research on international executive pay relies on data from consultants' reports. One such example is Towers Perrin's Worldwide Remuneration Survey, where the data they offer are consulting company's estimates of a "competitive pay" for a representative CEO in a company with an assumed annual revenues, based on questionnaires sent to consultants in each country (Conyon et al. 2013, pp. 36). Another example are remuneration data provided by a German-based consulting firm Kienbaum, covering 10 European countries and Turkey. The extent to which this data accurately measures executive compensation is also under question. According to Kienbaum, the value of stock options for German firms recorded in this database has been estimated by the companies' auditors, but no details on the evaluation process are available and some evidence suggests that stock options grants are not consistently evaluated over time or between firms (Fabbri and Marin 2016).

transactions. Among other things, they prescribe that for transactions with the employees, the company is required to measure the fair value of the equity instruments granted, measured at grant date (European Parliament 2005, pp. 6). When equity vests immediately, fair value should be based on market prices whereas if market prices are not available, a valuation technique should be used, consistent with "generally accepted valuation methodologies for pricing financial instruments" (European Parliament 2005, pp. 7).

However, the use of fair value measures in this context fails to capture what CEO actually takes home as compensation. As explained by Hopkins and Lazonick (2016), the use of fair value estimates of stock-based pay in the US did not evolve from the concern to measure the amount of realized gains the employees might receive. It rather reflected the increased use of stock options as part of compensation packages in the 1980s and 1990s by the companies trying to incentivize the employees to come and work for them. This has led to the concerns of asset managers of pension and mutual funds about the impact of broad-based stock options on the dilution of the shareholdings of the stock in the funds' portfolios. The financial accounting standards that led to up-front estimates of the cost of vested but unexercised options (i.e. the fair value of stock-based compensation) provided them with what they needed for their decisions to buy and hold stock. The valuation techniques used for this purpose, such as Black-Scholes model, are also problematic. Such pricing models were made for financial options that are easily tradable, are relatively short-term in duration and with a contract-defined exercise date, and not for employee or executive options and awards that have structurally different attributes (Hopkins and Lazonick 2016).

Fair value of stock-based pay fails to take into account the changes that can take place in the company's stock price since the time the stock awards and options were granted. In addition to this, the final number of shares to be received by the executive will in most cases depend on whether certain performance criteria will be accomplished.[4] It is the exercising of stock options and the vesting of stock awards that provide the actual realized gains of executives from stock-based compensation schemes. And, as we argue in the introduction, it is the realized gains that we should capture when measuring executive compensation.

What adds to the complexity of measuring executive compensation in European companies is the institutional background and the reporting practices of companies that differ substantially between

[4] Let us provide some basic information on stock options and stock awards (definitions are from Hopkins and Lazonick (2016)). An employee stock option gives the recipient the right to acquire a specified number of shares in the company for which he or she works by exercising the option to buy those shares at the stock-market price that prevailed on the date that the option was granted. Once an option vests, the employee can exercise the option, in whole or in part, at any time until the termination date specified in the option grant. The employee will only choose to exercise the grant if the market price is higher than the exercise price. The spread between the exercise price of the shares and their market price on the date that the option is exercised (in whole or in part) constitutes realized gains.

A stock award gives the recipient employee the right to the shares in the award on the date that the award vests. A minimum restriction for an award to vest is that the employee must remain with the company for a certain period of time from the grant date. The award might carry other restrictions such as the need for the company to achieve a certain earnings-per-share (EPS) target in order for the award to vest. The achievement of a performance target may increase the number of shares in the award when it vests. When all restrictions have been met, and the award vests, the employee's realized gains are the market price of the company's stock on the vesting date times the number of shares in the award. Even if the market price on the vesting date is below the market price on the grant date, stock awards provide realized gains to the employee.

the countries. Companies' annual reports are prepared in accordance with the legal and regulatory requirements applicable in the relevant country and the companies' consolidated financial statements, prepared in accordance with IFRS as adopted by the EU. The national rules on the disclosure of executive compensation in the listed companies include that of a) securities commission or financial regulatory agency, b) company law, and c) corporate governance codes in each country. National corporate governance codes are an important part of the regulatory framework. For example, in France the so-called AFEP-MEDEF code even prescribes the templates for the tables that include data on remuneration disclosure (AFEP and MEDEF 2016). The use of national corporate governance codes is also promoted by the European Commission. An EC directive from 2006 requires that listed companies state in their annual report which corporate governance code they apply and if they depart from it, they need to explain what part of it they depart from and give the reasons for doing so, the so-called "comply-or-explain" approach (European Parliament 2006). However, impact assessments that have followed the introduction of this directive have concluded that "comply-or-explain" approach did not apply well in practice by companies and that there is a need for greater transparency of remuneration in EU countries (European Commission 2014). The demand for increased pay disclosure is also known to intensify after perceived excesses in executive pay that come public. For example, until 2005, listed companies in Germany were required to report only on aggregate cash compensation paid to all management directors and no details were required on individual compensation or on stock options; following the Ackermann-Mannesman scandal over CEO pay in 2000, the change in legislation requiring greater disclosure, that came in effect in 2005, was put in motion (Conyon et al. 2013, pp. 34).

The regulatory framework in each country determines not only the disclosure of executive pay but it is also important for the structure of the compensation itself. Conyon et al. (2013) conclude that in UK, France and Italy, the rise and fall of share options in executive compensation can be connected to government interventions, usually reflecting tax policies. For example, tax advantages can be conferred upon stock options by having their gains taxed as capital gains instead of as ordinary income, thus increasing their use; or, various restrictions to the tax treatment can have an opposite effect. After the Italian government intervention in 2006 which added a requirement that options must not be exercisable for at least three years after the grant and also that executives exercising options hold a portion of acquired shares for at least five years after the exercise, the use of equity-based compensation dropped immediately (Conyon et al. 2013, pp. 62).

2 Data

2.1 Sample

Our empirical analysis is based on a sample consisting of large, publicly-traded companies listed in the S&P Europe 350 index that brings together the largest European firms in terms of market capitalization. Given the type of data we need to measure CEO compensation and especially realized gains from stock-based pay, our sample cannot go beyond the publicly accountable entities such as listed companies since only these companies are required to disclose all the relevant information. An additional argument for focusing on companies in the S&P Europe 350 index is that it will allow us to compare our results with those for the US S&P 500 firms on which the research of Hopkins and Lazonick (2016) is based. Also, it will allow for further research where executive compensation will be discussed in relation to stock buybacks and other payouts as well as other financials for the same group of firms, analysed in Sakinç (2017).

The process of identifying the relevant data in the annual report or other reports dedicated to corporate governance of each company has taken a substantial investment of time, especially since additional efforts were made to ensure that the data are harmonized between countries. For this reason, we have decided to focus on the companies from five major European economies since these represent around two thirds of the companies included in the S&P Europe 350 index: France (48 companies), Germany (38), Italy (19), Sweden (24) and United Kingdom (98). Our sample is thus composed of 227 companies. Table 1 shows selected economic and financial indicators for the companies in our sample. An average company in the sample has a €25 billion market value and it employs more than 72 thousand employees. France and Germany are represented in the index with considerably larger companies in terms of sales, employment and market capitalization compared to the averages for the whole group of the five economies. Given the latest available annual reports at the time the data was gathered, the data in our sample refer to 2015 fiscal year.

Table 1: Average values of selected indicators for the companies in our sample, 2015

	Sales (€MM)	Net Income (€MM)	Total Assets* (€MM)	Total Debt* (€MM)	Market Cap.** (€MM)	Employment
France (48)	28 122	1 246	45 177	10 906	32 371	103 644
Germany (38)	39 821	1 229	59 759	19 422	35 664	111 048
Italy (19)	24 988	307	51 373	16 760	18 539	51 635
Sweden (24)	9 657	986	11 921	2 829	18 231	45 588
United Kingdom (98)	14 892	721	53 261	13 667	20 812	52 525
Total (227)	**22 154**	**910**	**48 020**	**13 089**	**25 327**	**72 323**

Source: Capital IQ and company annual reports. *Financial and real estate companies are excluded from total assets and total debt averages. **As of May 2017.

2.2 Data and data collection

The purpose of our data collection was twofold. The main one is a measure of executive compensation and its components that is based on actual realized gains from stock-based pay. Our aim is to calculate the estimated values of variable pay that the European CEOs actually receive and the relevance of stock-based pay in total CEO compensation. Our second concern is to gather qualitative data that will allow us additional insights into remuneration policies of companies, for example performance measures that determine the level of variable pay and their focus on stock market performance of the firm. The only sources of such data are the annual reports of listed firms and other official documents, such as remuneration reports or corporate governance reports. Companies present the executive pay data and details of remuneration policy in a number of ways, creating problems of comparability. The disclosures range from a single page in the annual report to an entirely separate document with several dozens of pages, depending on the country-specific regulation and the willingness of the company to share the information with the general public.

We collected several types of data on CEO pay from these reports. First, we collected the quantitative information on the values of different forms of compensation: salary, bonus, other benefits, pensions, and share-based remuneration that includes stock options and stock awards. We gathered the data needed to calculate the realized gains from stock-based pay in the fiscal year: i) in the case of stock options, this included the number of shares in the options exercised, exercise price of the option and the market price of the share on the day of exercise; ii) in the case of stock awards, it is the number of shares in the stock awards vested and the stock price on the day of the vesting. There is no standardized table that would bring this information together, and the data can be scattered in various parts of the company's documents. In addition, the terminology that the companies use is quite diverse across countries. For these reasons, this part of the data gathering was the most demanding. It was also crucial for the harmonization of the data between countries.

After identifying every different component of variable pay the CEOs received, we have categorized them according to whether they were cash or stock-based. We have done this for both types of remuneration, the one granted in 2015 to be paid later on in the years to follow, depending on certain performance criteria; and the one realized in 2015, either vested stock awards, exercised stock options or allotted multi-year cash-based bonuses. In doing so we have identified the firms that offer stock-based remuneration to their executives as well as the ones that do not offer such schemes. From the annual reports, we have also identified the data on the total employee costs and the number of employees, to be able to calculate the CEO-to-average worker pay ratio. In parallel, we have obtained the data on CEO compensation and its elements for year 2015 from Capital IQ database, to allow us to compare our realized gains measure of CEO pay with their figures which are primarily based on fair and face value calculations of stock-based pay.

Second, we collected qualitative information on the method the companies use to calculate the value of options and awards at the grant date. As long as the companies have stock-based schemes of executive pay and they specify the methods for fair value calculations, we collected such information in order to document whether European companies follow the practices that US companies use to calculate the expected value of stock options and awards. Third, we collected information on the performance measures that the companies use to determine the eligibility for variable pay, either single-year cash bonuses or multi-year stock-based pay, or the level of such pay. These variable compensation schemes are designed in such a way that they are tied to economic and financial performance metrics of the company. We were interested in whether certain financial performance metrics like earnings per share (EPS) or total shareholders return (TSR) are among the most used measures to tie pay to performance. Fourth, we have collected information on the diversity of the benchmark groups the companies use when deciding on the level of compensation to be offered to their executives. As long as the companies provide such information, we have noted whether they define peers from different industries or among the US and other non-European companies as benchmark groups.

3 Empirical findings

3.1 Realized-gains measure of CEO compensation

In this section, we review the main empirical facts relating to the actual realized gains from stock-based pay of European CEOs in our sample and the value and structure of total CEO compensation. Table 2 shows the average value (in thousand euros) of total compensation for the 226 CEOs in our sample[5], on average and by country, as well as each of its elements (fixed salary, annual bonus, other benefits, multi-year cash bonus, share awards and share options). For comparison purposes, pensions are excluded from the total amounts. The values for stock-based compensation refer to actual realized gains for the CEO, i.e. the value of vested stock awards and exercised stock options in 2015 fiscal year. To illustrate the prevalence of specific forms of CEO compensation, Table 3 shows the number of companies in the sample where each of the forms could be found in 2015, together with the share of such companies amongst all companies, by country.

Table 2: Average total CEO compensation and its components, for executives of S&P Europe 350 companies from five European countries, 2015

Form of compensation:	Fixed Salary		Annual Bonus		All Other Benefits		Non-share-based, Multi-year Bonus		Share award-based pay		Share option-based pay		Total compensation	
€000s	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
France (48)	955	16	1 213	20	276	5	75	1	1 166	20	2 264	38	**5 950**	**100**
Germany (38)	1 348	28	1 492	31	136	3	470	10	1 037	21	405	8	**4 888**	**100**
Italy (18)	1 986	53	822	22	343	9	71	2	430	11	91	2	**3 743**	**100**
Sweden (24)	1 309	37	519	15	246	7	9	0	1 480	42	0	0	**3 561**	**100**
United Kingdom (98)	1 147	20	1 026	17	191	3	0	0	3 375	57	143	2	**5 881**	**100**
All 5 Countries (226)	**1 224**	**23**	**1 074**	**20**	**218**	**4**	**102**	**2**	**2 077**	**39**	**618**	**12**	**5 312**	**100**

Source: Company annual and remuneration reports.
Note: Compensation of the CEO of Fiat is removed from the calculations.

Table 3: The number and percentage share of companies with each form of CEO compensation, for executives of S&P Europe 350 companies from five European countries, 2015

Form of compensation:	Fixed Salary		Annual Bonus		All Other Benefits		Non-share-based, Multi-year Bonus		Share award-based pay		Share option-based pay	
	#	%	#	%	#	%	#	%	#	%	#	%
France (48)	47	98	44	92	44	92	2	4	16	33	24	50
Germany (38)	38	100	37	97	38	100	18	47	22	58	3	8
Italy (18)	18	100	16	89	18	100	2	11	6	33	1	6
Sweden (24)	24	100	18	75	20	83	1	4	9	38	0	0
United Kingdom (98)	98	100	88	90	95	97	0	0	78	80	15	15
All 5 Countries (226)	**225**	**100**	**203**	**90**	**215**	**95**	**23**	**10**	**131**	**58**	**43**	**19**

Source: Company annual and remuneration reports.
Note: Compensation of the CEO of Fiat is removed from the calculations.

The tables show that there is a considerable heterogeneity among the five countries. For example, the average fixed salary paid in France constitutes only 16 percent of the total CEO pay. Together with firms from the UK, French firms pay to their CEOs smaller fixed salaries on average, while the average total pay of their CEOs is the highest. In the case of Italian firms, fixed salary presents more than half

[5] The figures of the extraordinarily highly paid CEO of Fiat, which presents an outlier, are removed from some of the calculations represented in the tables and charts of this section.

(53 percent) of total CEO pay and their share of stock-based pay in total pay is the lowest amongst the five countries.

Some forms of remuneration seem to be specific to certain countries. In the case of Germany, an important form of executive compensation that almost half of the companies use is cash-based bonuses that are paid when multi-year performance measures are met. This form of remuneration is hardly seen in other countries and is virtually non-existent in the UK where the multi-year bonuses are converted to deferred share awards and paid after they vest. In other three countries, cash-based, multi-year bonuses are used by a very limited number of companies, resulting in very low average figures for the total.

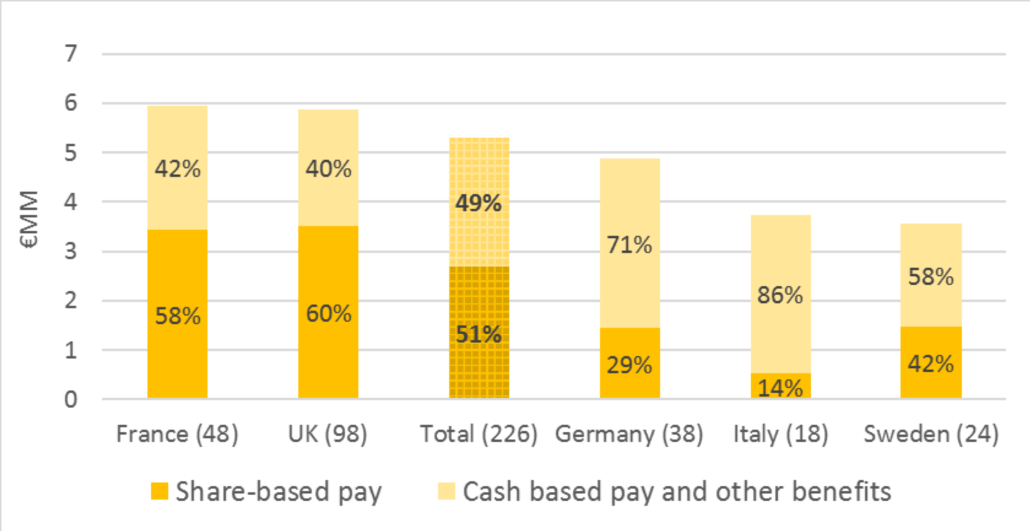
Similarly, stock options that were offered to a larger number of corporate executives and employees a decade ago (Towers Perrin 2005) currently have a relatively unimportant share in total CEO compensation in all countries but France.[6] French executives continue to exercise a great number of stock options and the realized gains they receive constitute the largest component of their remuneration, with 38 percent of the total in 2015. In other countries stock options are not a relevant part of CEO compensation. They are virtually non-existent among Swedish companies and present an unimportant share of total compensation among British companies.[7] In Italy, only one company CEO had realized gains from exercised stock option in 2015. The use of stock awards is more widespread. They represent the largest share of total compensation for the CEOs of the UK firms (57 percent), but Swedish firms are not far behind (42 percent).

Overall, Figure 1 summarizes the ratios of cash and share-based compensation in total CEO pay by country. Based on the whole sample of listed companies from the five European countries, we could assume that the share of cash-based compensation almost equals that of stock-based compensation (49 % vs. 51%, respectively). However, there are large differences among the countries. The ratio of share-based compensation is the highest among French and British firms while Italian firms (excluding Fiat) offer a very limited amount of compensation in the form of share-based instruments. Note that in the case of Sweden, the disclosure of CEOs' share-based pay in the companies' documents is less detailed than in other countries in our sample so we must take their results with caution. Swedish companies publish the total number of vested awards for the executives as a group, but some of them abstain to provide the information on realized gains from vested stock awards of the CEOs.

[6] Note that our 2015 data on the number of companies with share-based remuneration will not necessarily reflect the exact number of companies that continue to offer such compensation schemes (i.e. have granted stock-awards and stock-options to their CEOs in 2015), because our analysis of CEO compensation is based on the realized gains. As an example, in 2015, 30 out of 38 German CEOs were awarded a certain form of share-based compensation but only 24 CEOs actually received any share-based remuneration in the same year. If the performance criteria are not met or if the company started share-based programs only in the last few years, the CEO is not expected to receive any share-based compensation in 2015. The numbers in Table 3 are for the ones who actually received these forms of compensation in the 2015 fiscal year.

[7] More than half of the UK companies' 15 CEOs that have exercised stock options have exercised only SAYE (Save As You Earn) stock options which are granted in very small numbers compared to executive stock option grants. This has resulted in relatively small realized gains (not more than £10,000 per CEO, on average). Because of this, stock options present not more than 2% of total compensation for CEOs of the UK companies.

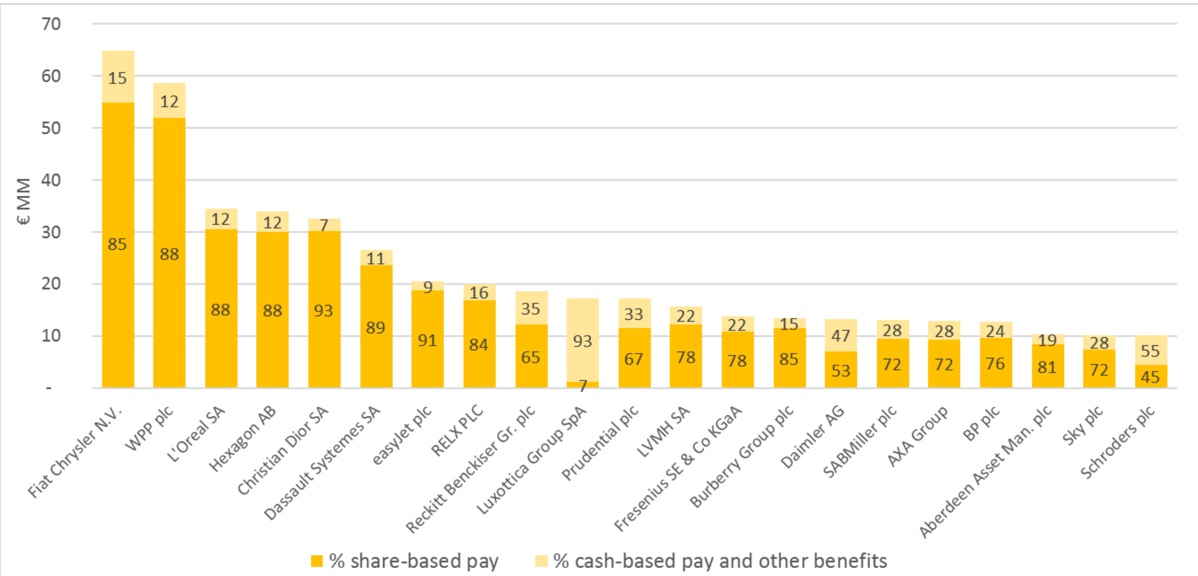
Figure 1: Average share of cash and share-based compensation in total CEO compensation, for executives of S&P Europe 350 companies from five European countries, 2015



Source: Company annual and remuneration reports.
Note: Compensation of the CEO of Fiat is removed from the calculations.

Figure 2 shows the highest-paid European executives (with total compensation above €10M) in our sample. The top-paid CEO is Sergio Marchionne of Fiat Chrysler who earned close to €69 million in 2015, with 85 percent of his pay in the form of realized gains from share awards. The average ratio of share-based pay of these 21 executives is much higher than that of all the companies in our sample. More than half of the highest-paid CEOs are from the UK and a large number of them are from the consumer goods related industries like household products, luxury goods and food.

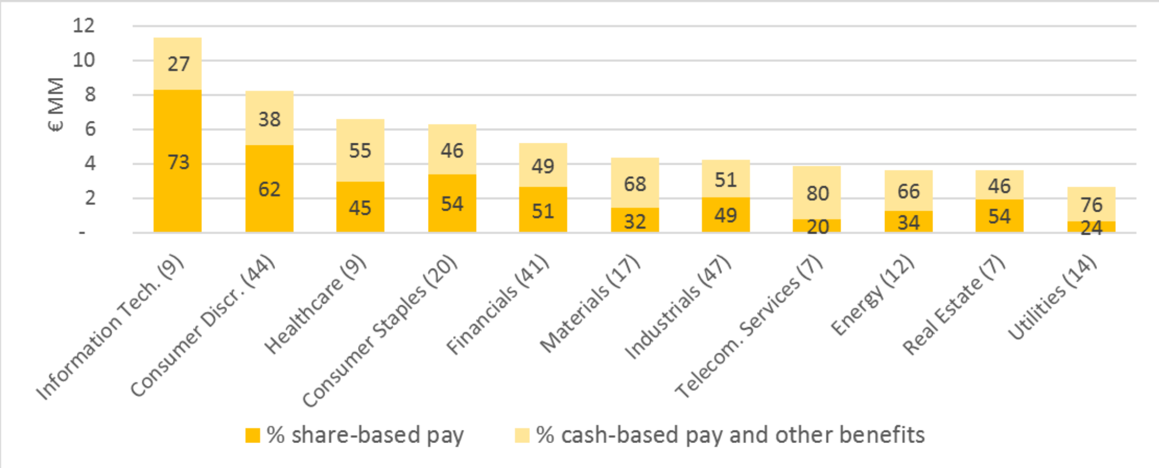
Figure 2: Highest-paid CEOs of European corporations with more than €10 million total compensation, from executives of S&P Europe 350 companies from five European countries, 2015



Source: Company annual and remuneration reports. Numbers on bars indicate the percentage share of the form of pay.

Figure 3 shows the sectoral comparison of CEO pay (note that the sample now includes the CEO of Fiat). The highest average CEO pay in Europe can be found in the IT sector and it is the same sector that has the highest average share of stock-based pay. Consumer discretionary is the second highest paid sector among all. This sector is composed of a diversified group of companies from consumer durables, services, car manufacturers, media and retailing. More than one third of the highest-paid CEOs from the previous table are in this sector. The stock-based portion of their pay (62 percent) is also considerably higher than the average. The average CEO pay of the sectors like telecommunications, energy or utilities is considerably lower and their stock-based portion is also lower than the average.

Figure 3: Average total CEO compensation and the share of stock-based pay by GICS sector, for executives of S&P Europe 350 companies from five European countries, 2015



Source: Company annual and remuneration reports. Numbers on bars indicate the percentage share of the form of pay; numbers in parentheses indicate the number of companies in each sector.

3.2 Comparison with Capital IQ data on executive compensation

The data on CEO compensation is often sourced from the existing databases including such information, such as BoardEx and Capital IQ, especially for the purposes of scientific research. We have compared the data that we have hand-collected with the data for the same European companies from S&P Capital IQ, a database offered by S&P Global Market Intelligence. The comparison, shown in Table 4, reveals substantial differences between the measures of share-based compensation and total compensation, especially for some of the countries. The reason for this is twofold. The main reason is connected to the fact that our data captures actual realized gains from stock-based pay whereas Capital IQ data record fair values of share-based pay, as explained in greater detail in Section 2. However, through the process of data collection from the companies' documents and comparing it to the Capital IQ data, we have uncovered a series of inconsistencies in the latter. They resonate with the same problem that Hüttenbrink et al. (2014) pointed out about the BoardEx data on variable compensation components of Continental European companies: namely that for the stock-based components there is no clear distinction between values granted and values paid out. Companies from different countries publish different calculations of the share-based pay in their summary compensation tables, which seem to be used for data collection by Capital IQ. Most often a more detailed examination of the text surrounding the summary tables is needed, as well as of the terminology used in each of the countries, to reveal the exact nature of the data, something that probably goes beyond the usual efforts to gather the data for a large number of companies that are included in such a database.

Table 4: Comparison of the average total CEO compensation and share-based compensation between our data and Capital IQ data, for executives of S&P Europe 350 companies from five European countries, 2015

	Our calculation (including pensions)			Capital IQ calculation (including pensions)			Difference with the CapitalIQ data			
	Share-based Pay	Total Compensation	SBP / TC (%)	Share-based Pay	Total Compensation	SBP / TC (%)	SBP Difference	TC Difference	SBP (%) Difference	TC (%) Difference
France (48)	164 661 811	285 997 243	58	80 604 951	195 860 009	41	84 056 860	90 137 234	104	46
Germany (38)	54 780 390	208 956 528	26	61 694 085	193 500 610	32	-6 913 695	15 455 918	-11	8
Italy (19)	64 185 084	132 766 444	48	15 513 177	77 811 536	20	48 671 907	54 954 907	314	71
Sweden (24)	35 512 677	97 084 677	37	3 379 910	45 831 650	7	32 132 767	51 253 027	951	112
United Kingdom (98)	344 698 921	614 711 982	56	310 609 907	628 448 945	49	34 089 014	-13 736 963	11	-2
Total (227)	**663 838 883**	**1 339 516 873**	**50**	**471 802 030**	**1 141 452 751**	**41**	**192 036 853**	**198 064 123**	**41**	**17**

Source: Company annual and remuneration reports; Capital IQ database.

For example, in their summary tables the UK companies generally provide the realized gains from stock awards, so in this case Capital IQ has captured realized gains instead of fair value and their measurement should not differ from our data. However, in many of the cases the UK companies publish the hypothetical value of the awards that are going to vest early in the following year but their performance period has already finished with the end of the fiscal year. Companies report the value of these soon-to-be-vested shares, using the current stock prices, which do not reflect the value of the realized gains. In our work, we instead calculate the value of the awards that are already vested in 2015 by multiplying the number of shares in these awards by the stock price at the day of vesting, therefore measuring true realized gain. Our measure of CEO compensation thus differs from that of Capital IQ. Another complication that results in our total compensation measures being lower than those in Capital IQ is deferred bonuses. Capital IQ wrongly collects the total value of bonuses awarded as 'bonus' even though a certain proportion of them are not paid during the fiscal year but they are converted into shares and deferred to be paid in the future. In our calculations, we extract these portions from the annual bonuses as they are neither annual nor cash-based. As a result, our non-share based portion of the compensation of the British CEOs, and thus also their total compensation, is lower compared to the Capital IQ data.

Overall, a comparison of our realized-gains measure of share-based pay with that of Capital IQ shows that in all countries except Germany Capital IQ underestimates this component of CEO compensation, substantially so in the case of France, Italy and especially Sweden.

3.3 Some qualitative data on companies' remuneration policy

In addition to quantitative data we have collected some qualitative data on CEO compensation. First, in the light of the debate on the link between pay and performance in the European companies, we have looked at the performance measures that are used to determine whether the CEO is eligible for share-based compensation and to what extent. We were interested in whether certain financial performance metrics like earnings per share (EPS) or total shareholders return (TSR) are among the major measures to which the companies tie the extent of the variable pay. When performance measures are attached to the stock market performance or any criteria based on company shares, the CEOs are given incentives to boost the stock prices of their companies which might lead to stock buybacks instead of investing in productive capabilities.

Table 5 provides the number of companies utilizing measures focusing on the stock value of the company for the bonus (upper part of the table) and the share-based pay to their CEOs (lower part of the table). Companies use these measures either as a single or the main form of measure to decide on the level of remuneration to be paid at the end of a specific performance period which lasts from one to three years in the case of bonuses and from two to four years in the case of stock options and awards. Often, they also use other quantitative and qualitative measures in addition to those represented in the table. In such cases, every single measure has a certain weight in a decision on the proportion of awards/options to be vested at the end of the performance period. The achievement of a target indexed to such performance measures determine the number of shares in the grant when it vests. In many cases, the CEOs receive a certain number of shares between the target amount and maximum which is either indexed to several times the value of the base salary, several times the number of target shares granted or in some cases to a certain proportion of the total compensation.

Table 5: Use of stock-based performance measures that determine the bonuses and stock-based pay, for executives of S&P Europe 350 companies from five European countries, 2015

	# of firms used **EPS** as a performance measure for **bonuses**	# of firms used **TSR** or share price performance as a performance measure for **bonuses**	# of firms used at least one of **EPS, TSR** or **share price performance** as a performance measure for **bonuses**	% of firms used at least one of **EPS, TSR** or **share price performance** as a performance measure for **bonuses**
France (48)	15	6	20	41,7
Germany (38)	4	3	7	18,4
Italy (19)	1	0	1	5,3
Sweden (24)	2	1	3	12,5
United Kingdom (98)	25	15	33	33,7
Total (227)	**47**	**25**	**64**	**28,2**
	# of firms used **EPS** as a performance measure for **share-based pay**	# of firms used **TSR** or **share price performance** as a performance measure for **share-based pay**	# of firms used at least one of **EPS, TSR** or **share price performance** as a performance measure for **share-based pay**	% of firms used at least one of **EPS, TSR** or **share price performance** as a performance measure for **share-based pay**
France (48)	5	27	27	56,3
Germany (38)	7	22	25	65,8
Italy (19)	1	11	12	63,2
Sweden (24)	6	7	12	50,0
United Kingdom (98)	49	75	89	90,8
Total (227)	**68**	**142**	**165**	**72,7**

Source: Company annual and remuneration reports.

The findings show that a considerable number of companies use earnings per share and total shareholder return as a performance measure to decide on the level of remuneration at the end of the period. These two measures are the principal financial performance metrics currently used by public companies all over the world, and they became the major metrics used to evaluate the overall performance of a company in the era of financialization. Twenty-eight percent of the companies in our sample use a stock-related performance measurefor the CEO bonus. The use is the highest among French and British firms with more than one third of them using at least one of these performance measures.

In the case of share-based pay, the number of companies using these measures is much higher compared to bonuses, and 73 percent of the companies use at least one of them to decide the level of share-based pay of their CEOs. The ratio is the highest among British firms. Only less than 10 percent of them use other non-stock-related measures to evaluate the level of share-based CEO pay. Other measures frequently used by companies are net income or return on capital employed, cash flow growth, market share increase, customer satisfaction index and a broad range of qualitative individual objectives for the CEOs.

As a second element of qualitative data, we have collected data on the benchmark groups the European companies use when deciding on the level of share-based compensation to be offered to their executives. We were interested in whether companies choose the benchmark among a more homogeneous group of peers from the same industry and from Europe or among a broader group of firms to benchmark the pay of their executives. Considering the very high levels of executive compensation offered by large US companies, benchmarking of European companies with their US peers can be especially problematic. Table 6 displays the use of peers to determine the level of share-based remuneration of the CEO by European companies. We only collected the data for firms which selected peers among firms either from other industries or from outside of Europe. Fifty-six percent of the firms in our sample mention at least one peer from other industries or among non-European firms. Twenty-eight percent of the firms choose peers among the US firms. The remaining companies choose their peers among European firms in the same industry or they do not provide any information.

Table 6: Benchmark groups used when deciding on the level of share-based compensation to be offered to CEOs, for executives of S&P Europe 350 companies from five European countries, 2015

	# of companies with peers from **other industries**	# of companies with peers among **US firms**	# of companies with peers among **non-US, non-European firms**	# of companies with at least one **non-European** or **out-of-sector** peer	% of companies with at least one **non-European** or **out-of-sector** peer
France (48)	17	14	4	25	52,1
Germany (38)	14	10	6	20	52,6
Italy (19)	2	5	1	5	26,3
Sweden (24)	0	1	1	1	4,2
United Kingdom (98)	59	34	18	76	77,6
Total (227)	**92**	**64**	**30**	**127**	**55,9**

Source: Company annual and remuneration reports.

Third, we have collected data on the methods the companies use for fair value calculations for their stock options and awards at grant date (Table 7). We documented three methods used by companies to estimate fair value, if such information was available. Close to 30 percent of the firms report at least one method to calculate the fair value of the stock options they grant and the most popular method is the Black-Scholes model. For awards, almost half of the companies report a method and the most popular one is the Monte Carlo model.

Table 7: Methods used for fair value calculations of stock-based CEO compensation, S&P Europe 350 companies from five European countries, 2015

	Black- Scholes or Black-Scholes-Merton		Monte Carlo		Cox-Ross-Rubinstein or Binomial model		More than one method used		No method mentioned	
	options	awards	options	awards	options	awards	options	awards	options	awards
France (48)	18	3	4	7	7	4	3	2	16	32
Germany (38)	1	1	2	9	2	1	0	2	33	25
Italy (19)	0	0	2	3	0	2	0	0	17	14
Sweden (24)	1	5	0	0	0	0	0	0	23	19
United Kingdom (98)	11	18	1	18	3	3	6	32	77	27
Total (227)	**31**	**27**	**9**	**37**	**12**	**10**	**9**	**36**	**166**	**117**

Source: Company annual and remuneration reports.

Different than the US, where SEC requires companies to use fair-value measure of CEO pay, European companies are not obliged to publish any details on fair-value estimates of the share-based remuneration offered to employees and executives. In their summary tables or tables providing the number of options and awards granted, the companies use a wide variety of methods even though they continue to calculate fair values for accounting purposes. For example, many UK firms provide the face value of the awards to be vested based on the most recent stock price averages in their summary tables. Moreover, companies either use the maximum or the target number of share options and awards to be vested, although the number of shares to be received at the end of the vesting period is proportioned to the attainment of the performance criteria.

3.4 CEO-to-average employee pay ratio

The size of the CEO compensation will also depend on the size of the company itself. In order to take this into account, we have collected from the company's annual reports the data needed to calculate the average earnings of an employee in the company. Comparing these average employee earnings with the CEO compensation allows us to measure the CEO-to-average employee pay ratio, a measure often used to assess income inequality from a corporate perspective. Table 8 provides the CEO-to-average employee pay ratio for each country in our sample.

Table 8: CEO-to-average employee pay ratio by country, for S&P Europe 350 companies from five European countries, 2015

	Average total workforce expense per employee (€)	CEO-to-average employee pay ratio
France (48)	60 425	113
Germany (37)	73 496	84
Italy (18)	69 647	54
Sweden (24)	61 860	70
United Kingdom (98)	79 646	105
Total (225)	**71 837**	**96**

Source: Company annual and remuneration reports.

Note: Porsche and Fiat are excluded from the calculations. CEO pay includes pension benefits and employee pay includes social security contributions and other benefits.

Offering highest CEO pays with the highest stock-based pay ratios on average, French and British companies also have the highest CEO-to-average employee pay among all. In interpreting these numbers, we need to keep in mind that the average employee pay differences between countries may also be dependent on the degree of internationalization of the companies in the sample as a large portion of the workforce of the companies in the sample is employed outside of their home countries.

Conclusion

This study shows the extent to which stock-based pay of CEOs in European listed firms is usually underestimated and documents the heterogeneity among countries. Measured by actual realized gains, half of the total compensation of the European CEOs in our sample is stock-based, on average. However, large differences can be observed between countries. The largest proportion of stock-based compensation can be found in companies from UK and France (60% and 58%, respectively) which does not yet reach the 76 percent of stock-based pay documented for a similar sample of US firms (Hopkins and Lazonick, unpublished data; see also (Hopkins and Lazonick 2016). The proportions of stock-based pay are much lower for companies in Germany (29%) and Italy (14% of stock-based pay). For Swedish companies, 42 percent of CEO compensation is stock-based, but due to less detailed disclosure of data these results need to be taken with caution. A comparison of realized gains measure of CEO compensation with the data from Capital IQ database, based on fair value estimates, shows that the latter underestimates the size and relevance of share-based pay, in the case of some countries dramatically.

There are considerable differences also in the relevance of certain forms of compensation. For example, fixed salary is relatively irrelevant for CEOs in France and almost half of German firms use cash-based bonuses tied to multi-year performance measures. Stock options have a relatively unimportant share of total CEO compensation in all European countries but France, whereas the relevance of stock awards is more widespread. The average ratio of stock-based pay of the highest paid European executives (those with total compensation above 10 mio EUR) is much higher than the average for our sample. The highest average CEO pay in Europe can be found in the IT sector and it is the same sector that has the highest average share of stock-based pay. The CEO-to-average-employee pay ratio is the highest in France and the UK (with the ratio of 113 and 105, respectively) while the lowest ratio can be found in Italy (54). We have looked at performance measures to which the companies tie the extent of variable pay, to examine the link between the executive pay and the focus on stock market value of the company. Especially in the case of stock-based pay, the use of measures connected with stock market performance is high, with three quarters of European companies in our sample using at least one of such measures. We have also examined the extent to which European companies use US firms as a benchmark when determining the level of stock-based pay for their CEOs. 28 percent of them use US firms for this purpose; a much smaller number of firms looks outside of European or US firms for a benchmark.

Our research findings add to the existing policy debate on transparency of remuneration policy and the link between pay and performance of executives in the EU. The current revision of the Shareholders' Rights Directive (European Parliament 2017) aims to offer the shareholders the tools to express their opinion on executives' remuneration, through a "say on pay". It also states that the companies' remuneration reports should be clear and understandable and provide a comprehensive overview of remuneration of individual executives. It puts an emphasis on harmonization and states that the Commission shall adopt guidelines to specify the standardized presentation of remuneration reports. The process to determine the elements of this standardization seems to have only just started and the directive mentions that the Commission should consult Member States before adopting the guidelines. Based on our work we propose that the Commission should insist that the companies submit executive data in a standardized form that enables international comparisons, and, above all, uses realized gains measures.

Our study is subject to limitations, which provide directions for future research. First, incentives from stock-based pay will also depend on tax treatment of exercising stock options and stock awards, the specifics of which go beyond the limits of this paper. Moreover, tax regimes are only a part of the regulatory framework that applies to the determination of executive compensation in these countries. To better understand cross-country differences in CEO compensation, we should address the differences in a) social norms, which may be reflected in corporate governance codes, b) financial regulations, and c) company law. We consider our study to be an empirical foundation for future research on the interaction between CEO pay and national institutions.

Second, to better understand the possible implications of equity-based compensation for short-termism and speculation of the CEOs, future research should focus on the relation between executive pay and stock buybacks in Europe. An important issue for study is cross-national differences in rules concerning the timing of CEO sale of shares that they acquire when options are exercised and awards vest (with some exceptions, CEOs at US firms can cash by selling shares when options are exercised or awards vest). Data on actual realized gains from stock-based pay of CEOs should be matched by the data on stock buybacks in the companies the CEOs manage. Such research would come to the core of value creation and value extraction processes in European companies. Third, because of the substantial investment of time that is needed to collect the data, our research focuses on one year only. This gives us a snapshot of the situation in European companies and has also given us the opportunity for a comparison with the US data collected and analysed by Hopkins and Lazonick. The methodology that was used should be applied to previous years and updated over time to determine CEO pay trends in Europe. In the case of US, the difference between the actual realized gains and estimated fair value of stock-based compensation was greatest in the years when the stock market was booming (Hopkins and Lazonick 2016). It would be interesting to see whether the similar was the case in Europe. Fourth, in our sample we only include countries that had CEO-level disclosure mandated since 2006. In many other Member States, shareholders do not have sufficient information on executives' remuneration since “the information disclosed by companies is not comprehensive, clear nor comparable” (European Commission 2014, pp. 28). Research would thus benefit from including a wider range of countries in the analysis.

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