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CEO PAY CONTINUES TO RISE AS TYPICAL WORKERS ARE PAID LESS

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The 1980s, 1990s, and 2000s were prosperous times for top U.S. executives, especially relative to other wage earners and even relative to other very high wage earners (those earning more than 99.9 percent of all wage earners). Executives constitute a larger group of workers than is commonly recognized, and the extraordinary pay increases received by chief executive officers of large firms had spillover effects in pulling up the pay of other executives and managers.[1] Consequently, the growth of CEO and executive compensation overall was a major factor driving the doubling of the income shares of the top 1.0 percent and top 0.1 percent of U.S. households from 1979 to 2007 (Bivens and Mishel 2013). Income growth since 2007 has also been very unbalanced as profits have reached record highs and, correspondingly, the stock market has boomed while the wages of most workers (and their families' incomes) have declined over the recovery (Mishel et al. 2012; Mishel 2013). It is useful to track CEO compensation to assess how well this group is doing in the recovery, especially since this is an early indication of how well other top earners and high-income households are faring through 2013. This paper presents CEO compensation trends through 2013 and finds:

Trends in CEO compensation last year:

- Average CEO compensation was $15.2 million in 2013, using a comprehensive measure of CEO pay that covers CEOs of the top 350 U.S. firms and includes the value of stock options exercised in a given year, up 2.8 percent since 2012 and 21.7 percent since 2010.

Longer-term trends in CEO compensation:

- From 1978 to 2013, CEO compensation, inflation-adjusted, increased 937 percent, a rise more than double stock market growth and substantially greater

than the painfully slow 10.2 percent growth in a typical worker's compensation over the same period.

- The CEO-to-worker compensation ratio was 20-to-1 in 1965 and 29.9-to-1 in 1978, grew to 122.6-to-1 in 1995, peaked at 383.4-to-1 in 2000, and was 295.9-to-1 in 2013, far higher than it was in the 1960s, 1970s, 1980s, or 1990s.
- If Facebook, which we exclude from our data due to its outlier high compensation numbers, were included in the sample, average CEO pay was $24.8 million in 2013, and the CEO-to-worker compensation ratio was 510.7-to-1.

CEO compensation relative to that of other high earners:

- Over the last three decades, CEO compensation grew far faster than that of other highly paid workers, those earning more than 99.9 percent of other wage earners. CEO compensation in 2012 was 4.75 times greater than that of the top 0.1 percent of wage earners, a ratio 1.5 higher than the 3.25 ratio that prevailed over the 1947–1979 period (this wage gain is equivalent to the wages of 1.5 high wage earners).
- Also over the last three decades, CEO compensation increased further relative to other very high wage earners than the wages of college graduates grew relative to those of high school graduates.
- That CEO pay grew far faster than pay of the top 0.1 percent of wage earners indicates that CEO compensation growth does not simply reflect the increased market value of highly paid professionals in a competitive market for skills (the "market for talent") but reflects the presence of substantial rents embedded in executive pay (meaning CEO pay does not reflect greater productivity of executives). Consequently, if CEOs earned less or were taxed more, there would be no adverse impact on output or employment.

CEO compensation trends

Table 1 presents trends in CEO compensation from 1965 to 2013.[2] The data measure the compensation of CEOs in large firms and incorporate stock options according to how much the CEO *realized* in that particular year by exercising stock options available. The options-realized measure reflects what CEOs report as their Form W-2 wages for tax reporting purposes and is what they actually earned in a given year. This is the measure most frequently used by economists.[3] In addition to stock options, the compensation measure includes salary, bonuses, restricted stock grants, and long-term incentive payouts. Full methodological details for the construction of this CEO compensation measure and benchmarking to other studies can be found in Mishel and Sabadish (2013). We make one exception to this selection criteria, which is to exclude Facebook from the samples in 2012 and 2013 (the only years for which the firm has been public). This is because the compensation of the CEO is such an outlier (compensation of $2.3 billion in 2012 and $3.3 billion in 2013) that including Facebook dramatically alters our results. We report the results excluding and including Facebook in our discussion below but exclude the firm in calculations in all the tables and figures.

CEO compensation reported in Table 1, as well as throughout the rest of the report, is the average compensation of the CEOs in the 350 publicly owned U.S. firms (i.e., firms that sell stock on the open market) with the largest revenue each year. Our sample each year will be fewer than 350 firms to the extent that these large firms did not have the same CEO for most of or all of the year. For comparison, Table 1 also presents the annual compensation (wages and benefits of a full-time, full-year worker) of a private-sector production/nonsupervisory worker (a group covering more than 80 percent of payroll employment), allowing us to compare CEO compensation with that of a "typical" worker. From 1995 onward, the table identifies the average annual compen-

TABLE 1

CEO compensation, CEO-to-worker compensation ratio, and stock prices, 1965–2013 (2013 dollars)

	CEO annual compensation (thousands)*	Worker annual compensation (thousands)		Stock market (adjusted to 2013)		CEO-to-worker compensation ratio***
		Private-sector production/ nonsupervisory workers	Firms' industry**	S&P 500	Dow Jones	
1965	$819	$39.5	n/a	570	5,889	20.0
1973	$1,069	$46.4	n/a	503	4,330	22.3
1978	$1,463	$47.2	n/a	315	2,691	29.9
1989	$2,724	$44.7	n/a	586	4,553	58.7
1995	$5,768	$45.6	$51.5	822	6,829	122.6
2000	$20,172	$47.9	$53.8	1,931	14,506	383.4
2007	$18,541	$50.4	$54.0	1,660	14,805	351.3
2009	$10,394	$52.0	$57.3	1,030	9,650	193.2
2010	$12,466	$52.7	$58.0	1,218	11,398	227.9
2011	$12,667	$52.3	$57.6	1,313	12,381	231.8
2012	$14,765	$52.0	$57.1	1,400	13,155	278.2
2013	$15,175	$52.1	$55.8	1,644	15,010	295.9
Percent change						Change in ratio
1965–1978	78.7%	19.5%	n/a	-44.8%	-54.3%	9.9
1978–2000	1,279%	1.4%	n/a	513%	439%	353.6
2000–2013	-24.8%	8.7%	3.6%	-14.9%	3.5%	-87.6
1978–2013	937%	10.2%	n/a	422%	458%	237.2

* CEO annual compensation is computed using the "options realized" compensation series, which includes salary, bonus, restricted stock grants, options exercised, and long-term incentive payouts for CEOs at the top 350 U.S. firms ranked by sales.

** Annual compensation of the workers in the key industry of the firms in the sample

*** Based on averaging specific firm ratios and not the ratio of averages of CEO and worker compensation

Source: Authors' analysis of data from Compustat's ExecuComp database, Federal Reserve Economic Data (FRED) from the Federal Reserve Bank of St. Louis, the Current Employment Statistics program, and the Bureau of Economic Analysis NIPA tables

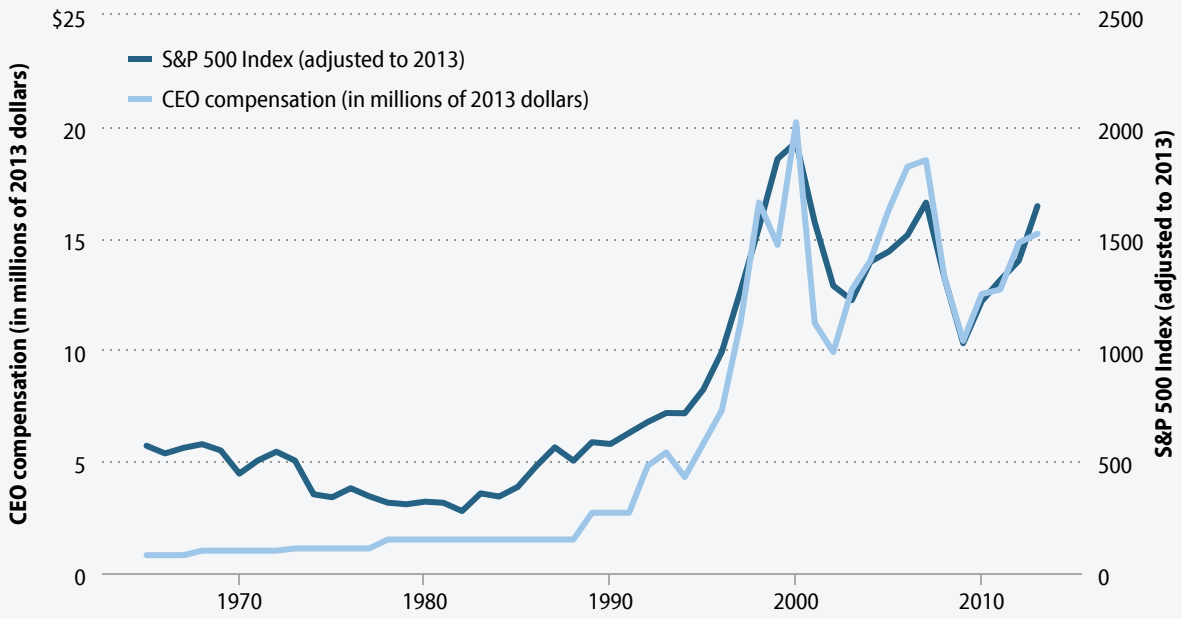
sation of the production/nonsupervisory workers in the key industries of the firms included in the sample. We take this compensation as a proxy for the pay of typical workers in these particular firms.

The modern history of CEO compensation (starting in the 1960s) is as follows. Even though the stock market (as measured by the Dow Jones Industrial Average and S&P 500 Index and shown in Table 1) fell by roughly half between 1965 and 1978, CEO pay increased by 78.7 percent. Average worker pay saw relatively strong growth over that period (relative to subsequent periods, not relative to CEO pay or pay for others at the top of the wage distribution). Annual worker compensation grew by 19.5 percent from 1965 to 1978, only about a fourth as fast as CEO compensation growth over that period.

CEO compensation grew strongly throughout the 1980s but exploded in the 1990s and peaked in 2000, increasing by more than 200 percent just between 1995 and 2000. Chief executive pay peaked at around $20 million in 2000, a growth of 1,279 percent from 1978. This

FIGURE A VIEW INTERACTIVE *on epi.org*

CEO compensation and the S&P 500 Index (in 2013 dollars), 1965–2013



Note: CEO annual compensation is computed using the "options realized" compensation series, which includes salary, bonus, restricted stock grants, options exercised, and long-term incentive payouts for CEOs at the top 350 U.S. firms ranked by sales.

Source: Authors' analysis of data from Compustat's ExecuComp database and Federal Reserve Economic Data (FRED) from the Federal Reserve Bank of St. Louis

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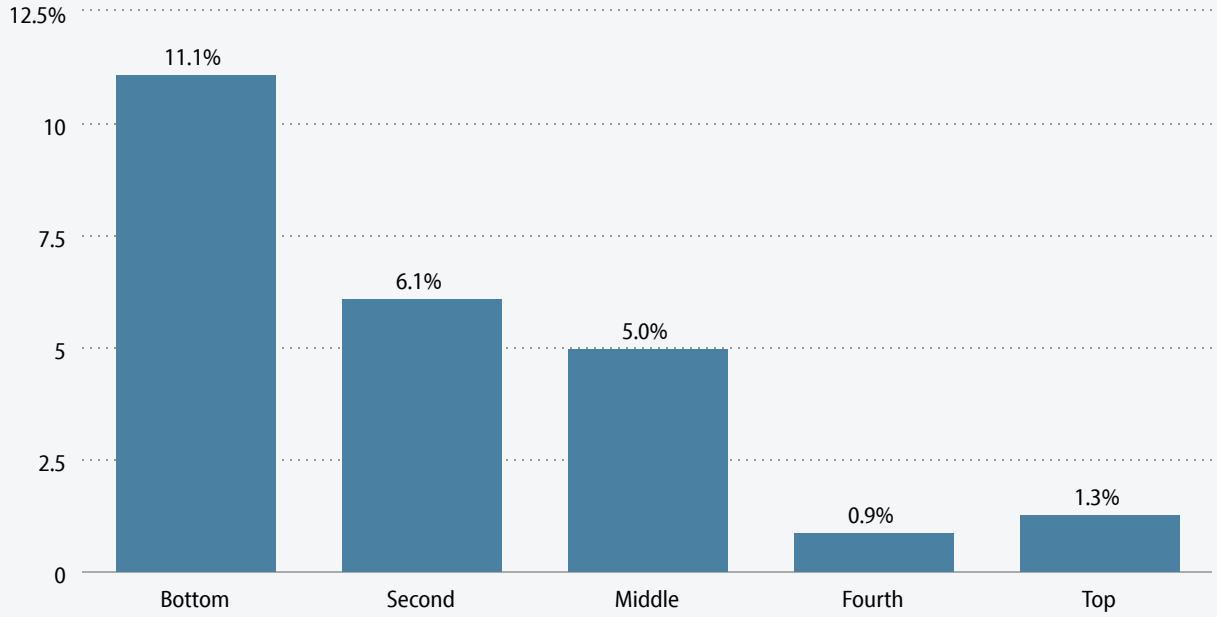
increase even exceeded the growth of the booming stock market, the value of which increased 513 percent as measured by the S&P 500 or 439 percent as measured by the Dow Jones Industrial Average from 1978 to 2000. In stark contrast to both the stock market and CEO compensation growth, private-sector worker compensation increased just 1.4 percent over the same period.

The fall in the stock market in the early 2000s led to a substantial paring back of CEO compensation, but by 2007 (when the stock market had mostly recovered) CEO compensation returned close to its 2000 level. **Figure A** shows how CEO pay fluctuates in tandem with the stock market as measured by the S&P 500 Index, confirming that CEOs tend to cash in their options when stock prices are high. The financial crisis in 2008 and the accompanying stock market tumble knocked CEO compensation down by 44 percent by 2009. By 2013, the stock market had recouped all of the ground lost in the downturn and, not surprisingly, CEO compensation had also made a strong recovery. In 2013, average CEO compensation was $15.2 million, up 2.8 percent since 2012 and 21.7 percent since 2010. CEO compensation in 2013 remains below the peak earning years of 2000 and 2007 but, as we show below, remains far above the pay levels of the mid-1990s and much further above CEO compensation in preceding decades.

The alignment of CEO compensation to the ups and downs of the stock market casts doubt on an explanation of high and rising CEO pay as reflecting the escalating individual productivity of executives, either because of larger firms, technology, or other reasons. CEO compensation often grows strongly simply when the overall stock

FIGURE B VIEW INTERACTIVE *on epi.org*

Real CEO compensation growth, by CEO pay fifth, 2012–2013



Note: CEO annual compensation is computed using the "options realized" compensation series, which includes salary, bonus, restricted stock grants, options exercised, and long-term incentive payouts for CEOs at the top 350 U.S. firms ranked by sales.

Source: Authors' analysis of data from Compustat's ExecuComp database

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market rises and individual firm stock values rise along with it. This is a market phenomenon and not one of improved firm performance: Most CEO pay packages allow pay to rise whenever the firm's stock value rises and permit CEOs to cash out stock options regardless of whether or not the rise in the firm's stock value was exceptional relative to other comparable firms. Over the entire period from 1978 to 2013, CEO compensation increased about 937 percent, a rise more than double stock market growth and substantially greater than the painfully slow 10.2 percent growth in a typical worker's compensation over the same period. If we had included Facebook in our sample then CEO compensation would have risen 1,596 percent from 1978 to 2013.

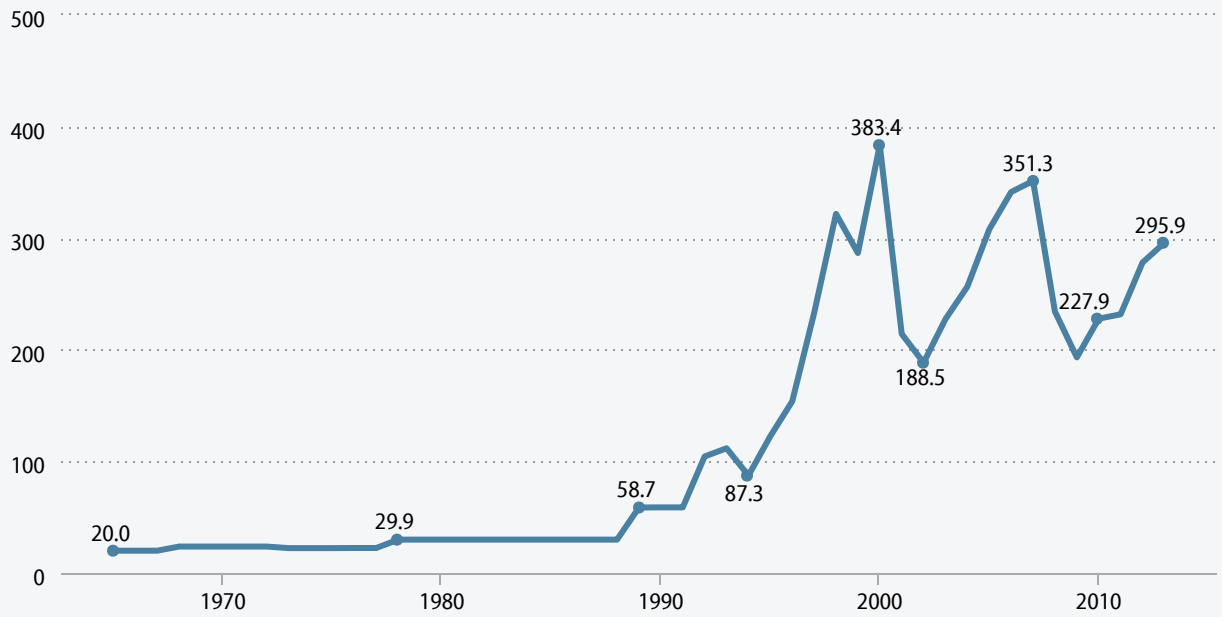
It is interesting to note that growth in CEO pay in 2013 was not driven by large increases in pay for just a few executives or just those with the highest pay. **Figure B** shows the growth in CEO pay when compensation is ranked and computed by CEO compensation fifths. CEO compensation rose across the board, and in fact grew the most in the bottom fifth, which saw an 11.1 percent increase in CEO compensation since 2012.

The increase in CEO pay over the past few years reflects improving market conditions driven by macroeconomic developments and a general rise in profitability. For most firms, corporate profits continue to improve, and corporate stock prices move accordingly. It seems evident that individual CEOs are not responsible for this broad improvement in profits in the past few years, but they clearly are benefiting from it.

This analysis makes clear that the economy is recovering for some Americans, but not for most. The stock market

FIGURE C VIEW INTERACTIVE *on epi.org*

CEO-to-worker compensation ratio, 1965–2013



Note: CEO annual compensation is computed using the "options realized" compensation series, which includes salary, bonus, restricted stock grants, options exercised, and long-term incentive payouts for CEOs at the top 350 U.S. firms ranked by sales.

Source: Authors' analysis of data from Compustat's ExecuComp database, Current Employment Statistics program, and the Bureau of Economic Analysis NIPA tables

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and corporate profits have rebounded following the Great Recession, but the labor market remains very sluggish. Those at the top of the income distribution, including many CEOs, are seeing a strong recovery while the average worker is still experiencing the detrimental effects of a stagnant labor market. Compensation for private-sector workers has fallen 1.3 percent since 2010 and remains at 2009 levels.

Trends in the CEO-to-worker compensation ratio

Table 1 also presents the trend in the ratio of CEO-to-worker compensation to illustrate the increased divergence between CEO and worker pay over time. This overall ratio is computed in two steps. The first step is to construct, for each of the largest 350 firms, the ratio of the CEO's compensation to the annual compensation of workers in the key industry of the firm (data on the pay of workers in any particular firm are not available). The second step is to average that ratio across all the firms. The last column in Table 1 is the resulting ratio in select years. The trends prior to 1995 are based on the changes in average CEO and private-sector production/nonsupervisory worker compensation. The year-by-year trend is presented in **Figure C**.

U.S. CEOs of major companies earned 20 times more than a typical worker in 1965; this ratio grew to 29.9-to-1 in 1978 and 58.7-to-1 by 1989 and then surged in the 1990s to hit 383.4-to-1 by the end of the 1990s recovery in 2000. The fall in the stock market after 2000 reduced CEO stock-related pay (e.g., options) and caused CEO compensation to tumble until 2002

and 2003. CEO compensation recovered to a level of 351.3 times worker pay by 2007, almost back to its 2000 level. The financial crisis in 2008 and accompanying stock market decline reduced CEO compensation after 2007–2008, as discussed above, and the CEO-to-worker compensation ratio fell in tandem. By 2013, the stock market had recouped all of the value it lost following the financial crisis. Similarly, CEO compensation has grown from its 2009 low, and the CEO-to-worker compensation ratio in 2013 had recovered to 295.9-to-1. Though the CEO-to-worker compensation ratio remains below its peak values achieved earlier in the 2000s, it is far higher than what prevailed through the 1960s, 1970s, 1980s, and 1990s. If Facebook were included in our sample, the CEO-to-worker compensation ratio in 2013 would have been 510.7-to-1.

CEO pay relative to that of other highly paid workers

CEO compensation has grown a great deal, but so has pay of other high-wage earners. To some analysts this suggests that the dramatic rise in CEO compensation was driven largely by the demand for the skills of CEOs and other highly paid professionals. This interpretation, then, is that CEO compensation is being set by the market for "skills" and is taken as evidence that rising CEO compensation is not due to managerial power and rent-seeking behavior (Bebchuk and Fried 2004). One prominent example of the "it's other professions, too" argument comes from Kaplan (2012a, 2012b). For instance, in the prestigious 2012 Martin Feldstein Lecture, Kaplan (2012a, 4) claimed:

> Over the last twenty years, then, public company CEO pay relative to the top 0.1 percent has remained relatively constant or declined. These patterns are consistent with a competitive market for talent. They are less consistent with managerial power. Other top income groups, not subject to managerial power forces, have seen similar growth in pay.

And in a follow-up paper for the CATO Institute, published as a National Bureau of Economic Research (NBER) working paper, Kaplan (2012b, 21) expanded this point further:

> The point of these comparisons is to confirm that while public company CEOs earn a great deal, they are not unique. Other groups with similar backgrounds—private company executives, corporate lawyers, hedge fund investors, private equity investors and others—have seen significant pay increases where there is a competitive market for talent and managerial power problems are absent. Again, if one uses evidence of higher CEO pay as evidence of managerial power or capture, one must also explain why these professional groups have had a similar or even higher growth in pay. It seems more likely that a meaningful portion of the increase in CEO pay has been driven by market forces as well.

Bivens and Mishel (2013) address the larger issue of the role of CEO compensation in generating income gains at the very top and conclude that there are substantial rents embedded in executive pay, meaning that CEO pay gains are not simply the result of a competitive market for talent. We draw on that analysis to show that CEO compensation grew far faster than compensation of other highly paid workers over the last few decades, which suggests that the market for skills was not responsible for the rapid growth of CEO compensation. To reach this finding we employ Kaplan's own series on CEO compensation and compare it to the incomes of top households, as he does, but also compare it to a better standard, the wages of top wage earners.[4] We update Kaplan's series beyond 2010 using the growth of CEO compensation in our own series. This analysis finds, contrary to Kaplan, that compensation of CEOs has far outpaced that of very highly paid workers, the top 0.1 percent of earners.

TABLE 2

Growth of relative CEO compensation and college wages, 1979–2012

	Ratio			Log ratio		
	CEO compensation to:		College wages to:	CEO compensation to:		College wages to:
	Top 0.1% households	Top 0.1% wage earners	High school hourly wages	Top 0.1% households	Top 0.1% wage earners	High school hourly wages
1979	1.18	3.33	1.40	0.164	1.203	0.338
1989	1.14	2.68	1.57	0.129	0.987	0.454
1993	1.56	3.11	1.63	0.443	1.135	0.488
2000	2.90	7.93	1.75	1.064	2.071	0.557
2007	1.49	4.45	1.76	0.397	1.494	0.568
2010	2.04	4.95	1.77	0.712	1.600	0.574
2012	1.85	4.75	1.79	0.618	1.558	0.584
Change						
1979–2007	0.31	1.12	0.36	0.23	0.29	0.23
1979–2012	0.68	1.42	0.39	0.45	0.35	0.25
1989–2012	0.72	2.07	0.22	0.49	0.57	0.13

Source: Authors' analysis of Kaplan (2012b) and Mishel et al. (2012, Table 4.8)

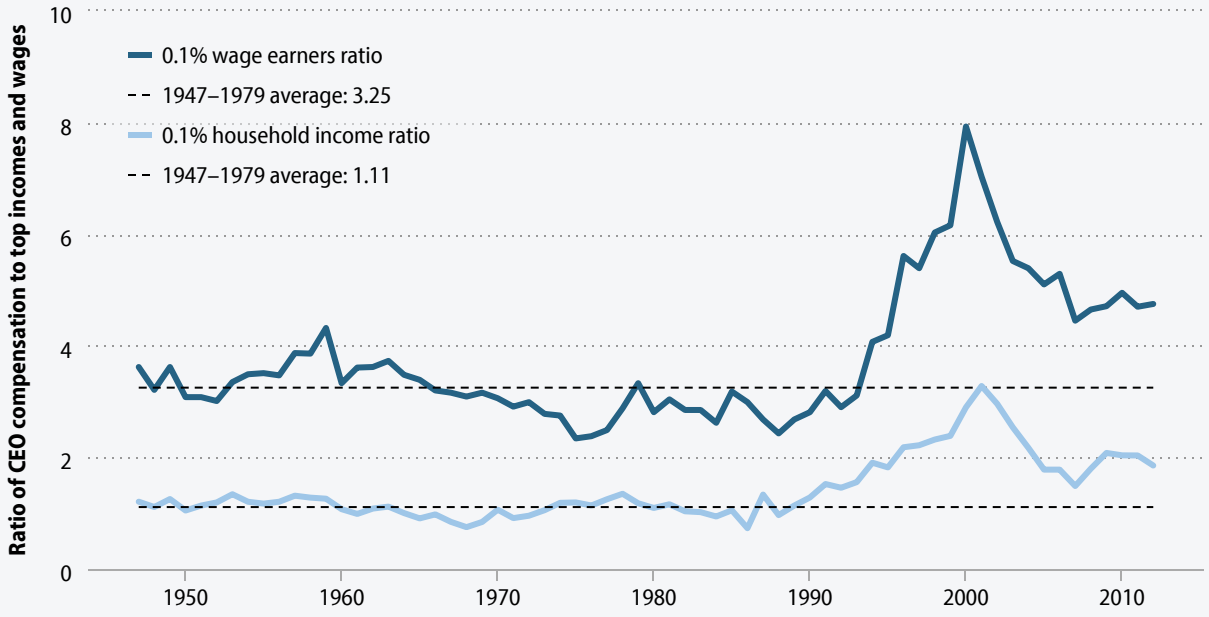
Table 2 presents the ratio of the average compensation of chief executive officers of large firms, the series developed by Kaplan, to two benchmarks. The first benchmark is the one Kaplan employs, the average *household income* of those in the top 0.1 percent developed by Piketty and Saez (2012). The second is the average annual earnings of the top 0.1 percent of *wage earners* based on a series developed by Kopczuk, Saez, and Song (2010) and updated in Mishel et al. (2012). Each ratio is presented as a simple ratio and logged (to convert to a "premium," the relative pay differential between one group and another). The wage benchmark seems the most appropriate one since it avoids issues of household demographics—changes in two-earner couples, for instance—and limits the income to labor income (excluding capital income). Both the ratios and log ratios clearly understate the relative wage of CEOs since executive pay is a non-trivial share of the denominator, a bias that has probably grown over time simply because CEO relative pay has grown.[5] For comparison purposes Table 2 also shows the changes in the gross (not regression-adjusted) college-to-high-school wage premium. The comparisons end in 2012 because 2013 data for top 0.1 percent wages are not yet available.

CEO compensation grew from 1.14 times the *income* of the top 0.1 percent of households in 1989 to 1.85 times top 0.1 percent household income in 2012. CEO pay relative to pay of top 0.1 percent *wage earners* grew even more, from a ratio of 2.68 in 1989 to 4.75 in 2012, a rise (2.07) equal to the pay of more than two very high earners. The log ratio of CEO relative pay grew 49 log points from 1989 to 2012 using top 0.1 percent household incomes as the comparison, and by 57 log points relative to top 0.1 percent wage earners.

Is this a large increase? Kaplan (2012a, 4) concluded that CEO relative pay "has remained relatively constant or declined." Kaplan (2012b, 14) finds that the ratio "remains above its historical average and the level in the mid-1980s." **Figure D** puts this in historical context by presenting the ratios displayed in Table 2 back to 1947. The ratio of CEO pay to top (0.1 percent) house-

FIGURE D VIEW INTERACTIVE *on epi.org*

Comparison of CEO compensation to top incomes and wages, 1947–2012



Source: Authors' analysis of Kaplan (2012b) and Mishel et al. (2012, Table 4.8)

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hold incomes in 2012 (1.85) was two-thirds higher than the historical (1947–1979) average of 1.11. The ratio of CEO pay relative to top wage earners in 2012 was 4.75, 1.5 higher than the historical average of 3.25 (a relative gain of the wages earned by 1.5 high wage earners). As the data in Table 2 show, the increase in the logged CEO pay premium since 1979, and particularly since 1989, far exceeded the rise in the college-to-high-school wage premium which is widely and appropriately considered substantial growth. The data would show an even faster growth of CEO relative pay if Kaplan had built his historical series using the Frydman and Saks (2010) series for the 1980–1994 period rather than the Hall and Leibman (1997) data.[6]

Presumably, CEO relative pay has grown further since 2012. As Table 1 showed, between 2012 and 2013, CEO compensation rose 2.8 percent. (Unfortunately, data on the earnings of top wage earners for 2013 are not yet available for a comparison to CEO compensation trends.) If CEO pay growing far faster than that of other high earners is a test of the presence of rents, as Kaplan has suggested, then we would conclude that today's executives receive substantial rents, meaning that if they were paid less there would be no loss of productivity or output. The large discrepancy between the pay of CEOs and other very high wage earners also casts doubt on the claim that CEOs are being paid these extraordinary amounts because of their special skills. What skills are present that are so discontinuous that they jump such a significant amount at and even beyond the point one earns more than 99.9 percent of all earners? The distribution of skills, as reflected in the rest of the wage distribution, tends to be much more continuous.

Conclusion

It is sometimes thought that the rise of CEO compensation is a symbolic issue and does not have consequences for the vast majority. However, escalating CEO compensation and, correspondingly, executive compensation more generally, have fueled the growth of top 1.0 percent incomes. Bivens and Mishel (2013) note:

> In a study of tax returns from 1979 to 2005, Bakija et al. (2010) show the trend in the shares of total income of U.S. households accruing to the top 1.0 and top 0.1 percent of households. They establish that the increases in income at the top were disproportionately driven by households headed by someone who was either an "executive" (including managers and supervisors and hereafter referred to as executives) in nonfinancial sectors or in the financial sector as an executive or other worker. Households headed by a nonfinance executive were associated with 44 percent of the growth of the top 0.1 percent's income share and 36 percent in the growth among the top 1.0 percent. Those in the financial sector were associated with nearly a fourth (23 percent) of the expansion of the income shares of both the top 1.0 and top 0.1 percent. Together, finance and executives accounted for 58 percent of the expansion of income for the top 1.0 percent of households and an even greater two-thirds share (67 percent) of the income growth of the top 0.1 percent of households. Relative to others in the top 1 percent, households headed by executives had roughly average income growth, those headed by someone in the financial sector had above average income growth and the remaining households (non-executive, non-finance) had slower than average income growth. In our view this analysis of household income data understates the role of executives and the financial sector since they do not account for the increased spousal income from these sources.

We have argued above that high CEO pay reflects "rents," meaning it does not indicate a growth of executives' individual contribution to raising output. Consequently, CEO pay could be reduced and the economy would not suffer any loss of output. Another implication of rising executive pay is that it reflects income that otherwise would have accrued to others in the economy: What the executives earned was not available for broader-based wage growth for other workers. Bivens and Mishel (2013) explore this issue in depth.

There are policies that can be used to curtail escalating executive pay and broaden wage growth for the majority of workers. Some involve taxes. Implementing higher marginal income tax rates at the very top would limit "rent-seeking" behavior and reduce the incentives for executives to push for such high pay. Legislation has also been proposed that removes the tax break for executive performance pay that was established early in the Clinton administration: By allowing the deductibility of performance pay, this tax change helped fuel the growth of stock options and other performance pay.[7] Another option is to set corporate tax rates higher for firms that have higher ratios of CEO-to-worker compensation, as is being proposed in California.[8]

Other policies that can potentially limit executive pay growth are changes in corporate governance, such as greater use of "say on pay," which allows a firm's shareholders to vote on top executives' compensation.

About the authors

Lawrence Mishel, a nationally recognized economist, has been president of the Economic Policy Institute since 2002. Prior to that he was EPI's first research director (starting in 1987) and later became vice president. He is the co-author of all 12 editions of *The State of Working America*. He holds a Ph.D. in economics from the Uni-

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Alyssa Davis joined EPI in 2013 as the Bernard and Audre Rapoport Fellow. She assists EPI's researchers in their ongoing analysis of the labor force, labor standards, and other aspects of the economy. Alyssa aids in the design and execution of research projects in areas such as poverty, education, health care, and immigration. She also works with the Economic Analysis and Research Network (EARN) to provide research support to various state advocacy organizations. Alyssa has previously worked in the Texas House of Representatives and the U.S. Senate. She holds a B.A. from the University of Texas at Austin.

Endnotes

1. In 2007, according to the Capital IQ database, there were 38,824 executives in publicly held firms (tabulations kindly provided by Temple University professor Steve Balsam). There were 9,692 in the top 0.1 percent of wage earners.

2. The years chosen are based on data availability, though where possible we chose cyclical peaks (years of low unemployment).

3. For instance, all of the papers prepared for the symposium on the top 1.0 percent, published in the *Journal of Economic Perspectives* (summer 2013), used CEO pay measures with realized options. Bivens and Mishel (2013) follow this approach because the editors asked them to drop references to the options-granted measure.

4. We appreciate Steve Kaplan sharing his series with us.

5. Temple University professor Steve Balsam kindly provided tabulations of annual W-2 wages of executives in the top 0.1 percent from the Capital IQ database. The 9,692 executives in publicly owned firms who were in the top 0.1 percent of wage earners had average W-2 earnings of $4,400,028. Using Mishel et al. (2012) estimates of top 0.1 percent wages, executive wages make up 13.3 percent of total top 0.1 percent wages. One can gauge the bias of including executives in the denominator by noting that the ratio of executive wages to all top 0.1 percent wages in 2007 was 2.14, but the ratio of executive wages to non-executive wages was 2.32. Unfortunately, we do not have data that permit an assessment of the bias in 1979 or 1989. We also do not have information on the number and wages of executives in privately held firms; their inclusion would clearly indicate an even larger bias. The IRS reports there were nearly 15,000 corporate tax returns in 2007 of firms with assets exceeding $250 million, indicating there are many more executives of large firms than just those in publicly held firms.

6. Kaplan (2012b, 14) notes that the Frydman and Saks series grew 289 percent, while the Hall and Leibman series grew 209 percent. He also notes that the Frydman and Saks series grows faster than that reported by Murphy (2012).

7. U.S. Sens. Jack Reed (D-R.I.) and Richard Blumenthal (D-Conn.) introduced legislation in 2013, Stop Subsidizing Multimillion Dollar Corporate Bonuses Act (S.1476), which would limit the tax deductibility of performance pay. Balsam (2013) estimates that between 2007 and 2010 alone, taxpayers subsidized more than $30 billion in executive performance pay because of the loophole.

8. See Reich (2014).

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