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CEO PAY BULLETIN

Growth in CEO Pay Since 1990

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The following chart sets forth CEO pay at large U.S. companies for 1990, 2000, 2010 and 2016. In addition, the chart projects CEO pay for 2020.

Median CEO Pay at Large U.S. Companies		
Year	**$ Millions**	**Change from 1990**
1990	**$2.2**	**0%**
2000	**$9.4**	**317%**
2010	**$9.9**	**341%**
2016	**$12.1**	**438%**
2020 (Projected)	**$13.8**	**514%**
Note: Dollar amounts shown in the chart were adjusted for inflation, reflecting 2018 dollars. For detail regarding the surveys on which the chart is based see Attachment A to this Bulletin.		

For purposes of the chart, CEO pay is based on proxy statement reporting. It includes:

i. Salary (reported for the year in which earned)

ii. Annual bonus (reported for the year in respect of which awarded)

iii. Long-term incentive compensation. This includes:

A. Stock-based incentive awards such as

– Stock options (and stock appreciation rights)

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– Shares of restricted stock (and restricted stock units)

– Performance shares (and performance share units)

(Stock-based incentive awards are generally reported based on grant-date values.)

B. Cash-based incentive awards. (These are generally reported for the year of earn-out.)

CEO pay (again, reflecting proxy statement reporting) also includes provision of perquisites and welfare benefits and annual accruals of pension benefits. As noted in Attachment A (Paragraph 1) to this Bulletin, the chart reflects an upward adjustment to the median CEO pay for 1990 from that shown in the applicable survey. The adjustment for 1990 was made because perquisites, benefits and certain forms of long-term incentive compensation were not included in that survey.

Over the same periods of time, the Gross Domestic Product (GDP), the Consumer Price Index (CPI) and the S&P 500 Index increased (or, in the case of 2020, are projected to increase) as follows:

Year	GDP		CPI		S&P 500 Index	
	$ Trillions	Change from 1990	Index Value	Change from 1990	Index Value	Change from 1990
1990	**$9.4**	**0%**	**131**	**0%**	**645**	**0%**
2000	**$13.1**	**40%**	**172**	**32%**	**2,089**	**224%**
2010	**$15.6**	**67%**	**218**	**67%**	**1,317**	**104%**
2016	**$17.7**	**89%**	**240**	**84%**	**2,199**	**241%**
2020 (Projected)	**$19.2**	**105%**	**256**	**96%**	**3,095**	**380%**

Note: For each of the years 1990, 2000, 2010 and 2016 the sources of information are as follows:

- For GDP: U.S. Bureau of Economic Analysis. (GDP numbers are inflation-adjusted.)
- For CPI: U.S. Bureau of Labor Statistics. (The reference base period is 1982-1984 (100).)
- For S&P 500 Index: Yahoo! Finance. (Index value for a year represents the average daily S&P 500 Index value for that year adjusted for inflation.)

Projected values for 2020 were calculated using the average compound annualized growth rates for the GDP, CPI and S&P 500 Index, respectively, for the period from 2010 to 2016.

Factors Causing Increase in CEO Pay

Following are factors that have contributed to the steady rise in CEO pay since 1990.

1. <u>Public disclosure of CEO pay</u>.

The purpose in the proxy statement disclosure of CEO pay, starting in the 1930s, has been to inform stockholders of the levels of top management pay at their respective companies. It has enabled them to compare the pay of the top management at the company they own with that of top management at other companies. At the same time, it has enabled members of top management to see what members of top management at other companies are being paid. This has led to pressure on companies, including their boards of directors, to "keep up with the Jones," with a "ratcheting up" effect on CEO pay generally.

2. <u>Growth in size and complexity of public companies and the jobs of running them</u>.

As a business enterprise grows in size and complexity so does the CEO job. There is a correlation between the size of a business and the pay associated with the CEO position. According to an article by Professor Kevin F. Hallock of Cornell University, "for a 10-percent increase in company size, CEO pay goes up by about 3 percent." Hallock, Kevin F.,"The Relationship Between Company Size and CEO Pay," *Workspan Magazine* (February 2011). Thus, if a company doubles in size, an increase of approximately one-third in the CEO's pay could be reasonably expected.

As the enterprise grows the risks and opportunities associated with the CEO's decisions grow. The scalability of this risk/opportunity decision-making has been commented on by Professor Alex Edmans of the London Business School:

> "A CEO's actions are scalable. For example, if the CEO improves corporate culture, it can be rolled out firm-wide, and thus has a larger effect in a larger firm. One percent is $20 million in a $2 billion firm, but $200 million in a $20 billion firm. In contrast, most employees' actions are less scalable. An engineer who has the capacity to service 10 machines creates, say, $50,000 of value regardless of whether the firm has 100 or 1,000 machines. In short, CEOs and employees compete in very different markets, one that scales with firm size and one that scales less." Edmans, Alex, "Why We Need to Stop Obsessing Over CEO Pay Ratios," *Harvard Business Review* (February 23, 2017).

3. **Growth in stock market values**.

CEO pay reflects a "custodial" pay factor. To an extent, CEO pay resembles the pay of a trustee or other custodian whose fees are tied to the values of the assets under management. Among other things, the CEO is managing the value of the company, as reflected in the case of a public company in its stock market value. CEO pay, expressed as a percentage of a company's stock market value, does not ordinarily reach the levels customary for trustee fees expressed as a percentage of value of assets being managed. Annual fees equal to one or two percent of assets under management plus additional fees for income and gains realized are not unusual fees for bank trustees. The annual pay of a CEO, generally, is much less than 1 percent of the market cap of the company being managed.

4. **The increasing proportion of CEO pay tied to long-term incentive awards**.

Compared to CEO pay in 1990, CEO pay today is much more tied to long-term incentive awards. See, for example, the research paper by Edmans, Gabaix and Jenter, entitled "Executive Compensation: A Survey of Theory and Evidence" (cited in Attachment A (Paragraph 2) to this Bulletin). The shift in CEO pay toward long-term incentive awards not only means delayed receipt of the compensation but increased risk that the executive may not receive it (or may receive only a portion of the target award). The risks include market risk for equity awards, performance risk for performance-based awards and risks that the CEO's employment may be terminated under circumstances in which the award is forfeited. It is likely that the delay in payment and the increased risks have resulted in awards being larger than they would have been if the awards, for example, had been simply time-vested over a one-year or two-year period. The award values reported in proxy statements generally do not take into account the delay and risk factors noted. For a discussion of how the factors noted may have impacted the values of incentive awards to executives receiving the awards, see the article by the author, "What Is the Real Value of an Incentive Compensation Award When It Is Made?", published in the *New York Law Journal* September 23, 2016.

5. **CEO turnovers**.

According to an article published by Equilar, for S&P 500 companies the median CEO tenure in 2017 was 5.0 years (a drop from 5.1 years in 2015 and 2016, 5.6 years in 2014 and 6.0 years in 2013). Marcec, Dan, "CEO Tenure Drops to Just Five Years," *Equilar* (January 19, 2018). When companies appoint a new CEO they often pay the new CEO more than they paid the departing CEO. This is especially so if the new CEO comes from outside the company. Thus, CEO turnover itself becomes a factor in increasing CEO pay.

Conclusion

For the period 1990 through 2016 median CEO pay grew by over 400 percent. If annualized CEO pay growth thus far in the current decade continues for the rest of the decade, the end-of-decade median CEO pay level will have increased by more than 500 percent over the median CEO pay in 1990. Median CEO pay has grown at a rate faster than the indices noted at the beginning of this Bulletin. As also noted in this Bulletin, numerous factors have contributed to this. The most important probably is the proxy statement disclosure of CEO pay starting in the 1930s. The increasing portion of long-term incentive awards as part of annual CEO pay and the decade-by-decade growth of the stock markets also have been significant factors. Such factors are likely to cause continuing increase in CEO pay for the foreseeable future.

<u>Attachment A</u>

Notes to the Chart entitled "Median CEO Pay at Large U.S. Companies"

The data shown in the chart is derived from three different surveys: One survey reported the 1990 data, a second reported on 2000 and 2010 and a third reported on 2016. While the three surveys covered many of the same companies, there were differences in some of the companies covered and in the size of the samples.

1. Subject to an adjustment noted in the next sentence, the median CEO pay shown for 1990 is based on the median CEO pay for 1990 shown in a research paper by Hall, Brian J. and Liebman, Jeffrey B., "Are CEOs really paid like bureaucrats?" (Quarterly Journal of Economics (1998), Vol. CXIII, 653–691), reflecting median CEO pay for the largest U.S. companies (approximately 400 companies). The chart makes adjustment to the median CEO pay shown in the research paper because the paper shows CEO pay as the sum of salary, bonus and grant-date values of stock options only. The paper does not reflect other long-term incentives or other compensation elements. The author of the Bulletin applied a factor of 1.2 to the paper's median CEO pay for 1990 to take this into account.
2. The median CEO pay figures shown for 2000 and 2010 are based on median CEO pay figures for 2000 and 2010, respectively, shown in a research paper by Edmans, Alex, Gabaix, Xavier and Jenter, Dirk, "Executive Compensation: A Survey of Theory and Evidence" (Handbook of the Economics of Corporate Governance (2017), Vol. 1, Chapter 7, 383-539 (edited by Hermalin, Benjamin E. and Weisbach, Michael S.)). The CEO pay figures, in turn, are based on ExecuComp data, reflecting median CEO pay for S&P 500 companies.
3. The median CEO pay for 2016 is based on a report by Tonello, Matteo, Hodgson, Paul and Reda, James F., "CEO and Executive Compensation Practices – 2017 Edition," (published by the Conference Board in collaboration with Arthur J. Gallagher & Co. and MyLogIQ in August 2017), reflecting median CEO pay for S&P 500 companies.
4. The projected median CEO pay for 2020 was calculated using the average compound annualized growth rate of median CEO pay values for the period from 2010 to 2016.