
SPIN-OFF REPORT COMPENDIUM

December 2020

Murray's Musings

THE SOCIOLOGY (AND TIPPING POINTS) OF STOCK COMPENSATION

The discussions among investors surrounding the subject of equity compensation have all related to the proper accounting treatment of such compensation. There has been almost no discussion in the *investment* community around the subject of how this might motivate employees. In a sense, equity compensation is variable insofar as the ultimate price at which an employee might sell the associated shares is necessarily unknown at the time the compensation is awarded.

No large-scale empirical data has been collected on companies that use equity compensation and have experienced long periods of stock underperformance or, worse, negative performance. A share price decline might only be a temporary diminution of wealth to an investor. Yet, to employees in a company where equity is used as a form of compensation, that decline is the arithmetical equivalent of reducing their compensation.

To illustrate this point, consider an imaginary employee who receives a \$100 annual salary at an imaginary company. Of course, this must be an imaginary employee, since no one could subsist on a \$100 a year; this is an easier illustrative device than manipulating large numbers. The reader can make the figures more realistic by multiplying by the coefficient necessary to approach an actual salary (e.g., for a \$200,000/year salary, multiply all the other figures by the coefficient of 2,000).

This employee with a \$100 annual salary will receive equity compensation in the form of options. Let us assume that the stock in question sells at \$100/share and that the strike price of the option is \$110. For illustrative purposes only, the imaginary option contract for the imaginary employee will be for a single share (instead of the usual 100-share contract size). This price differential is necessary so that the option award will not be taxable to the employee at the time of issuance. The life of the option is three years.

Let's assume that the Black Scholes value of the option is \$10 per contract, keeping in mind that each contract in this imaginary example is one share, not 100 shares. The Black Scholes value is the generally agreed upon value that will appear on the income statement as stock compensation expense, and it is tax deductible by the company. This is in accordance with generally accepted accounting principles (GAAP). Given a federal corporate tax rate of 21%, the actual after-tax cost to the corporation of the stock option award would be \$7.90 (the \$10 Black Scholes value less a savings of \$2.10).

The recipient of the stock option award, obviously, is completely uninterested in the corporate accounting treatment. That employee must make some estimate as to the future stock appreciation, since this will determine the economic value to him or her of the option grant.

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Let's assume that the recipient in our imaginary example believes that the stock in question will appreciate 30% per annum and, in fact, it does so, to a price of \$219.70 by the option expiration date. At that time, the recipient buys stock at the option exercise price of \$110 and sells stock at \$219.70, for a three-year profit of \$109.70. From the perspective of the option recipient, the pre-tax, three-year total compensation is:

$$\begin{aligned} & \$300 \text{ in salary } (\$100/\text{year for 3 years}) \\ & + \$109.70 \text{ profit (option exercise)} \\ & = \$409.70 \text{ three-year total compensation} \\ & \div 3 \text{ years} = \$136.57 \text{ per year on average} \end{aligned}$$

A 30% annual return on a stock might seem an aggressive assumption, but many technology stocks in the past decade have exhibited this level of performance. One can well understand why this would contribute to an employee being loyal, productive, and contented.

Still, a 30% annual rate of return is not sustainable, especially for firms that have already attained market capitalizations exceeding \$1 trillion. What if the future annual share price appreciation is, instead, likely to be more in the range of 12% instead of 30%, considering the large size of such firms and the natural limits on business expansion? The imaginary employee's compensation in that case would have declined as illustrated here:

$$\begin{aligned} & \$300 \text{ in salary } (\$100/\text{year for 3 years}) \\ & + \$30.49 \text{ profit/share } (\$140.49 \text{ share price at the end of 3 yrs. at 12\% annual} \\ & \quad \text{appreciation} - \$110/\text{share exercise price} = \$30.49) \\ & = \$330.49 \text{ three-year total compensation} \\ & \div 3 \text{ years} = \$110.16 \text{ per year on average.} \end{aligned}$$

Viewed from the employee's perspective, the annual compensation has declined from \$136.57 to \$110.16, or by 19.3%/year. Moreover, this decline would happen *while the company profits were still growing and achieving record results each year.*

The company could, in theory, correct for this problem by increasing the option grant. For example, instead of awarding one option contract, the imaginary employee might be awarded three contracts. The employee would now benefit from the appreciation of 300 shares to \$140.49 each, from an initial price of \$100. With an exercise price of \$110/share, this is a profit of \$30.49 per each option contract. Thus, the employee's position at the end of the three years is as follows:

$$\begin{aligned} & \$300 \text{ in salary } (\$100/\text{year for 3 years}) \\ & + \$ 91.47 \text{ profit } (\$30.49 \text{ profit/share} \times 3 \text{ option contracts}) \\ & = 391.47 \text{ three-year total compensation} \\ & \div 3 \text{ years} = \$130.49 \text{ per year on average} \end{aligned}$$

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This is still a 3.75% reduction from the prior 3-year compensation level of \$136.57. One might well wonder if this would be acceptable to the employee during a period when the company's reported profits continue to rise each year.

The *company's* perspective on increasing the number of option grants is somewhat different. Recall that in this example, the Black Scholes option value for accounting purposes is assumed to be \$10/contract. The company now issues three contracts as opposed to one. The option expense is now \$30 as opposed to \$10. In this scenario, the company's profits exclusive of the option or stock compensation increase 12% a year, or 40.5% over the course of three years, yet stock compensation expense on the income statement will actually triple in cost to the company, even if not in value to the employee. The increase in stock compensation expense, in fact, might be large enough to create an earnings decline, even despite 12% annual profit growth.

The essential point is that even in this case, when the corporation agrees to triple the amount of stock-based compensation, the employee's total compensation is in decline. Moreover, one might suspect that the imaginary employee would not seek only compensation equivalent to that of prior years, but might also feel entitled to a share in the company's profit growth and might reasonably expect a 12% rate of compensation growth commensurate to the corporation's growth rate.

To achieve that parity, if the prior 3-year average annual compensation was \$136.57, a 12% compensation growth rate would require \$152.96 in the fourth year, \$171.31 in the fifth year, and \$191.87 in the sixth year. Such levels of compensation are not possible without the issuance of a much greater number of option contracts, and that would probably involve intolerable dilution from the perspective of company management or shareholders.

The only possible solution would be to increase the level of cash compensation. This might not be an issue if the revenue and profit of the company expand at a rate sufficient to permit such compensation, but it might pose a problem if the name of the imaginary company were, say, Apple. Apple had the following net income for the past five years.

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Table 1: Apple Net Income

(\$ in billions)

2016	\$45.687
2017	48.351
2018	59.531
2019	55.251
2020	57.411

Source: Company filings

Apple's rate of profit growth has been 5.88% a year, and the stock has appreciated by 39.24% per year in the same period. In the fiscal year ended September 2020, the company's stock compensation expense was \$6.829 billion. This is not at all arithmetically equivalent to paying its employees \$6.829 billion in cash. This figure is the Black Scholes value as required by GAAP accounting for inclusion on the income statement. The economic value of the options compensation to the employees is far greater than the accounting value. This is also true of the stock compensation awards in the prior four years.

To illustrate, say that the average stock option at issuance is 10% out of the money. If Apple stock were to appreciate by only 9.9% cumulatively over the course of the next three years, the options holders would receive no value from the options, which is to say no incremental compensation above their cash compensation. Apple's prior four years' annual earnings growth rate was 5.88% per annum. A rate of growth for the next three years of 3% per annum is surely not implausible, yet if it were to happen, it would surely create a significant reduction in the compensation received by Apple employees considered to be important enough to receive stock compensation.

Of course, it is neither the practice nor even the capability of a corporation to continually calculate the profit made by its employees on stock options. Once exercised, the employee is entirely at liberty to hold the shares or sell them. Some employees probably exercise and sell immediately while others might hold them for lengthy periods of time. Many employees will effectively be forced to sell shares to pay for the option exercise in the "cashless exercise" process. Other employees will be forced to sell to pay taxes due on the gain. It is not likely that the employee profit number can be known by the company management.

Yet, it is this profit figure that forms the employee compensation expectation.

Apple's \$6.829 billion stock compensation in 2020 represents the *accounting* value and not the *economic* value of the awards to the employees, as noted above. However, let's just say that the much lower accounting value did represent the economic value of the compensation. Apple has 137,000 employees. The average value per employee would then be \$49,847, from which the federal government would deduct 15% for capital gains taxes and California would deduct about 13% for income tax. These tax presumptions are for illustrative purposes only, since not all Apple employees reside in California, but the California employees would pay a total of 28% in taxes, leaving a \$35,889 net average stock option compensation .

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Apple is not a manufacturing firm. It is an intellectual capital firm, with employees who are generally highly compensated. It has had the luxury of third-party capital—the equity market—as opposed to the company itself, effectively funding much of the needed compensation. If it were ever necessary for the company to fully compensate its staff without meaningful contribution from the equity market, the sociology of the company around such issues of both management and employee expectations for cash salary and bonuses, retention incentives and loyalty, pre- and post-tax earnings and expenses, would radically change, as would the corporate profit margins.

This is a form of self-reference paradox. Usually, it is profit margins that impact stock prices, not the other way around. But in the world of equity compensation—and not yet a point of discussion in the world of equity investing—it is a poorly performing stock (even in a profitable and growing company) that could actually be the catalyst to lower profit margins.

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