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Executive Stock Options

CEOs of the largest U.S. companies now receive annual stock option awards that are larger on average than their salaries and bonuses combined. In contrast, in 1980 the average stock option grant represented less than 20 percent of direct pay and the median stock option grant was zero. The increase in these options holdings over time has solidified the link between executive pay —broadly defined to include all direct pay plus stock and stock options revaluations—and performance. However, the incentives created by stock options are complex. To the extent that even executives are confused by stock options, their usefulness as an incentive device is undermined.

In **The Pay to Performance Incentives of Executive Stock Options** (NBER Working Paper No. 6674), author **Brian Hall** takes what he calls a "slightly unusual" approach to studying stock options. He uses data from stock options contracts to investigate the pay-to-performance incentives that would be created by executive stock options if they were well understood. However, interviews with company directors, CEO pay consultants, and CEOs, summarized in the paper, suggest that the incentives are often not well understood—either by the boards that grant them or by the executives who are supposed to be motivated by them.

Hall addresses two main issues: first, the pay-to-performance incentives created by the revaluation of stock option holdings; and second, the pay-to-performance incentives created by various stock option grant policies. He initially characterizes the incentives facing the "typical" CEO (with typical holding of stock options) of the "typical" company (in terms of dividend policy and volatility, both of which affect an option's value). He uses data on the compensation of CEOs of 478 of the largest publicly traded U.S. companies over 15 years, the most important detail being the characteristics of their stock options and stock option holdings.

His first question concerns the pay-to-performance incentives created by existing stock option holdings. Yearly stock option grants build up over time, in many cases giving CEOs large stock-option holdings. Changes in firm market values lead to revaluations—both positive and negative—of these stock options, which can create powerful, if sometimes confusing, incentives for CEOs to raise the market values of their companies.

Hall's results suggest that stock option holdings provide about twice the pay-to-performance sensitivity of stock. This means that if CEO stock holdings were replaced with the same *ex ante* value of stock options, the pay-to-performance sensitivity for the typical CEO would approximately double.

Moreover, if the current policy of granting at-the-money options were replaced by an *ex ante* value-neutral policy of granting out-of-the-money options (where the exercise price is set equal to 1.5 times the current stock price), then performance sensitivity would increase by a moderate amount—approximately 27 percent. However, the sensitivity of stock options is greater on the upside than on the downside.

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Hall's second question is how the pay-to-performance sensitivity of yearly option grants is affected by the specific option granting policy. Just as stock price performance affects current and future salary and bonus, it also affects the value of current and future stock option grants. Independent of how stock prices affect the revaluation of old, existing options, changes in the stock price can affect the value of future option grants, creating a pay-to-performance link from option grants that is analogous to the pay-

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to-performance link from salary and bonus.

Stock option plans are multi-year plans. Thus different option-granting policies have significantly different pay-to-performance incentives built in, since changes in current stock prices affect the value of *future* option grants in different ways. Hall compares four options-granting policies. These create dramatically different pay-to-performance incentives at grant date. Ranked from most to least high-powered, they are: up-front option grants (instead of annual grants); fixed number policies (the number of options is fixed through time); fixed value policies (the Black-Scholes value of options is fixed); and (unofficial) "back door re-pricing," where bad performance this year can be made up for by a larger grant next year, and vice-versa.

Hall notes that because of the possibility of back-door repricing, the relationship between yearly option awards and past performance can be positive, negative, or zero. His evidence, however, suggests a very strong positive relationship in the aggregate. In fact, Hall finds that (even ignoring the revaluation of past options grants) the pay-to-performance relationship in practice is much stronger for stock option grants than for salary and bonus. Moreover, consistent with expectations, he finds that fixed number plans create a stronger pay-to-performance link than fixed value policies. In sum, multi-year grant policies appear to magnify, rather than reduce, the usual pay-to-performance incentives that result from CEO holdings of past options. —Andrew Balls

Consequences of the Americans With Disabilities Act

In **Consequences of Employment Protection? The Case of The Americans With Disabilities Act** (NBER Working Paper No. 6670), co-authors **Daron Acemoglu** and **Joshua Angrist** ask whether the ADA accomplishes its mission of increasing employment and retention of the disabled, while keeping wages on par with non-disabled employees, and whether the ADA adversely affects employment of the non-disabled, as early critics of the Act predicted it would. Finally, they inquire, has the ADA resulted in employer costs high enough to reduce the overall level of employment for all workers?

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The ADA, which went into effect in 1992, prohibits discrimination on the basis of disability in hiring, wage determination, and firing, and requires that employers offer reasonable accommodations to disabled workers, such as wheelchair access. A Presidential committee estimates that the average employer paid $930 per worker accommodation since the law took effect. Critics of the ADA worried about the employment consequences of these costs and the possible costs arising from litigation to enforce ADA employment provisions.

The Equal Opportunity Employment Commission (EEOC), the agency charged with enforcement of the ADA, received more than 90,000 discrimination complaints between 1992 and 1997. Approximately 29 percent of these charges were for failure to provide adequate accommodations, 10 percent for hiring violations, and nearly 63 percent for wrongful termination. Since July 1992, employers have paid more than $174 million in EEOC settlements over ADA complaints, not counting administrative costs and legal fees. The threat and actual pursuit of litigation has also spurred the development of the Employment Practices Liability Insurance (EPLI) market.

Using data from the Current Population surveys for 1988–97, the authors find that the ADA had no effect on the wages of disabled workers, which are still approximately 40 percent below those of the non-disabled. On the other hand, employment rates for disabled men in all age categories, and disabled women under the age of 40, fell sharply after the ADA. This decline represents a clear break from past trends for both disabled and non-disabled workers, and therefore seems likely to have been caused by the ADA. Additional evidence for this claim is the finding that mid-sized companies show the most pronounced decrease in hiring the disabled. Large companies probably have sufficient resources to absorb compliance costs, according to the authors, while small companies are exempt from the ADA requirements. Also, in states with large numbers of ADA-related discrimination cases in previous years, fewer disabled people are hired afterwards. This too suggests that concern about costs from ADA provisions may have been driving the decline in disabled employment.

Although there appear to have been affects on the disabled, there is no evidence the ADA affects the hiring or employment of non-disabled workers, suggesting that its unintended negative effects are confined to the protected group.

The authors' findings regarding the ADA's negative effects on employment of the disabled take into account employment trends, composition effects, and changes in Supplemental Security Income (SSI) and Disability Insurance (DI) participation. Controlling for these variables is critical, since one of the by-products of the societal attention to disabled persons has been that there is less social stigma attached to claims of disability. And disability claims

under SSI and DI did increase sharply over the study period.

The ADA has served as a battleground for competing ideologies. Some critics of the Act see it as threatening employment-at-will and making the U.S. labor market more like Europe's. ADA proponents see the Act as creating a more inclusive labor market, without increasing employer costs or reducing overall employment. The authors show that while the evidence for negative effects of the ADA on disabled employment levels is broadly consistent, the negative effects seem to work through reduced hiring, with little evidence of an impact on job loss. This finding is consistent with a view that disabled worker accommodation costs have been higher than the employment-protection costs of litigation for wrongful termination.

—Les Picker

Pensions Are Important to Retirement Saving— Households on the Verge of Retirement Are Better Prepared Than Many Expect

Some economists suggest that pensions do not add to "retirement wealth"—which includes the value of private pensions, Social Security, homes, and other assets—because, for a variety of reasons, higher pension values are offset by reduced saving held in other forms. However, according to a recent study by NBER Research Associate **Alan Gustman** and co-author **Thomas Steinmeier,** "the overall effect of pensions is to increase total wealth, probably by considerably more than half the value of the pension."

In **Effects of Pensions on Savings: Analysis with Data from the Health and Retirement Study** (NBER Working Paper No. 6681), the authors explain that pensions cover about two thirds of the families approaching retirement, mainly those in middle and upper income brackets, and on average account for one quarter of retirement wealth. Much of this wealth is new saving, they write. Moreover, although there has been concern that those leaving "pension jobs" lose a substantial part of their pensions, this study finds that such pension losses are not severe, amounting to 12 percent or less of the total value of pensions held. The study also explores the other legs of the retirement stool: Social Security and saving held in the form of other wealth. It finds that each household with a member nearing retirement has on average about a half million dollars in retirement wealth, with Social Security accounting for about a quarter and other assets accounting for about half of retirement wealth.

Gustman and Steinmeier reckon that this retirement wealth is adequate to provide a reasonable standard of living in retirement for most households in their sample, with a member born in 1931–41. The wealth of the median households of those aged 50 to 60 in 1992 would finance an annuity equal to 79 percent of their final year's earnings, while still guaranteeing a surviving spouse two thirds of the basic benefit. Including the saving that will be undertaken and the added value of the pension that these households will enjoy in the seven years until retirement, the median household will have enough wealth to replace over 60 percent of final earnings (in real terms) throughout their retirement, again with two thirds of the benefit available for a surviving spouse.

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Although some households are inadequately prepared for retirement, Gustman and Steinmeier suggest that we are far from the retirement crisis often pictured in the press. When pensions and Social Security are counted along with other wealth, total retirement wealth represents about 40 percent of lifetime earnings throughout almost the entire lifetime earnings distribution. Of those without pensions, a substantial subgroup holds business or property wealth. For some of the poorer households, Social Security replaces a substantial fraction of their earnings. However, about a quarter of households have no pension or business wealth and only limited Social Security, and thus are not well prepared for retirement.

Households will be in worse shape if Social Security benefits are sharply reduced, the authors note. Social Security, one leg of the retirement stool, is facing severe financial problems which are already apparent for this generation on the verge of retirement. Their Social Security payments will be about 10 percent less than what they would have gotten if the money deducted from their pay had been invested in U.S. Treasury securities. This negative return has come earlier than many analysts expected. All told, however, "[T]he data do not support the most dire views of retirement prospects, at least not for those now on the verge of retirement. Pensions are doing a better job providing support for households than they are given credit for."

These estimates of pension wealth are based on pension plan descriptions obtained from the employers of respondents to the Health and Retirement Study, a detailed nationally representative survey of some 7,600 families with at least one member born between 1931 and 1941. Lifetime earnings and Social Security benefits for survey respondents are estimated from earnings records obtained from the Social Security Administration. —David R. Francis

Minimum Wages Discourage Training

The minimum wage is always politically controversial. Little wonder a cottage industry has sprung up in recent years examining the economic consequences of the minimum wage. Does a minimum wage harm the low-skill workers it's supposed to benefit? Or, is the minimum wage a savvy policy for raising the rewards to work?

While the economic research has focused largely on documenting the employment effects of higher minimum wages, that is too limited a perspective, according to NBER Research Associate **David Neumark** and coauthor **William Wascher.** In **Minimum Wages and Training Revisited** (NBER Working Paper No. 6651), they broaden the investigation into a detailed look at the impact of minimum wage laws on job training. Theory suggests that minimum wages will reduce employer-offered on-the-job training because the tutoring is financed out of worker wages.

> "...minimum wages reduce training aimed at improving skills on the current job, especially formal training."

Neumark and Wascher's analysis relies on variations in minimum wage laws from 1981 to 1991. They find that "...minimum wages reduce training aimed at improving skills on the current job, especially formal training." The cuts in training associated with a higher minimum wage are most apparent among 20- to 24-year olds.

Still, the lure of a higher minimum wage might encourage low-skill or less-educated workers to get more schooling in order to qualify for a job. Indeed, the authors note that some advocates believe a higher minimum wage is a route toward a high-wage economy. Yet "there is no evidence that minimum wages raise the amount of training obtained by workers to qualify for their current job, and, indeed, there is some evidence that minimum wages reduce this kind of training as well." Among the many implications of their research, the authors argue, is that the data undermine the case for using minimum wages to encourage a "high-wage" path for the economy.

—Chris Farrell

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