

## BEA BRIEFING

# Employee Stock Options and the National Economic Accounts

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STOCK options, once considered a “perk” for top executives, have become an increasingly common part of compensation packages for many employees.<sup>1</sup> As their importance in the economy has grown, so has their importance in the national income and product accounts (NIPAs), particularly personal income and corporate profits. This article reviews the current treatment of stock options in tax accounting, financial accounting, and the NIPAs, examines the major practical, conceptual, and timing issues involved in their measurement, and offers information on Bureau of Economic Analysis (BEA) plans for future improvements in how it accounts for options.

### Definitions and treatment in tax accounting

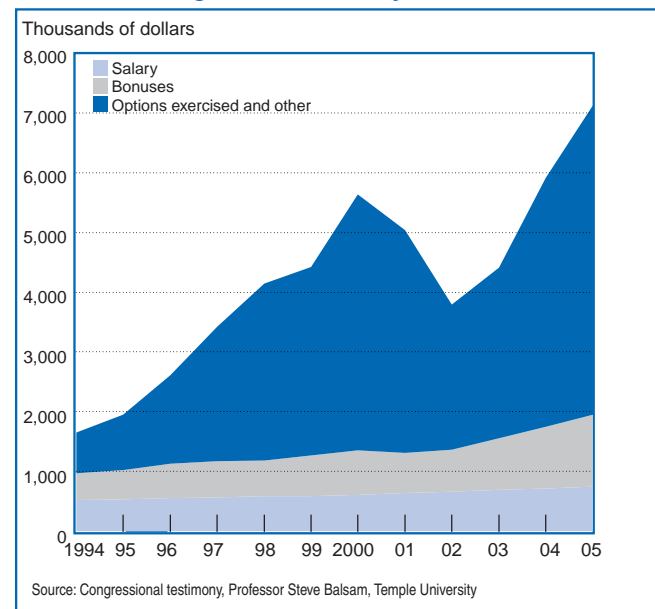
Employee stock options provide employees with the right to purchase, within a specified time period (often 10 years), shares of their company’s stock at a “strike” price set by the company. For publicly traded stock, the “strike” price (also called the grant or exercise price) is usually the market price of the stock at the time the option is granted. There is usually a minimum waiting period—referred to as the “vesting” period—during which the employee must remain employed by the company before the individual may exercise the option (that is, purchase the stock). The average vesting period is usually 3 years after the time of grant.<sup>2</sup>

Employee stock options are granted as part of an overall compensation package. In some cases, employees accept lower current-period wages and salaries with the expectation that the growth in the market value of the company stock will more than offset the reduction to their wages. For other employees, stock options are an additional benefit that makes working for a particular company more attractive. From the employer’s perspective, options are often seen as a way to retain employees, as the options vest over several

years. Additionally, for key executives, stock options are used as an incentive tool designed to link individual pay to the company’s stock performance. The exercising of stock options has become a significant component of compensation for chief executive officers (chart 1).

In the United States, two major types of employee stock options have emerged: nonqualified stock options (NSOs) and incentive stock options (ISOs). The most prevalent stock option is the NSO. NSOs are often referred to as “compensatory” options because their use gives rise to compensation expenses on a company’s tax returns. When NSOs are exercised, the difference between the current market price at the time of exercise and the strike price is reported as wages on the tax returns of the employer and the employee. The employee incurs an associated tax liability, and the company receives a tax deduction for the difference between the current market price and the strike price. Despite this tax treatment, until 2005, companies were not required to record any stock option expenses on financial statements.

Chart 1. Average Executive Pay



1. In 2005, the National Center for Employee Ownership estimated that up to 20 percent of all public companies provide stock options to their employees.

2. For the average number of years and a percent distribution of employees by years needed for full vesting for stock option grants in 1999, see Beth Levin Crimmel and Jeffrey L. Schildkraut, “Stock Option Plans Surveyed by NCS,” in *Compensation and Working Conditions* (Spring 2001): table 8.

An ISO is a type of “statutory stock option.”<sup>3</sup> Generally, statutory stock options are not reported as wages of the employee but as long-term capital gains. They are not deductible as an expense on the employer’s tax return when the option is granted or when it is exercised. If ISOs are sold either within 2 years of grant or within 1 year of exercise, they revert to NSO tax status. ISOs also require a 10-year time limit for exercising the options, a minimum strike price that is at least equal to the value of the stock at the time the option is granted, and a maximum value of \$100,000 (determined at time of grant) that may become exercisable in any year. When the stock is sold, the difference between the strike (or exercise) price the employee pays for the stock and the value of the stock when it is sold by the employee is reported as a long-term capital gain on the employee’s income tax return. From the employee’s perspective, this is an advantage over NSOs because the long-term capital gains tax rate is usually lower than the employee’s ordinary income tax rate. However, when an ISO is exercised, the difference between the market value at time of purchase and the strike price is a positive adjustment in calculating the Alternative Minimum Tax (AMT), and thus, the exercise of these options may still have significant tax implications for an employee.<sup>4</sup> Because the business cannot deduct the option as compensation expenses in calculating taxable income and because the cap on the value of stock that may be exercised in any year limits its use in corporate executive compensation packages, this option is less beneficial to the company.

### Treatment in corporate financial reports

In December 2004, the Financial Accounting Standards Board (FASB) issued a new standard—FAS-123R—for companies that requires them to value employee stock options (both NSOs and ISOs) using a fair-value-based method at the time they are granted and to record this value on financial reports as a compensation expense over the period of vesting.<sup>5,6</sup> For example, if the vesting period is 3 years, one-third of the value calculated at time of grant is expensed for each of the next 3 years. The fair value of an option grant ide-

ally would be based on the observable market price of the option or of one with similar terms and conditions. As the market price is not usually observable, fair value measurement techniques use option-pricing models—such as a Black-Scholes model, a Monte Carlo simulation technique, or a lattice model to determine a fair value of an option—that is, one that accounts for factors such as the stock price at the grant date, the strike price, the expected life of the option (that is, the expected period of time between the grant date and the exercise date), the volatility of the underlying stock and the expected dividends on it, and the risk-free interest rate over the expected life of the option.

Before this standard was issued, companies could choose between the fair-value-based method or the intrinsic-value method. The latter measures the value of the option as the current market price of the stock at the time of the grant less the strike price. This value is usually zero at the time of grant; therefore, it has no impact on company income in financial reports. For this reason, most companies chose the intrinsic-value method. Thus, accounting rules for financial statements allowed an understatement of compensation expenses and a corresponding overstatement of company profits.<sup>7</sup>

The 2004 requirement eliminated the use of the intrinsic-value-based method and thus improved comparability across firms. The ruling also makes the FASB requirement generally consistent with the International Accounting Standards Board (IASB) requirements on this issue.

While firms are required to record the value of employee stock options as an expense on financial reports, this information is usually not separately identifiable quarterly. Firms are required to report the option activity of the senior officers. However, for most corporations, the options for senior officers represent only a small portion of the vested options outstanding. Thus, the activity of these employees is not likely to be a good indicator of overall stock option activity.

### Treatment in the NIPAs

In accounting for stock options, BEA faces several source data and estimation challenges that currently make the ideal conceptual treatment impossible to implement. In theory, the ideal treatment would be one based on the following principles:

- The option to purchase a stock does have value, and that value should be treated as employee

3. Another less common type of statutory stock option is the employee stock purchase plan option. See FASB, *Statement of Financial Accounting Standards No. 123: Accounting for Stock-Based Compensation*, 5.

4. If an employee pays an AMT on the exercise of these options, the employee may claim an AMT credit in future years.

5. The fair value of a stock option is the market value of the option. A fair-value-based method measures the stock option at time of grant as a compensation expense based on the value of the award and recognizes this value over the period of service, which is usually the vesting period.

6. Companies were required to record any stock option expenses on financial statements beginning with the first interim or annual reporting period that began after June 15, 2005 (December 15, 2005, for smaller filers).

7. Before 1996, only the intrinsic-value method was used; it is described in APB *Opinion 25*. The fair-value method, originally described in FAS-123, was introduced in 1996, and until 2005, companies had their choice as to which standard to follow.

compensation. Although employee stock options are not mentioned explicitly in the section of the 1993 *System of National Accounts* (SNA) on compensation (paragraphs 7.21–7.47), they may be interpreted as implicitly covered in the section on “wages and salaries in kind” (paragraphs 7.37–7.42). For the upcoming revision to the SNA, employee stock option grants will explicitly be included as compensation. Moreover, BEA generally agreed that NSOs and ISOs should be treated consistently in the national economic accounts. Thus, the different treatment by companies of ISOs and NSOs for tax purposes is not relevant for deciding their treatment in the NIPAs.

- The value of an option, given the lack of a secondary market for observable prices, should be estimated using a fair-value pricing model. The FASB and IASB currently value options this way.
- The option should be valued at time of grant and accounted for as compensation over the vesting period. This value reflects the value of the employee’s labor in exchange for the stock option for the period of time between the grant date and the vesting date.
- The difference between the value of the option when recorded as compensation and the value at the time it is exercised should be recorded as a capital gain or loss by the employee.<sup>8</sup>

A treatment based on these principles would be conceptually consistent with the NIPA and SNA practice of recording transactions on an accrual basis and with the NIPA and SNA use of market values (or proxies thereof) for valuation.<sup>9</sup> In essence, this treatment is also consistent with the accounting recommendations of FAS–123R.

Unfortunately, BEA is unable to implement this treatment at present because the detailed data required (such as the value of stock option grants expensed by companies over the vesting period and the value of stock options exercised, the number of grants, the timing of grants, the timing of the vesting of grants, the timing of exercise, and an industry distribution) are not available.

The current treatment of stock options in the NIPAs is determined by their tax treatment and the availability of source data on their value when exercised. So, the actual treatment in the NIPAs differs substantially

8. Capital gains and losses are excluded from the NIPAs, as they do not result from production. However, they are recorded in the flow of funds accounts produced by the Federal Reserve Board. The flow of funds accounts, the NIPAs, and the input-output accounts, also produced by BEA, provide an integrated and consistent set of U.S. national economic accounts.

9. The accrual method records revenues when they are earned and expenses when they are incurred, regardless of when cash is actually received or paid.

from the preferred treatment:

- NSOs are valued at time of exercise rather than over the vesting period. When NSOs are exercised, the NIPAs include the value of the difference between the market price at the time of exercise and the strike price as wages and salaries—a component of gross domestic income (GDI). A corresponding reduction is made to corporate profits, another component of GDI.
- ISOs are valued at the time they are sold as a long-term capital gain, which the NIPAs do not account for as compensation. The administrative source data that are currently used to estimate components of GDI exclude ISOs; they are not included as part of wages and salaries or as a deduction to corporate profits in the NIPAs. Although most companies offer NSOs rather than ISOs, this inconsistency is of increasing importance as both types of stock options become more commonplace.

### Source data and methodologies

As noted, the current treatment of stock options in the NIPAs is determined in large part by the nature and availability of source data, and most of the issues related to their conceptual treatment in the NIPAs are explained by issues in the availability of source data.

**Wages and salaries.** The starting point for preparing the quarterly and annual estimates of wages and salaries in the NIPAs is the Bureau of Labor Statistics’ (BLS) Quarterly Census of Employment and Wages (QCEW) program, which provides tabulations of wages and salaries that are similar, in concept, to the NIPA definition. The QCEW program (also known as the ES–202 program) is a cooperative program involving BLS and the state employment security agencies (ESAs). The tabulations summarize the state quarterly unemployment insurance (UI) contribution reports that are filed by employers subject to that state’s UI laws.<sup>10</sup> BEA makes adjustments to QCEW-reported wage and salary disbursements to account for nonreporting and underreporting of wages and salaries by employers. QCEW wages generally include the gain from exercising NSOs, but not the gain from exercising ISOs.

The exercising of stock options and other special compensation items are not separately identifiable in the QCEW wage and salary tabulations. Both a strength and a weakness of QCEW wage and salary

10. Under most state UI laws, wages and salaries include bonuses, tips, the cash value of meals and lodging provided by the employer, the gain on the employee exercise of certain stock options, and employee contributions to certain deferred compensation plans. Wages and salaries are measured before deductions, such as employee contributions to social insurance funds and union dues, and they reflect the amount of wages and salaries disbursed, but not necessarily accrued, during the year.

data is that these tabulations are derived from administrative tax records. Because virtually all private employers are covered by unemployment insurance, the UI-based data provide a near universal coverage of employment and payrolls of wage and salary workers. However, they also reflect somewhat differing state UI laws, so what constitutes wages and salaries may not be consistently defined or reported across states. Differences may occur in the definition of what are considered wages for some payments made by employers or by employees for deferred compensation and for certain types of trust funds.<sup>11</sup>

Because QCEW-based data for a given quarter are first available with a lag of 5 months, they are incorporated into the current estimates of wages and salaries for a given quarter at the time of the “preliminary” estimate of the quarterly gross domestic product (GDP) for the next quarter.<sup>12</sup> Before the incorporation of the QCEW-based data, quarterly and monthly wages and salaries are extrapolated using data based on employment, hours, and earnings from the BLS monthly Current Employment Statistics (CES) program; these data are available about 1 week following the end of a particular month. However, these data are less comprehensive because they cover hours and earnings only for production workers (or for nonsupervisory workers in service industries) and because they do not include commissions, tips, bonuses, other nonregular payments (such as the exercise of stock options), and other pay not earned in the pay period concerned, such as retroactive pay. Thus, the monthly CES survey omits a substantial portion of the wage and salary compensation of high-wage workers. BEA adjusts the monthly extrapolator to account for the difference in coverage between the QCEW-based data and the CES-based data.

**Corporate profits.** In the NIPAs, the estimate of corporate profits is defined as receipts arising from current production less associated expenses. Most

businesses prepare profits information on a financial accounting basis and a tax-accounting basis, which each use different definitions of some receipts and expenses.

Tabulations of federal corporate income tax returns from the Internal Revenue Service (IRS) Statistics of Income (SOI) program provide the key source data for BEA’s detailed annual estimates of industry profits primarily because tax-accounting definitions are based on well-specified accounting definitions. In contrast, financial-accounting measures allow more flexibility in the way they are applied by corporations. In addition, the tax-accounting measures are more comprehensive, covering all incorporated businesses—both publicly traded and privately held—and all industries, while financial-accounting tabulations cover only a subset of the corporate universe. The tabulations of corporate income tax returns prepared by the IRS include annual receipt and expense items and tax liabilities. The expenses include, but do not separately identify, the value of employees’ gains from exercising stock options. However, the IRS now tabulates an informational return (the M-3) that reconciles the stock options expenses deducted in financial reports with the stock options deducted as expenses on corporate tax returns; this information supplements the source data and allows BEA to derive an annual estimate of the corporation’s compensation expenses resulting from the exercise of stock options.

While the tax measure is conceptually consistent with the wage and salary data from the QCEW, a shortcoming of the IRS data is their timeliness. Preliminary and final SOI estimates do not become available until 2 years after and 3 years after the year to which they refer, respectively. As a result, preliminary tax-based profits data are not incorporated into annual NIPA estimates until the second annual revision for a given year. Current estimates must be estimated using financial-accounting measures.

While financial data are less comprehensive than tax return data, they are available sooner, and they are prepared on a quarterly basis. However, financial accounts record the value of stock options over the period of vesting rather than when they are exercised, and the recorded value is the fair value rather than the difference between the strike price and the price at time of exercise.<sup>13</sup> These inconsistencies between financial and tax-return-based data may cause discrepancies between the BEA extrapolated measure of profit growth (based on financial reports) and the tax-return based measure that becomes available later.

11. To better understand possible differences across state contribution reports, BLS surveyed the state ESAs in 1998–99 to find out what items were treated as wages for their state tax reports. It appears that most, but not all, states define wages and salaries consistently. However, while it appears that large technology firms do report the employee gain from the exercise of stock options as wages, it is not clear that all firms are doing so. Because the annual tax base for UI wages and salaries is capped at \$7,000 per employee, states may have little incentive to follow up with firms to ensure correct reporting of special compensation items.

12. Before the 2002 annual revision of the NIPAs, only annual QCEW tabulations were incorporated into the estimation of NIPA wages and salaries because the quarterly QCEW tabulations were not available in time to be incorporated into the quarterly estimation. Effective with the 2002 annual revision, BEA began incorporating seasonally adjusted QCEW data when the data became available in time for the release of the “final” quarterly GDP estimate for the prior quarter. In 2004, BLS accelerated the tabulations of these data by a month, allowing BEA to incorporate these data into the “preliminary” estimate of GDP. For more information on the release cycle of NIPA estimates, see *A Guide to the National Income and Product Accounts*, 21.

13. As noted in this article, the recording of a fair value for these options was not required until 2005. Before 2005, most firms chose to value stock options using an intrinsic-value method, which was usually zero at time of grant.

### Timing of data and revisions

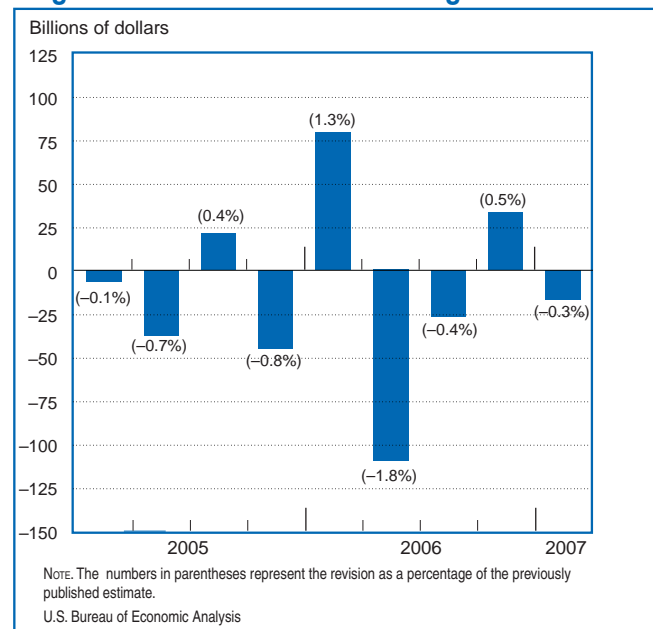
Problems in the source data used for measuring wages and salaries and for measuring profits may lead to several measurement and timing problems. These problems, some of which are noted above, may have important impacts on the accuracy of these components and thus on the statistical discrepancy, the difference between the measures of GDP and GDI.<sup>14</sup>

- The statistical discrepancy for the current time periods may be affected when the corporate profits expense and the wage and salary accrual from the exercise of options do not offset one another. Although option gains expensed on corporate tax returns and option gains included in wages and salaries probably largely offset once the full tax-based estimates are incorporated, an imbalance generally exists before then.
- There is a 2-year lag for the incorporation of tax return data into profits estimates. So, if the gain from exercising of stock options increases without a special adjustment to reduce profits, national income may be overstated until the tabulations based on tax returns become available. The NIPA profits extrapolator, which is based on financial accounting, is inconsistent with the tax-based portion of corporate expenses that result from the exercise of stock options. This can cause swings in the statistical discrepancy for the current period. To mitigate large revisions stemming from the exercise of stock options, BEA has been deriving annual estimates of these expenses for the most recent year as part of the annual revision process for corporations. These measures are based on information from the footnotes of individual corporate financial reports based on a sample of about 150 large corporations.
- Differences in the QCEW and CES data may affect revisions. Before the QCEW data become available, wages and salaries are extrapolated using the CES data. While QCEW data are assumed to reflect the exercise of NSOs, the CES data do not; the adjustment to the monthly extrapolator does not measure coverage differences precisely. As a result, the substitution of the QCEW tabulations when they become

14. QCEW tabulations may inconsistently include the exercising of some ISOs as wages and salaries. As noted above, BEA assumes that the gain from the exercise of NSOs is included in the wage and salary tabulations. A BLS survey of states on the composition of QCEW wages supports this assumption; most states responded that the exercising of NSOs is considered a part of wages and salaries in their UI contribution reports. However, some states also included the exercising of ISOs as wages and salaries. While the preferred treatment of stock options would include ISOs, the current treatment in the NIPAs does not; their inclusion by some states would impact the accuracy of the NIPA measures as currently defined. Another issue is how companies actually report this information. A state may list the exercising of ISOs as part of wages and salaries, but firms may not report them as wages and salaries for UI purposes, because they do not have to do so for income tax reporting.

available may result in appreciable revisions to the initial quarterly estimates. For the first quarter of 2006, the initial CES-based estimates of wages and salaries underestimated the actual QCEW wages and salaries by approximately \$80 billion, or 1.3 percent of wages and salaries (chart 2). Because first-quarter corporate profits were also not open for revision at that time, the apparently unusually large exercising of stock options distorted the GDI growth rate for both the first and second quarters of 2006; this distortion could not be corrected until the following annual revision. If reasonable quarterly estimates of the exercising of stock options could be derived before the incorporation of QCEW data, the revisions to wages and salaries could be reduced.

**Chart 2. Difference Between Initial CES-Based Wages and Later QCEW-Based Wages**



### BEA's plans for the future

In the long run, the preferred treatment is to measure the fair-market value of stock options (both NSOs and ISOs) at the time of grant and distribute that value as compensation over the vesting period, as noted. Unfortunately, the necessary data are not yet available to implement this treatment. For the short run, BEA will concentrate on improving the current treatment that measures the value of stock options at time of exercise.

To implement the preferred treatment, the current stock options measure must be removed from the estimates, and the preferred measure must be added. To accomplish this change, for both the estimation of corporate profits and wages and salaries, the following

source data are needed:

- The fair-market value of stock options at time of grant and recorded as compensation over the vesting period
- The exercise value and timing of NSOs

For national estimates, these data would need to be available by industry and on a quarterly basis. For regional estimates, they would need to be available by state at a minimum.

Beginning with 2006, the fair-market value of options granted is now available from financial data for publicly traded firms for corporate profits, although it is not separately identified quarterly. For annual estimates, the fair-market value of grants and the value of options exercised now are available by industry from the schedule M-3 tax informational form (Reconciliation of Net Income (Loss) per Income Statement of Includible Corporations With Taxable Income per Return—Expense/Deduction Items), but with an 18- to 30-month lag. Although company-based profits by industry will not match establishment-based wages by industry, in aggregate, the fair value of option grants for corporate profits and for wages and salaries should equal, and the value of options exercised in the tax-based profits data should conceptually equal the value of options exercised as measured in the QCEW wages and salaries.

While the option grants and exercises from the M-3 informational return could be used as a proxy for total wages and salaries, no information is available to distribute these totals by industry on an establishment level, by state, or by quarter. Without knowing the timing of options exercised, it would be very difficult to adjust earlier years. With a longer data time span, BEA could develop experimental annual estimates that show the impact on total wages and total corporate profits from the preferred treatment. One impact of these experimental estimates would be a change in the relative share of labor to total income; during periods of significant exercising of stock options, the share

would be reduced.

For the short run, BEA will focus its efforts on reducing revisions in the current treatment due to measurement and timing problems in the area of employee compensation. Research has been underway to improve the estimates of wages and salaries for the period before the incorporation of the QCEW tabulations. One project was to examine the relationship between wages and salaries and a proxy for the value of the exercise of NSOs. However, individuals exercise stock options based on many factors, including the price of the firm's stock, personal expenditure considerations, and investment diversification strategies. The relationships between movements in total private wages and salaries and in movements in stock market indexes have been generally poor. However, the relationships are somewhat stronger for selected technology industries and more targeted market indexes. Work will continue in this area.

In April 2007, BLS began releasing a new experimental series that provides gross monthly earnings at the national level. This new series includes irregular payments, providing an additional and more comprehensive measure of earnings for the whole month. At present, this series has been released with a lag of 3 months, and the time series is short. When the time series has a sufficient number of months and the availability improves, BEA plans to incorporate these monthly estimates that are based on the more comprehensive data. We expect that this series will eventually become an additional monthly and quarterly source for the estimation of wages and salaries prior to the incorporation of the QCEW.

BEA, in coordination with BLS, will continue to pursue the changing makeup of QCEW wage and salary tabulations so we may better adjust for differences in state reporting of various special compensation-type items. As resources permit, we plan to continue research on measuring alternative treatments of employee stock options.

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