Share-Based Payment > Best Practice Series

Dow 30 ESO Valuation Disclosure 2017

The Overview

As part of our Share-Based Payment (SBP) Best Practice Series, Montgomery Investment Technology, Inc. (MITI), is pleased to provide you with our research which focuses on the valuation techniques and disclosures based on the 2017 10-K filings of the Dow Jones Industrial Average companies. We have compiled a one page report illustrating how the Dow 30 companies are complying with Accounting Standards Codification 718 and what forms of Share-Based Payments each company provides. This report reveals the varying degree of refinement in the valuation process that has been applied to Employee Stock Options (ESO), and the trend toward other types of equity based compensation. One important note is that there have been two changes to the Dow 30 constituency since our 2013 report.

The Standard

In 2004, the Financial Accounting Standards Board provided guidance in FAS 123R that a range of reasonable assumptions would likely be estimated and disclosed in the footnotes of the financial report. Then in 2006, the Securities and Exchange Commission in SAB 107 (updated in SAB 114) projected that over time as issuers and accountants gained more experience in applying Share-Based Payment fair value accounting, particular approaches would begin to emerge as best practices and that the range of reasonable conduct, conclusions and methodologies would likely narrow. In 2006, the PCAOB published a guidance report on "Auditing the Fair Value of Share Options Granted to Employees". In 2009, the Financial Accounting Standards Board re-codified the accounting standards. Accounting for Share-Based Payments is now covered under FASB ASC 718.

The Practice

In this study, we find that the ESO contractual term (7 to 10 years) and vesting period (3 to 5 years) of the Dow 30 companies are quite similar. But we observe that the valuation assumptions and methodologies diverge. Here are some examples:

- Thirteen companies used the Black-Scholes-Merton/Closed-form model to value ESOs. Six companies used the Binomial/Lattice model. Eleven companies did not grant any employee stock options in 2017.
- The 2017 average expected term was 6.5 years with a range of 4.2 to 9.6.
- Disney used an exercise multiple as an input to the Binomial model using a suboptimal exercise factor of 1.6.
- One company estimated expected volatility based on implied volatility, exclusively. Eleven companies used a combined volatility consisting of historical and implied volatilities. Two companies utilized historical volatility, exclusively. One company estimated expected volatility based on the implied volatility of traded options.
- Two companies disclosed their expected forfeiture rate in their 10-K filings.

To download a free copy of our complete table, click here.

The Future

We have observed increasing complexity in the structure of awards, with some companies using a combination of market and performance conditions. Where market condition awards such as Total Shareholder Return (TSR) and Performance Price Target are issued, the valuation method typically will employ either Monte Carlo Simulation or the Lattice method. The Black-Scholes or other closed-form models depend upon limited assumptions which are incompatible with the conditions of the complex awards. We have found that a large number of Dow 30 companies continue to issue Relative TSR Return awards within their equity compensation plans.

MITI follows these developments closely and remains aware of the latest innovations in the field. Our working papers and white papers provide a resource for boards, compensation committees, equity compensation and accounting professionals. MITI offers numerous Online Calculators for the valuation of options and derivatives. If you are considering alternative SBP awards and would like to discuss various valuation techniques with one of our specialists, please contact us at 610-688-8111. We also welcome your questions or comments at miti@fintools.com. Thank you for your feedback!

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References

FASB Accounting Standards Codification, Topic 718, Compensation – Stock Compensation

718-10-55-16 A lattice model (for example, a binomial model) and a closed-form model (for example, the Black-Scholes-Merton formula) are among the valuation techniques that meet the criteria required by this Topic for estimating the fair value of employee share options and similar instruments. A Monte Carlo simulation technique is another type of valuation technique that satisfies the requirements in paragraph 718-10-55-11. Other valuation techniques not mentioned in this Topic also may satisfy the requirements in that paragraph. Those valuation techniques or models, sometimes referred to as option-pricing models, are based on established principles of financial economic theory. Those techniques are used by valuation professionals, dealers of derivative instruments, and others to estimate the fair values of options and similar instruments related to equity securities, currencies, interest rates, and commodities. Those techniques are used to establish trade prices for derivative instruments and to establish values in adjudications. As discussed in paragraphs 718-10-55-21 through 55-50, both lattice models and closed-form models can be adjusted to account for the substantive characteristics of share options and similar instruments granted to employees.

718-10-55-23 There is likely to be a range of reasonable estimates for expected volatility, dividends, and term of the option. If no amount within the range is more or less likely than any other amount, an average of the amounts in the range (the expected value) shall be used. In a lattice model, the assumptions used are to be determined for a particular node (or multiple nodes during a particular time period) of the lattice and not over multiple periods, unless such application is supportable.

718-10-55-39 A closed-form model, such as the Black-Scholes-Merton formula cannot incorporate a range of expected volatilities over the option's expected term (see paragraph 718-10-55-18). Lattice models can incorporate a term structure of expected volatility; that is, a range of expected volatilities can be incorporated into the lattice over an option's contractual term. Determining how to incorporate a range of expected volatilities into a lattice model to provide a reasonable fair value estimates is a matter of judgment and shall be based on a careful consideration of the factors listed in paragraph 718-10-55-37 as well as other relevant factors that are consistent with the fair value measurement objective of this Topic.

The staff recognizes that there is a range of conduct that a reasonable issuer might use to make estimates and valuations and otherwise implement FASB ASC Topic 718, and the interpretive guidance provided by this SAB, particularly during the period of the Statement's initial implementation. Thus, throughout this SAB the use of the terms "reasonable" and "reasonably" is not meant to imply a single conclusion or methodology, but to encompass the full range of potential conduct, conclusions or methodologies upon which an issuer may reasonably base its valuation decisions. Different conduct, conclusions or methodologies by different issuers in a given situation does not of itself raise an inference that any of those issuers is acting unreasonably. While the zone of reasonable conduct is not unlimited, the staff expects that it will be rare when there is only one acceptable choice in estimating the fair value of share-based payment arrangements under the provisions of FASB ASC Topic 718 and the interpretive guidance provided by this SAB in any given situation. In addition, as discussed in the Interpretive Response to Question 1 of Section C, Valuation Methods, estimates of fair value are not intended to predict actual future events, and subsequent events are not indicative of the reasonableness of the original estimates of fair value made under FASB ASC Topic 718. Over time, as issuers and accountants gain more experience in applying FASB ASC Topic 718 and the guidance provided in this SAB, the staff anticipates that particular approaches may begin to emerge as best practices and that the range of reasonable conduct, conclusions and methodologies will likely narrow.

A20. There is likely to be a range of reasonable estimates for expected volatility, dividends, and term of the option. If no amount within the range is more or less likely than any other amount, an average of the amounts in the range (the expected value) should be used. In a lattice model, the assumptions used are to be determined for a particular node (or multiple nodes during a particular time period) of the lattice and not over multiple periods, unless such application is supportable.

A33. A closed-form model, such as the Black-Scholes-Merton formula, cannot incorporate a range of expected volatilities over the option's expected term (paragraph A15). Lattice models can incorporate a term structure of expected volatility; that is, a range of expected volatilities can be incorporated into the lattice over an option's contractual term. Determining how to incorporate a range of expected volatilities into a lattice model to provide a reasonable fair value estimate is a matter of judgment and should be based on a careful consideration of the factors listed in paragraph A32 as well as other relevant factors that are consistent with the fair value measurement objective of this Statement.

A240.

a. A description of the share-based payment arrangement(s), including the general terms of awards under the arrangement(s), such as the requisite service period(s) and any other substantive conditions (including those related to vesting), the maximum contractual term of equity (or liability) share options or similar instruments, and the number of shares authorized for awards of equity share options or other equity instruments. An entity shall disclose the method it uses for measuring compensation cost from share-based payment arrangements with employees.

b. For the most recent year for which an income statement is provided:

> **(1)** The number and weighted-average exercise prices (or conversion ratios) for each of the following groups of share options (or share units): (a) those outstanding at the beginning of the year, (b) those outstanding at the end of the year, (c) those exercisable or convertible at the end of the year, and those (d) granted, (e) exercised or converted, (f) forfeited, or (g) expired during the year.
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> **(2)** The number and weighted-average grant-date fair value (or calculated value for a nonpublic entity that uses that method or intrinsic value for awards measured pursuant to paragraphs 24 and 25 of this Statement) of equity instruments not specified in paragraph A240(b)(1) (for example, shares of nonvested stock), for each of the following groups of equity instruments: (a) those nonvested at the beginning of the year, (b) those nonvested at the end of the year, and those (c) granted, (d) vested, or (e) forfeited during the year.

e. For each year for which an income statement is presented:

> **(1)** A description of the method used during the year to estimate the fair value (or calculated value) of awards under share-based payment arrangements.
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> **(2)** A description of the significant assumptions used during the year to estimate the fair value (or calculated value) of share-based compensation awards, including (if applicable):
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> > **(b)** Expected volatility of the entity's shares and the method used to estimate it. An entity that uses a method that employs different volatilities during the contractual term shall disclose the range of expected volatilities used and the weighted-average expected volatility.

A242. In addition to the information required by this Statement, an entity may disclose supplemental information that it believes would be useful to investors and creditors, such as a range of values calculated on the basis of different assumptions, provided that the supplemental information is reasonable and does not lessen the prominence and credibility of the information required by this

Statement. The alternative assumptions should be described to enable users of the financial statements to understand the basis for the supplemental information.

B241. The minimum disclosures specified in paragraph A240 (f) of this Statement as necessary to enable users to understand how fair values were determined also were required by Statement 123. However, because this Statement gives greater emphasis to lattice models than Statement 123 did, the required disclosures of the significant assumptions used to estimate the fair value of share-based compensation awards are revised to specifically encompass assumptions used in lattice models that employ a range of assumptions. For example, an entity that uses a valuation method in which different expected volatilities are used during the contractual term of an option is required to disclose the range of volatilities used.