Valuing Stock Appreciation Rights (SARs) in ESOP Sponsor Companies

Steve Whittington

Stock appreciation rights (SARs) are used in conjunction with ESOP stock purchase transactions as an incentive plan for key executives (including the selling shareholder). It is important for the ESOP financial adviser to understand (1) what SARs are and (2) how SARs affect the value of the employer corporation stock at the outset of a stock purchase transaction. It is also important for the ESOP financial adviser to understand how SARs may affect future employer corporation stock valuations.

Introduction

An employer corporation board that decides to undertake a transaction in which the corporation's stock is sold to an employee stock ownership plan (ESOP) can structure that stock sale transaction in several ways. In its simplest form, the stock sale transaction could be consummated by the selling shareholders receiving full cash consideration for the employer corporation shares that they have sold. More commonly, however, there is a seller-financing aspect to the ESOP employer stock purchase transaction.

In the case of a seller-financed transaction, a selling shareholder may receive several assets in place of the employer corporation stock that he or she has sold. These assets can include any combination of the following:

1. cash
2. a promissory note from the sponsor company (a "seller note")
3. options
4. warrants

A stock appreciation rights (SAR) plan is usually set up in conjunction with the ESOP employer stock purchase transaction for the benefit of either the selling shareholder or the key executives of the company (or both).

This discussion summarizes (1) how a SAR plan is used in an ESOP transaction, (2) how SARs are considered in the initial ESOP valuation, (3) and how SARs are considered in future valuations.

Definition of a Stock Appreciation Right (SAR)

A SAR is generally defined as the right to be paid an amount equal to the increase in value of company stock from the date the SAR is granted until the exercise date. A SAR is normally paid in cash. However, the SAR could be paid in equivalent value of stock. Or, the SAR could be paid in a combination of cash and equivalent stock value. SARs often can be exercised any time after they vest.

SARs differ from stock options. This is because, when the option is exercised, an employee has to pay the grant price and acquire the underlying security. With a SAR, the employee does not have to pay to acquire the underlying security. It is a straight cash outlay for the company.

The SAR is effectively viewed as a cash bonus plan for executives or key employees of a sponsor company. If the selling shareholder or shareholders is one of those executives, a SAR can be used to capture additional consideration that may be due to the selling shareholder.

SARs with an ESOP Installation

When the decision is made to implement a SAR plan at the time of the ESOP employer stock purchase transaction, the rules that govern how the SAR plan will operate are contained in a SAR Plan or SAR Agreement for each eligible participant. From an employer stock valuation standpoint, this Agreement is important in terms of understanding the initial pricing of the SARs, as well as the defined vesting (and sometimes redemption) schedule.

Initial Pricing

A leveraged ESOP employer stock purchase transaction looks to provide the selling shareholders with financial liquidity. The sponsor company, in turn, takes on debt in the amount of the equity of the entire sponsor company. As such, at the conclusion of an ESOP purchase of 100 percent of the stock of the sponsor company, the remaining equity is some minimal amount near $0, not considering any tax benefits that the ESOP may provide. As an example:

$1,000,000 equity in company/1,000 shares = $1,000/share before the ESOP stock purchase transaction

Now, the sponsor company assumes the $1,000,000 in debt for all the shares of the company:

$1,000,000 equity value - $1,000,000 ESOP stock purchase debt/1,000 shares = de minimis value, around $0/share

The preceding example is important for SARs in determining what the "strike price" of the SAR will be. The setting of the SAR strike price is indicated in the SAR Agreement. And, it will be negotiated as some percentage of the pre-transaction value. Therefore in the above example, the SAR strike price could be:

- 25 percent of transaction value = $250/share
- 10 percent of transaction value = $100/share
- 5 percent of transaction value = $50/share

Regardless of the negotiated price (and, therefore, the percentage dilution to the ESOP), the SAR price will be set well above the post-transaction per share value of the sponsor company. This will render the SAR "underwater" and will cause it to have a minimal value at the inception of the transaction. It therefore follows that, from an employer stock valuation standpoint, the SAR should be examined. However, there would be no change to value in the initial valuation.

While it may seem strange to have an initial value of a SAR so much higher than the post-transaction price, as was mentioned earlier, this is exactly the point of the SAR plan; it is an incentive for the executives to improve the per share value of the sponsor company from its de minimis $0 value to the strike price of the SAR, making it "in the money."

Vesting and Redemption Scheduling

The SAR Agreement lays out the vesting schedule for each participant. As each SAR Agreement is written per individual or per class of individuals, the vesting schedule may be different from participant to participant within the same overall plan. Further, some SAR Agreements will differentiate between a vesting schedule and a redemption schedule.

The vesting schedule describes the size and timing of the SAR award to a participant. Alternatively, the redemption schedule describes the eligible amount of the SAR that can be cashed in.

The vesting (and redemption) schedules are important from a valuation standpoint. This is because they illustrate the timing and sizes of future SAR awards, which effectively are the future cash commitments of the sponsor company.

Now that the SAR Agreement has provided the initial pricing and various schedules for the SARs (again, per individual), we can consider some valuation methods for how to synthesize the value of the SARs going forward past the transaction date.

SAR Valuation Procedures

While a SAR and a stock option have different attributes and income tax implications, it is acceptable to value a SAR in the same manner as an option. This is because of their similarity regarding "time value of money" features.

The following methods can be used for valuing options (and therefore SARs):[1]

- An option-valuation model, such as Black-Scholes or a more advanced binomial (lattice) model. It is noteworthy that this value is a good approximation only if the estimate of the share price is close to the share price underlying the SAR values. Otherwise, the valuation analyst would need to create a new valuation using an option pricing model.
- A second method, the exercise value method, provides only a lower bound for the value of the SAR. This method assumes that all SARs are exercised immediately and thereby ignores the time value of the options. The resulting valuation error increases as SARs have longer time to maturity, the sponsor company's stock has higher volatility, and the sponsor company's share price is closer to the exercise price.

For purposes of this discussion, we will concentrate on the first method and in particular the Black-Scholes model for valuing SARs. While the computational notation is beyond the scope of this discussion, there are a few things to note about the Black-Scholes model in relation to valuing options or SARs:

- The SAR Agreement is important to securing one of the inputs for the Black-Scholes model: the exercise price. This exercise price will be the negotiated SAR price in the Agreement. Therefore, the valuation analyst will need the Agreement to perform the calculation.
- The SAR Agreement will also aid the analyst in determining the valuation date and expiration date inputs for the Black-Scholes model. Vesting (and redemption) generally does not take place immediately. Rather, vesting (and redemption) will take place over several years as the executives attempt to increase the profitability of the company.
- There is a volatility input that is used as a proxy for the volatility of the stock you are valuing. A good proxy for this is, for example, the New York University Volatility Laboratory (VLAB) website: http://vlab.stern.nyu.edu, which performs volatility studies on the overall market, market sectors, market indices and single stocks.
- The valuation analyst will need a reliable proxy for a risk-free rate.

It is important to understand that in valuing SARs using this method, the calculation being performed is iterative in nature. Therefore any modeling will need to be carefully constructed to avoid any circular references. This is because one of the inputs in the Black-Scholes model is the equity value per share.

Effectively what is happening is that the model needs the equity value per share (pre-SAR) to arrive at a SAR value, which in turn is subtracted from the equity value, which in turn affects the SAR value, and so on.

Therefore, the SAR computation needs to be set up isolated from the rest of the valuation, and any subsequent SAR value that needs to be subtracted from the equity value can be manually entered at the end of the valuation.

SAR Valuation for an ESOP—An Example

To illustrate the steps of a SAR valuation, the following is a simplified example of an ESOP employer stock valuation. The illustrative sponsor company is an information technology (IT) contractor in the defense department segment. The sponsor company performs consulting and implementation of IT solutions for the military on site (i.e. on military bases).

The sponsor company underwent a transaction in April of 2007 to sell 100 percent of the outstanding stock of the sponsor company to an ESOP. As part of the work leading up to the employer stock purchase transaction, the parties negotiated (1) that there would be SARs put into place for two executives and (2) that the SAR consideration would be 25 percent of the transaction price. Therefore:

$11,650,000 employer stock transaction price x 25% SAR dilution = $2,912,500 SAR consideration

and

$2,912,500 SAR consideration/1,000,000 shares = $2.9125 SAR price

The sponsor company stock price had a de minimis value on the closing date. And, the sponsor company stock price was therefore well below the stated SAR strike price stated in the Agreement. Therefore, at the closing date, the SAR didn't affect the employer stock value and would not affect the employer stock value until it reached the exercise price.

The sponsor company received a second valuation in September of 2007 (the fiscal year end) and a third in December of 2007 (for ESOP administration reasons). The sponsor company's stock price was improving but still well below the SAR price. The same was true for the annual employer stock valuation performed in 2008.

For the 2009 annual employer stock valuation, the sponsor company's stock price had improved and was greater than the SAR price. Therefore, the SARs would have to be considered. In performing the Black-Scholes model, the value conclusion for the SAR is illustrated in Exhibit 1.

As mentioned earlier, each SAR plan is written for each individual or class of individuals. In this case, there were two executives and two different plans. For each plan, there was a vesting and a redemption schedule. The plans are illustrated in Exhibit 2.

Exhibit 1
Illustrative Sponsor Company Value Conclusion for the SAR

Total Equity Value (per share) (1)	$ 7.12
Less: PV of Dividends	-
Current Price	$ 7.12

Exercise Price (Per Share)	2.91
Years to Expiration	3.0027
Days to Expiration	1,096
Valuation Date	12/31/2009
Expiration Date (2)	12/31/2012
Volatility (3)	**65.00%**
Risk Free Rate (4)	4.31%
d1 (5)	1.4711
N(d1)	0.9294
N(-d1) or [1-N(d1)]	0.0706
d2 (5)	0.3448
N(d2)	0.6349
N(-d2) or [1-N(d2)]	0.3651
Dividend Yield	N/A

Call Value (per share) (6)	**4.99**

By this point, Executive 1 was 60 percent vested (21,000 SAR units) but would only be eligible to redeem 20 percent (7,000 SAR units) in 2012 at the earliest. Similarly, Executive 2 was 100 percent vested at this time (10,000 SAR units) but was only eligible to redeem 10 percent (1,000 SAR units) in 2012 at the earliest.

Therefore, the redeem-eligible shares were used in the calculation of the total SAR value for each executive, as they supersede the vesting schedule (i.e., they can't redeem all the shares that are vested immediately).

Further, the SAR agreement stated that the redemption of the SARs was going to be a forced redemption. This meant that each executive would have to redeem the noted percentage of shares in any given year. This is why, in the Black-Scholes calculation, the expiration date of December 31, 2012, was selected.

Therefore, the total SAR value of each executive as of the valuation date was:

Executive 1: $4.99 SAR value x (20% redemption x 35,000 SARs) = $35,000 total SAR value (rounded)

Executive 2: $4.99 SAR value x (10% redemption x 10,000 SARs) = $5,000 total SAR value (rounded)

Exhibit 2
Illustrative Sponsor Company SAR Plan Details

Executive 1-Vesting Schedule
(35,000 total SAR Units available)

Year	Percentage
2007	20
2008	40
2009	60
2010	80
2011	100

Executive 1-Redemption Schedule

Year	Percentage
2012	20
2013	25
2014	33.3
2015	50
2016	100

Executive 2-Vesting Schedule
(10,000 SAR total SAR Units available)

Year	Percentage
2007	33.3
2008	66.7
2009	100

Executive 2-Redemption Schedule

Year	Percentage
2010	NA
2011	NA
2012	10
2013	11.1
2014	12.5
2015	14.3
2016	16.7
2017	20
2018	25
2019	33.3
2020	50
2021	100

These SAR values represent future cash outlays for the sponsor company. And, as such, these SAR values would need to be subtracted from the equity value of the sponsor company.

However as mentioned earlier, to subtract the SAR amount would change the bottom line equity number, which is already an input in the Black-Scholes model. Therefore it is necessary to manually enter the SAR amounts into the valuation summary. Linking the valuation analyses together would create a circular reference.

Exhibit 3 illustrates the "before" and "after" per share valuation summaries for the sponsor company.

The two deductions for the Stock Appreciation Rights of Executive 1 and Executive 2 were manually inserted to avoid an iterative calculation. One can see that the cumulative effect of the SAR plans on the sponsor company stock is a dilution of $0.04 per share ($7.12 – $7.08).

Summary and Conclusion

As the sponsor company continues to increase in profitability over time, this SAR valuation exercise will typically be performed every time an ESOP employer stock valuation is performed. Presumably, the value of the SAR will increase as sponsor company profitability increases (and as the underlying employer stock value increases).

Also, the potential amount of the SARs that is eligible to be redeemed will increase in future years. The SAR obligation may increase independently of the increase in the sponsor company profitability.

"... it is very important to address the future obligation to the SAR in the valuation engagement."

In any security valuation, sponsor company stock or otherwise, where a SAR plan is in place, it is important to address the future obligation to the SAR in the security valuation engagement.

Ignoring the liability that is created as a result of the SAR plan could lead to an overstatement in the sponsor company equity value. In addition, ignoring the liability associated with the SAR plan could also create an unexpected liquidity problem for the sponsor company when the SARs come due.

The above-mentioned method of addressing and valuing SARs is just one of several valuation methods. All such valuation methods should generally be considered by the valuation analyst during the employer stock valuation process. This is because every sponsor company, and every SAR plan, is different.

Notes:

1. Tim Koller, Marc Goedhart, and David Wessels, *Valuation: Measuring and Managing the Value of Companies*, 4th ed. (New York: John Wiley & Sons, 2005), pp. 339–346.

Steve Whittington is an associate in our Atlanta office. Steve can be reached at (404) 475-2317 or at scwhittington@willamette.com.

Exhibit 3
Illustrative Sponsor Company
Before and After Valuation Summaries

"BEFORE" Valuation

$ in 000s, except for per share data

	Valuation Method	Indicated EV	Weight	Contribution to EV
	Discounted Cash Flow Method	$ 17,400	80%	$ 13,920
+	Guideline Public Company Method	17,700	10%	1,770
+	Guideline Merged and Acquired Company Method	16,100	10%	1,610
=	Weighted Average MVIC (with equity on a controlling interest basis)		100%	17,300
−	Market Value of Interest-Bearing Debt			(9,650)
−	Warrant Right Agreement (Unfunded)			(159)
=	Indicated Equity Value (on a marketable, controlling interest basis)			7,491
−	Discount for Lack of Marketability		-5%	(375)
=	Indicated Equity Value (on a nonmarketable, controlling interest basis)			7,116
÷	Total Shares			1,000
=	Per Share Value			$ 7.12

"AFTER" Valuation

$ in 000s, except for per share data

	Valuation Method	Indicated EV	Weight	Contribution to EV
	Discounted Cash Flow Method	$ 17,400	80%	$ 13,920
+	Guideline Public Company Method	17,700	10%	1,770
+	Merged and Acquired Method	16,100	10%	1,610
=	Weighted Average MVIC (with equity on a controlling interest basis)		100%	17,300
−	Market Value of Interest Bearing Debt			(9,650)
−	Stock Appreciation Rights (Roger Harris)			(35)
−	Stock Appreciation Rights (Ron Gilbert)			(5)
−	Warrant Right Agreement (Unfunded)			(159)
=	Indicated Equity Value (on a marketable, controlling interest basis)			7,451
−	Discount for Lack of Marketability		-5%	(373)
=	Indicated Equity Value (on a nonmarketable, controlling interest basis)			7,079
÷	Total Shares			1,000
=	Per Share Value			$ 7.08

MVIC = market value of invested capital

EV - equity value