8 Chapter 8 – Compensation Planning

We will consider ten types of employee compensation, as described below:

Category	**Employee Tax Effects**	**Employer Tax Effects**
Nontaxable fringe benefits	Never taxed	Immediately deductible
Qualified pensions	Deferred tax	Immediately deductible
Incentive stock options	Deferred tax as capital gain	Never deductible
Deferred compensation	Deferred tax	Deferred deduction
Restricted stock	Deferred tax	Deferred deduction
Nonqualified stock options	Deferred tax	Deferred deduction
Stock appreciation rights	Deferred tax	Deferred deduction
Performance units	Deferred tax	Deferred deduction
Cash salary	Immediately taxed	Immediately deductible
Cash bonus	Immediately taxed	Immediately deductible

8.1 Salary Versus Deferred Compensation

Unless special rules apply, salary paid to an employee is includible by the employee in the year received and is deductible to the employer in the year includible to the employee. As a result, current salary is includible and deductible immediately while deferred compensation (more accurately called "nonqualified deferred compensation" to emphasize that it is not subject to any special rules) is includible and deductible in the future

year when paid to the employee. If an employer is willing to pay an immediate salary of $100, then the immediate after-tax cost to the employer is $100(1 – t_{c0}), where t_{c0} is the employer's current marginal tax rate. If the employer does not pay that amount today but instead invests it on behalf of the employee for n years at an after-tax annual return of r_{cn}, then the employer will have $100(1 – t_{c0})(1 + r_{cn})^n after n years. When the employer pays the accumulated return to the employee, the employer will get a deduction equal to the amount then paid. Accordingly, we must gross-up the amount the employer is willing to pay in year n to account for the deduction in year n, so that the employer can afford to pay at that time **$100(1 – t_{c0})(1 + r_{cn})^n/(1 – t_{cn})**, where t_{cn} is the employer's tax rate in year n.

8.1.1 Focus on Possible Change in Employer Tax Rates: We can reorder this to get $100(1 + r_{cn})^n**(1 – t_{co})/(1 – t_{cn})** (this is called D_n in our book at page 8-3). Focusing on the term in bold, we see that if the employer's tax rate in the current year is high and the employer's tax rate in year n is low, the amount of the deferred compensation goes down. This makes sense: from the employer's perspective, deferred compensation reflects a trade-off of a current deduction for a future deduction, and if tax rates decline, that is an ill-advised trade-off. Of course, if the employer's tax rates currently are low but are expected to increase, the trade-off becomes valuable. See Table 8.2 at page 8-3 for the effect of an increase or decrease in employer tax rates on deferred compensation amounts.

8.1.2 Focus on Relative Investment Returns: Ignore the possibility of changing tax rates for the employer so that terms in bold in section 8.1.1 above cancel, leaving only $100(1 + r_{cn})^n as the accumulated amount that can be paid to the employee. Because this amount will not be received by the employee until year n, the present value of the deferred compensation is $100(1 + r_{cn})^n/(1 + r_{pn})^n, where r_{pn} is the annual after-tax return that the employee can earn from investments. If r_{cn} = r_{pn} (that

is, if the employer and the employee can obtain the same after-tax return on investments), the employee is indifferent between investing the compensation directly or through the employer. But if we take taxes into account, then immediate salary will yield $\$100(1 - t_{p0})$ while deferred compensation will yield (in present terms, after accounting for taxes, and ignoring the possibility that the employer's marginal tax rate will change) $\$100(1 + r_{cn})^n(1 - t_{pn}) /(1 + r_{pn})^n$. From this we see that the employee's desire to trade current salary for future deferred compensation turns on the employee's current tax rate, the employee's expected future tax rate, and the relative return that the employee can obtain on investments as compared with the return that the employer can obtain on investments.

8.1.3 *All else being equal*, an employee in a high current tax bracket should prefer deferred compensation, a corporation in a low current tax bracket should prefer to pay deferred compensation, and compensation should be invested by whomever can obtain the best after-tax return. Do not forget that many things other than taxes affect the decision to pay (or receive) current or deferred compensation.

8.1.4 Employer and Employee Tax Rates Both Expected to Fall: When all tax rates are expected to fall, the tax benefit of deferring compensation must account for both the employee's reduced future tax rate (pointing in the direction of deferred compensation) and the employer's reduced future tax rate (pointing in the direction of immediate salary). Suppose, for example, that the employer's tax rate is expected to decline from 46% to 34%, and the employee's tax rate is expected to decline from 25% to 15%. Assume the employer and the employee can invest funds at an after-tax rate of 6% per year.

8.1.4.1 Immediate salary of $100 would cost the employer $\$100(1 - 0.46)$, or $54. If that amount is not

paid as salary but is instead invested by the employer at 6% for two years, the employer will accumulate $60.67. If that amount is then paid as compensation, the employer will be entitled to a deduction at the then-current tax rate of 34%. To account for this deduction, the employer should be able to pay deferred compensation of $60.67/(1 – 0.34), or $91.92. The after-tax, present value of this deferred compensation to the employee equals $91.92(1 – 0.15)/$(1.06)^2$, or $91.92(0.85)(0.89), or $69.53. Since immediate salary of $100 would be worth $100(1 – 0.25), or $75.00 to the employee, the deferred compensation is less valuable than immediate salary.

8.1.4.2 Suppose, however, that the employee's tax rate starts at 50% and declines to 28%. Now, the after-tax, present value of the deferred compensation equals $91.92(1 – 0.28)/$(1.06)^2$, or $58.90, and this is more than the after-tax value of immediate salary of $100.

8.1.4.3 Suppose the employer is a tax-exempt organization so that its tax rate is 0% in all years. Thus, immediate salary of $100 has an immediate after-tax cost to the employer of $100, and if this amount is invested for two years rather than immediately paid, the employer will have $112.36 to pay in deferred compensation. If the employee receives and includes that amount in two years as deferred compensation (when the employee's tax rate equals 28%), the after-tax, present value of the deferred compensation equals $112.36(1 – 0.28)/$(1.06)^2$, or $72.00. This is more than the present-value of immediate compensation if the current employee tax rate is greater than 28%.

8.1.4.3.1 NB: in this hypothetical, the only variables that matter are the employee’s current and future

tax rates. By hypothesis, the employer's tax rate remains 0% and the rates of return earned by the employer and employee are the same. The employee's current and future tax rates are the only variables that remain.

8.1.5 2017 TCJA Tax Planning with Deferred Compensation Plans: Corporate tax rates were reduced from 35% to 21%. Individual tax rates changed in ways hard to measure, but assume the employee's tax rate declined from 28% to 24%. If the employer paid salary in 2017 of $100, the after-tax cost to the employer was $100(1 – 0.35), or $65. The value to the employee was $100(1 – 0.28), or $72. If the salary was deferred for one year, then the employer could afford to pay the $65/(1 – 0.21) (accounting for the 21% deduction in 2018), or $82.28. However, the present after-tax value of receiving $82.28 in one year is only $82.28(1 – 0.24) /(1.06), or $58.99. As a result, while the employer is indifferent between paying an immediate salary of $100 and a deferred salary of $82.28, the employee prefers the immediate salary.

8.2 Salary Versus Fringe Benefits: With respect to compensation paid in kind rather than in cash, some forms of such compensation may be excludible fringe benefits. That is, the employee can exclude the value of the in-kind receipt even though the employer can deduct the payment. Note that we will assume such in-kind compensation can be used by the employee or not used by the employee but cannot be sold by the employee. This accurately describes most fringe benefits such as employer-provided health insurance and parking.

8.2.1 Example 1: Suppose an employer is willing to spend $1,400 on immediate salary or on a $1,400 health insurance policy. If the employee is desirous of health insurance but received the salary, the employee will have only $1,400(1 – t), or $952 after-taxes, assuming a 32% employee tax rate. Note, though, that some employees might not value health insurance so

highly (that is, if they had $1,400, they would not purchase the policy). The health insurance fringe benefit will be a desirable salary substitute only for those employees who value the policy at $952 or more. Note that to the extent they value the policy at more than $952 but less than $1,400, there is a *dead-weight loss* because $1,400 must be spent for the policy but less than $1,400 in personal value is received by the employee. How could this dead-weight loss be eliminated?

8.2.2 Example 2: Suppose an employee incurs $5,000 of potentially reimbursable business meal and entertainment expenses. If they are reimbursed by the employer, the employee has no income or deduction and the employer has a deduction equal to half of the amount reimbursed. If the employee is given a salary supplement in lieu of reimbursement, the employer can deduct the entire amount paid, and the employee must include the salary supplement without any allowable deduction.

8.3 Cash Bonus Plan: Cash bonus plans are taxed just like salary but offer the ability to adjust timing as needed. Bonus plans are most often used not to exploit changes in tax rates but as part of an incentive compensation system.

8.4 Stock-Based Compensation Components

8.4.1 Restricted Stock: A restricted stock grant gives stock ownership to an employee subject to possible forfeiture based on future events. In general, section 83(a) provides that the employee does not have income from the grant of restricted stock until the risk of forfeiture disappears (that is, until ownership of the stock *vests*). The employee must include as ordinary income the value of the stock *at the time of vesting*, and any post-vesting appreciation or loss will be treated as capital gain or loss at time of disposition of the shares. *In all events, the employer deducts the amount that the employee includes when then employee includes the ordinary income*. If the

employee files an election under section 83(b) within 30 days of receiving the restricted stock, the employee is taxed immediately on the value of the shares at the time of issuance, with any subsequent appreciation or loss taxed as capital gain or loss at time of disposition. Once again, the employer deducts what the employee includes at the time of inclusion by the employee.

8.4.1.1 If an employee anticipates substantial appreciation in the restricted stock prior to vesting, the employee will be tempted to file a section 83(b) election to ensure that appreciation is taxed as capital gain. One problem with filing such an election is finding the funds with which to pay the tax since the stock as a practical matter cannot be sold or pledged (because of the restrictions).

8.4.1.2 An alternative strategy is to use available funds not to pay the tax resulting from an election under section 83(b) but to instead purchase additional, unrestricted stock. If that course is followed, the employee will capture the gain on the restricted stock as ordinary income along with gain on the additional stock as capital gain. As the book shows at pages 8-9 through 8-10, this strategy dominates the 83(b) election strategy, assuming the employee is risk-neutral. Note that because this strategy consists of purchasing more stock, the employee will lose if the stock declines in value. Thus, for an employee who is risk adverse (or who seeks diversification), using available funds to purchase other assets may be a better strategy.

8.4.1.3 Employee Tax Rates Expected to Rise: If the employee anticipates tax rates will rise, filing an election under section 83(b) may make sense to incur the ordinary income at the current, lower rate. As shown on

pages 8-11 through 8-12, this makes sense if the anticipated rate increase dominates the increase in anticipated stock value.

8.4.2 Long-Term Performance Awards: Long-term performance awards reward the employee with stock or cash (sometimes called “phantom stock”) where the value of the award is based on the performance of the employer company over some defined, long-term period.

8.4.3 Employee Stock Options and Stock Appreciation Rights: A stock option is the right (but not the obligation) to purchase some quantity of the employer's stock at a fixed price (usually the market price on the date the option is granted) at some time in the future. If the strike price is not below the market price at the time the option is issued, receipt of the option is tax free. A stock appreciation right, sometimes called "phantom stock," is a right to get the appreciation, if any, in some specified quantity of stock at some time in the future. Note that with both stock options and stock appreciation rights, the employee has a possibility of gain but no possibility of loss.

8.4.3.1 Consider stock currently trading at $20 with a future price known to be uniformly distributed between $10 and $40. The expected value of the stock is ($40 + $10)/2,[1] or $25. If that in fact turns out to be the eventual value of the stock, then a stock appreciation right issued at $20 will pay $5. Similarly, a stock option issued with exercise price of $20 will show a profit of the same $5.

8.4.3.2 But what is the *expected* value of the stock appreciation right (or of the stock option)? For final values between $10 and $20, the value will be $0. For final values between $20 and $40, the value of the stock

[1] The book asserts that this is true but does not prove it. In fact, this equation is correct but to get the correct answer, one should integrate the possible values times the likelihood of occurrence.

appreciation right (or equivalent stock option) will be that value less $20. Because there is a one-third probability of the final value of the stock being between $10 and $20 and a two-thirds probability of the final value of the stock being between $20 and $40, the expected value of the stock appreciation right (or of the equivalent stock option) is one-third times $0 plus two-thirds times ($20 - $0)/2, or $6.67. Why is this more than $5.00? Because while the actual share can lose value (if it ends up being worth $10 to $19.99), the stock appreciation right (or equivalent stock option) cannot ever be worth less than $0.

8.4.4 Tax Issues Relating to Incentive Stock Options and Nonqualified Stock Options

8.4.4.1 Taxation of Nonqualified Stock Options: There are no tax consequences when the option is granted, the employee is taxed when the option is exercised (assuming the value of the stock on the exercise date is greater the strike price), and when the stock is sold, any post-exercise appreciation is taxed as capital gain. The employer deducts as compensation the value taxable to the employee on the exercise date.

8.4.4.2 Taxation of Incentive Stock Options: There are no tax consequences when the option is granted, there are no tax consequences when the ISO is exercised, and when the stock is sold the value received less the strike price is taxed as capital gain. The employer gets **no deduction** for an ISO at any time.

8.4.4.3 Benefits to the Employee of an ISO as Compared with a NQO: The ISO allows the employee to defer the exercise gain to the time of disposition of the shares *and* it converts that gain from ordinary income to capital

gain. The cost of this deferral and conversion for the employee is the loss of deduction to the employer.

8.4.5 NQOs Versus ISOs: The benefit to the employee of an ISO is clear: taxes that otherwise would be due on the exercise gain, i.e., $(P_e - X)t_p$, are deferred and converted to become $(P_e - X)t_{cg}/(1 + r)^n$. (Note that the book sometimes uses t_{cg*} to mean $t_{cg}/(1 + r)^n$.) If the employer wants to substitute a NQO for the ISO without hurting the employee, then the employer must reimburse the employee for the additional tax burden. Accordingly, the employer must provide additional stock options worth $(P_e - X)t_{cg}/(1 + r)^n - (P_e - X)t_p$. Note that if we set t_{cg*} equal to $t_{cg}/(1 + r)^n$, we get $(P_e - X)t_{cg*} - (P_e - X)t_p$, and that can be rewritten as $(P_e - X)(t_p - t_{cg*})$ (equation **8.10** at page 8-16). However, if this additional amount is paid in cash, it is immediately taxable to the employee, so we must gross-up the amount to account for the taxes the employee must pay. As a result, to substitute a NQO for an ISO without hurting the employee, the employer must include additional cash of $(P_e - X)(t_p - t_{cg*})/(1 - t_p)$, which is set forth in the middle of page 8-16 (slightly above equation 8.11).

8.4.5.1 Why would the employer want to pay an additional cash bonus to the employee if the additional cash bonus does not improve the after-tax position of the employee? To obtain the compensation deduction available with the NQO (as well as the deduction arising from payment of the cash bonus). Equation **8.11** (page 8-16) sets out when it will be worthwhile to the corporation to buy these deductions, and this is simplified in equation **8.12** (page 8-17).

8.4.5.2 The corporation is buying a deduction. The higher the corporation's tax rate, the more valuable the deduction. Thus, on the left side of equation 8.12, we

see that if the corporation's tax rate is high, substituting a NQO makes more sense.

8.4.5.3 The corporation must pay for the employee's loss of deferral and loss of conversion. The loss of conversion is reflected in the term ($t_p - t_{cg*}$), and the loss of deferral is hidden in t_{cg*} because $t_{cg*} = t_{cg}/(1 + r)^n$.

8.4.5.4 Table 8.5 (page 8-17) shows how high the corporate tax rate must be for NQOs to be more advantageous than ISOs. For example, with an investment horizon by the employee of 10 years until the stock is sold and using current tax rates, NQOs are mutually advantageous if the corporate tax rate exceeds 29.6%.

8.4.5.5 If the employer and the employee face the same tax rates on ordinary income, NQOs are preferable because a deduction to the employer is worth more than deferral plus conversion to the employee: deduction to the employer is worth exclusion to the employee when they have the same tax rates.

8.4.5.6 If the employer is in a higher tax bracket than the employee, ISOs make even less sense.

8.4.5.7 If the employer is in a low bracket as compared with the employee, ISOs may provide a net advantage.

8.4.6 Evidence on the Role of Taxes in the Choice of ISOs: Evidence shows that grants of ISOs have been dependent on relative tax rates, as we would expect. Note that for start-up companies, ISOs often make sense even if the statutory rates would suggest the contrary because start-ups often have very low tax rates for many years.

8.4.7 Disqualifying Dispositions of ISOs: Issuing ISOs is an adaptable tax strategy because an employee can dispose of the underlying stock in a "disqualifying disposition." If that is done, the tax treatment of the ISO flips to that of a NQO. Presumably

the corporation will have to pay the employee to do this since a disqualifying disposition increases the employee's taxes but gives the employer a compensation deduction.

8.4.8 The Role of Taxes in the NQO Exercise Decision: An employee owning nonqualified stock options can exercise the options prior to expiration. This might be done for a variety of non-tax reasons including a desire for diversification, consumption, or a desire for liquidity. If the employee believes that the stock will increase in value substantially, does it make sense to exercise early so as to convert future appreciation from ordinary income into capital gain? This is the same question we asked with respect to the section 83(b) election, and the answer remains unchanged: for a risk-neutral employee who believes the stock will appreciate substantially, a better strategy is to use the money that would be used to pay immediate taxes on the conversion to purchase additional shares of stock. See Table 8.6 at page 8-23 of the textbook. Note that for an employee who cannot borrow to pay any taxes owed on the exercise of the options, an alternative is to convert the options into stock, sell the stock to generate funds with which to pay for the stock and to pay the taxes due on exercise, and then use whatever is left over to repurchase shares in the market (see problem 25 at the end of this chapter for an example of this strategy). Note also that if the employee expects the stock to decline in value, the optimal strategy is to exercise the options immediately and then sell the stock so as to avoid the subsequent decline in value. See footnote 25 at page 224 of the textbook.

8.4.9 Tax Rates Are Expected to Increase

8.4.9.1 To understand this part of the Chapter, you need to know how to value options. Consider an option that gives the holder the right to purchase one share of X Corp. for $100 (that is, the strike price of the option is

$100) and assume the option can be exercised anytime during the next 12 months (that is, the option duration is 12 months). If the current value of the stock is less than $100, there is no value in exercising the option currently but the option is still valuable *because the stock may increase in value above $100 during the next year.* If the stock is currently trading above $100, then the option could be exercised immediately for a gain but the option is worth even more unexercised because it has all the value of owning one share of stock without any immediate cost (and so without any downside). The excess of the current value of the stock over the option strike price is called the "intrinsic value" of the option while the value of the option if the strike price equals the current value of the stock is called the "time value" of the option. The current value of the option (and options are valuable property, bought and sold every day) is simply the sum of the intrinsic value and the time value. *Note that because time value is always a positive number, it never makes economic sense to exercise an option early unless there is some tax reason to do so or you believe the option is mispriced and you cannot sell it.*

8.4.9.2 Definitions

8.4.9.2.1 Call Option: The right to purchase some underlying asset (usually stock) at a set price over some period of time.

8.4.9.2.2 Put Option: The right to sell some underlying asset (usually stock) at a set price over some period of time.

8.4.9.2.3 Strike Price: The price that must be paid by the buyer when an option is exercised.

8.4.9.2.4 Spot Price: The current value of the underlying asset.

8.4.9.2.5 Intrinsic Value: The excess of the spot price over the strike price for a call option; the excess of the strike price over the spot price for a put option.

8.4.9.2.6 Time Value: The excess of the market value of an option over the intrinsic value of the option.

8.4.9.2.7 Underwater: An option is said to be "underwater" (or "out of the money") if the strike price is above the spot price (for a call option) or if the strike price is below the spot price (for a put option).

8.4.9.2.8 In the Money: An option is said to be "in the money" if its intrinsic value is positive.

8.4.9.2.9 Black-Scholes Formula: A mathematical formula providing the time value of an option, dependent on the duration of the option and the volatility of the underlying asset. Because the volatility can never be known in advance, the weakness of the Black-Scholes formula is that the computation must be based on an estimate of future volatility.

8.4.9.3 As the duration of an option gets shorter, its time value declines so that most of its value, if any, is in its intrinsic value. Remember that *in all cases the value of an option equals its intrinsic value plus its time value.*

8.4.10 If the owner of an option exercises the option early, the owner fully captures the intrinsic value but throws away the time value. Why would an owner do this? One reason is that tax rates are expected to increase, because in such circumstances it may be worthwhile to lose the time value of the option in exchange for taxation of the intrinsic value at lower tax rates. This is shown in equation **8.17** (at page 8-23 of the textbook), where P_e is the current spot price, X is the strike price, and W is

the current value of the option. If you look at example 8.8 at page 8-24 of the textbook, the first set of options has an intrinsic value of $40 and a time value of $1 while the second set of options has an intrinsic value of $20 and a time value of $8.

8.4.11 Differences Between Restricted Stock and ESOs

8.4.11.1 Restricted stock increases in value on a dollar-for-dollar basis as the company's stock increases. Stock options are a bit more complicated: they have almost no value if they are deeply under water, then increase in value (because of the time value) as they get closer to being at the money, they continue to rise as they become in the money (because of intrinsic value), but as the intrinsic value becomes great, the time value starts to almost disappear. Thus, the payoff function of stock options is not a straight line but rather more bowl-shaped, with the bowl facing down (that is, "convex").

8.4.11.2 Holders of restricted stock are entitled to receive any dividends on the shares during the vesting period. Holders of stock options are not entitled to such dividends and, absent special contractual provisions, are not otherwise dividend-protected. That is, because dividends paid by a corporation reduce the value of corporate assets, holders of stock options generally see a decline in value if dividends are paid. Holders of restricted stock and stock appreciation rights usually get the benefit of the dividends in one form or another. How could an employee negotiate for dividend-protected stock options?

8.4.11.3 Holders of convertible debt generally are protected from dilution by contractual terms providing that the conversion ratio will adjust to account for any new shares issued while the convertible debt is

outstanding. Similarly, the conversion ratio generally will adjust if dividends are paid on common shares. Thus, such convertible debt does not expressly share in dividends but has an equivalent synthetic dividend protection.

8.4.12 Compensation in Venture-Capital-Backed Start-Ups: In venture capital-backed start-ups, the founders of the company generally receive common shares and the investors receive convertible debt instruments. Further, the terms of the conversion often provide that if certain profitability goals are satisfied, the conversion ratio will decline, giving the investors a reduced share (of the profitable company). Reducing the conversion ratio has the effect of giving a tax-free bonus to the founders by increasing their relative ownership of the enterprise. Because the corporation does not get a deduction for this implicit bonus, it is equivalent to an ISO and so generally is tax inefficient except for corporations with low marginal tax rates.

8.4.13 Limits on Deductibility of Executive Compensation: In 1993, Congress added section 162(m) to the Internal Revenue Code. This provision disallowed deductions for annual compensation in excess of $1 million per employee per year unless the compensation was performance-based. The effect of section 162(m) was to shift most compensation for top corporate managers into the form of stock options. The avowed purpose of section 162(m) was to preclude high compensation for corporate employees unless they generated high value for the shareholders. Note, however, that performance-based compensation within the meaning of section 162(m) did not have to be linked to share-price, could ignore general increases in the broader equity market, and the strike price could be reset down if share price actually falls. As part of the TCJA of

2017, §162(m) was extended to *all* executive compensation including incentive-based compensation.

8.4.14 Concluding Remarks: The tax implications of equity compensation can be important, but non-tax considerations often are more important still. Complex compensation arrangements must address multiple factors including the need for liquidity, risk-aversion (including a desire for diversity), and manager ego.

8.5 Discussion Questions (p. 35)

8.5.1 Question 1: The deferred compensation alternatives listed in Table 8.1 (page 8-2 of the textbook) generally are in the order preferred by the employee *for a fixed dollar of income of deferred compensation*. But the amount of the deferred compensation the employer is willing to pay should be dependent on the tax treatment to the employer, so that if the employee accepts a more harshly taxed form of deferred compensation so as to benefit the employer, the employer should be willing to pay more. After taking the tax positions of both parties into account, it is hard to rank the alternatives although nontaxable fringe benefits (if excludible to the employee and fully deductible to the employer) generally offer the best of all possible outcomes.

8.5.2 Question 6: Discretionary bonus plans are attractive because they are flexible and can be set near the end of the year when employers and employees have more precise estimates of their current and future tax rates. But it is hard to draft a binding contract that preserves this flexibility, and so such bonus arrangements usually depend for their execution of the reputation of the employer. Presumably employees will require a significant premium to accept a nonbinding promise in lieu of salary.

8.5.3 Question 7:

8.5.3.1 Part (a): False: true for non-dividend-paying stocks because of the down-side risk of actual stock ownership but may be false for dividend-paying stocks because SARs may not dividend-protected. (SARs that are dividend-protected often are called “phantom stock.”)

8.5.3.2 Part (b): False. Small start-ups presumably want to report high earnings. SARs give rise to compensation expense for financial reporting purposes each period as the stock price changes. Increases in stock price result in an increase in compensation expense, and decreases (of prior increases) result in a reduction of compensation expense (but reductions in compensation expense are limited to the original grant date price). Under SFAS 123R, the initial estimated value of stock options is recognized ratably over the vesting period of the options. Thus, changes in stock prices do not affect the corporation's tax treatment of stock option grants. Since the corporation anticipates that its stock price will rise and wants to maximize reported earnings (that is, it wants to minimize its deductions), it should prefer options to SARs.

8.5.3.3 Part (c): Usually true: an ISO gives the employee deferral and conversion but at the cost of the employer's deduction. If employer and employee are in the same tax-bracket, this trade-off would net only if the employee was given exemption rather than merely deferral and conversion. As a result, the ISO is a poor tax-strategy unless the corporation is in a relatively low tax-bracket (so the cost of the ISO to the employer is cheap) or the employee stands to gain much from deferral and conversion (which usually means that ordinary income rates are high, capital gain rates are low, and the employee has a relatively long investment

horizon). More formally, a NQO will be preferred to an ISO if $t_c > (t_p – t_{cg*})/(1 – t_{cg*})$, where t_c is the corporation's current tax rate, t_p is the employee's current tax rate, and t_{cg*} is the employee's expected capital gain rate discounted for the employee's expected investment period between option exercise and sale of the stock (that is, t_{cg*} is the employee's effective capital gain rate). See equation **8.12** (at page 8-17 of the textbook). Qualitative assessments from this equation include: (1) a higher corporate tax rate makes NQOs more attractive, and (2) a higher differential between employee ordinary rate and effective capital gain rate makes ISOs more attractive.

8.5.3.4 Part (d): True. The 1986 Tax Act made it desirable in many cases to replace ISOs with NQOs. It did so by increasing capital gains tax rates (not only relative to ordinary tax rates but also in absolute terms from 20 to 28%) and by reducing personal tax rates below corporate tax rates for the highly-paid employees. Compare the first two periods of Table 8.5 (page 8-17 of the textbook).

8.5.3.5 Part (e): True. The TCJA of 2017 reduced the corporate tax rate from 35% to 21%, thereby reducing the cost to the corporate employer of the foregone deduction.

8.6 Exercises (p. 36)

8.6.1 Exercise 13:

8.6.1.1 Part (a): If the employer pays an immediate $1 million today, the immediate after-tax cost equals $1 million times (1 - 0.30), or $700,000. If the employer does not pay the bonus today, it can invest that amount for 5 years at an after-tax annual return of 7%, yielding $\$700{,}000(1.07)^5$, or $981,786. That will allow the

employer to pay a bonus in year 5 of $981,786/(1 - 0.40), or $1,636,310, because the payment will then be deductible. Note that this answer assumes the payment in year 5 will not be subject to section 162(m).

8.6.1.2 Part (b): An immediate cash bonus of $1 million today is worth $1 million times (1 - 0.50), or $500,000 after taxes. A bonus of $X paid in 5 years has a present value of $X(1 – 0.35)/$(1.07)^5$, or $X(0.46344) because the future payment is deferred and will be taxable. Setting this equal to $500,000 and solving for $X yields $X = $500,000/0.46344, or $1,078,886.

8.6.1.3 Part (c): Payment of any amount greater than $1,078,886 and less than $1,636,310 profits both parties. Note that the future tax rates and the annual investment return are uncertain, and individuals tend to be more risk-averse than corporations. Accordingly, the individual presumably will require a significant share of the joint gain from deferral to agree to defer the bonus.

8.6.2 Exercise 14:

8.6.2.1 Part (a): An immediate bonus of $100 would yield $69 after-taxes. A future payment of $D* in year 9 has a discounted value of $D*(0.69)/$(1.08)^9$. Setting this value equal to $69 and solving for D*, we get $D* = 69(1.08)^9$/0.69, or $199.90.

8.6.2.2 Part (b): An immediate, immediately taxable bonus of $100 yields an after-tax return after 9 years of $100(0.69)$(1.08)^9$, or $137.93. A pension contribution of $P* will grow to $P*$(1.12)^9$, and that amount will be fully taxable to the employee, so the employee will have $P*$(1.12)^9$(0.69). Setting this equal to $137.93 and solving for P* yields P* = 137.94/$(1.12)^9$(0.69), or P* = 72.09.

8.6.2.3 Part (c): The after-tax cost to the employer of an immediate bonus of $100 is $100(1 - 0.34), or $66; of the deferred payment of $199.99 is $199.90(1 – 0.40)/(1 + 0.10)^9, or $50.87; of the immediate pension contribution of $72.09 is $72.09(1 – 0.34), or $47.58.

8.6.3 Exercise 15:

8.6.3.1 If the employee received the insurance, the employee would be taxed on $2,000 of the $3,000 cost. But if the employee is given cash, then the employee must be given enough to cover all the cost without incurring additional tax. Thus, the employee must receive $2,000 plus an amount sufficient to leave $1,000 after taxes, or $1,000/(1 – 0.12) = $1,136. Thus, the employee must be paid cash compensation of $3,136

8.6.3.2 For an employee in the 32% bracket, total cash compensation must equal $2,000 plus $1,000(1 – 0.32), or cash = $3,471. The exclusion of $1,000 is equivalent to compensation of $1,136 to the low-bracket employee and $1,471 to the high-rate employee, a difference of $334.

8.6.4 Exercise 19:

8.6.4.1 Part (a): In year 1, the employee has no income from the options; in year 2, the employee has ordinary income of 10,000 times $48 - $40, or $80,000 of ordinary income; in year 3, the employee has capital gain of $2 per share, or $20,000 of total capital gain.

8.6.4.2 Part (b): MS can deduct $80,000 in year 2.

8.6.4.3 Part (c): Under SFAS 123R, estimate the fair value of the option grant and amortize over the vesting period (here, likely 2 years). Accrue (recognize) the estimate of the tax benefit of the amount amortized multiplied by the corporate tax rate.

8.6.4.4 Part (d): For the employee, no income year 1 or year 2 and capital gain of $100,000 in year 3. For the employer, no deduction in any year.

8.6.5 Exercise 21:

8.6.5.1 Part (a): For Eisner, exercise in 1992 generates an after-tax value of 5M times ($40 – 3.59)(0.31), $56.43M, while an exercise in 1993 would yield 5M times (40 – 3.59)(0.396), or $72.09M. That is a difference of $15.66M, or $5M times 36.41 times (0.396 – 0.310). For Wells, the tax savings equals $1.64M times 36.41 times (0.396 – 0.310), or $5.135M.

8.6.5.2 Part (b):

8.6.5.2.1 The cost to exercise the options on 5M shares, C, equals 5M times $3.59, or $18M.

8.6.5.2.2 The total proceeds received by Eisner, P, equals 3.45M times $40, or 138M.

8.6.5.2.3 Gain on the shares sold, G, equals 3.45M times ($40 – 3.59), or 125.6M.

8.6.5.2.4 The tax due on the sale, T, equals the tax rate times G, where the tax rate equals 31%. Therefore, T equals 0.31 times $125.6M, or $38.9M.

8.6.5.2.5 Therefore, the cash flow to Eisner equals P less (C + T), or $81.1M.

8.6.5.3 Part (c): By pushing the deduction into the earlier year, the $1M limitation was avoided. Thus, the net benefit to Disney of the Eisner acceleration was 5M times ($40 – $3.59) times 0.35, or $63.7M. For the Wells acceleration, the net benefit to Disney was 1.64M times ($40 - $3.59) times 0.35, or $22.55M.

8.6.5.4 Part (d): If the deduction is not lost because the limitation was delayed and outstanding options were grandfathered as performance-based compensation,

then the only benefit to Disney of the acceleration is the time-value of the acceleration of the deduction.

8.6.5.5 Part (e): One year acceleration of the deduction.

8.7 Tax-Planning Problems (p. 38)

8.7.1 Problem 22:

8.7.1.1 Part (a): The employer's after-tax rate of return equals 0.12(1 – 0.40), or 7.2%. Accordingly, if D* is the maximum deferred compensation the employer will be willing to pay in lieu of the bonus, then $D^*(1 - t_{cn}) = \$75{,}000(1 - t_{c0})(1.072)^5$, where $t_{cn} = t_{c0} = 0.40$. Therefore, D* = $106,178.

8.7.1.2 Part (b): Once moved to New York, the employee's after-tax rate of return equals 0.12(1 – 0.50), or 0.60. Accordingly, if D* is the least deferred compensation the employee will accept in lieu of the bonus, $D^*(1 - t_{pn}) = \$75{,}000(1 - t_{p0})(1.06)^5$, where $t_{p0} = 0.396$ and $t_{pn} = 0.50$. From this, we get D* = $121,243.

8.7.1.3 Part (c): Because the employee will demand more deferred compensation than the employer is willing to pay, they should not be able to agree on deferred compensation in lieu of immediate compensation of $75,000.

8.7.1.4 Part (d): (Why do the authors assume the employee is a man?) The facts now provide that $t_{pn} = 0.50$ if $n < 5$ and 0.31 if $n = 5$. Putting this change in the answer for part (b) yields $D^*(1 - 0.31) = \$75{,}000(1 - 0.396)(1.06)^4[1 + 0.12(1 - 0.31)]$, or D* = $89,747. (Note: this computation assumes that the final year of accumulation of the deferred compensation is taxable in Florida rather than in New York.)

8.7.1.5 Part (e): Yes, there is now a potential joint profit of $106,178 - $89,747, or $16,431 (in year 5), to divide.

8.7.2 Problem 24:

8.7.2.1 Part (a): The employee will pay taxes at the capital gains rate on the sale price less the strike price of $20 when the shares are sold. Let $X equal the present value of the tax then due on any value in excess of $35. Then the present value of total tax due will equal $X plus $100(\$35 - \$20)(0.20)/(1.07)^{10}$, or $X plus $152.50. The present value of HP's tax benefit is $0 because the employer can never claim a deduction for ISOs. (If you wish to compute t_{cg*}, it is defined to equal $t_{cg}/(1 + r)^n$, or $0.20/(1.07)^{10} = 0.1017$.

8.7.2.2 Part (b): For the employee, the value of $X as defined above does not change, but the remainder of the tax liability becomes 100($35 - $20)(0.50), or $X + $750. HP now gets a deduction with an after-tax value of 100($35 - $20)(0.10), or $150. Thus, the joint tax cost equals $X + $750 - $150, or $X + $600. On these numbers, the ISO is better by $447.50 (i.e., $600.00 – 152.50).

8.7.2.3 Part (c): Redoing part (a) with the employee's tax rate changed to 28% on all income means that the present value of the expected tax liability equals $Y + $100(\$35 - \$20)(0.28)/(1.07)^{10}$, or $Y + $213.51, where Y is the present value of the employee's future tax liability on any change in value of the shares from the current value of $35.

8.7.2.4 Part (d): Redoing part (b), the present value of the employee's tax value equals $Y + 100($35 - $20)(0.28), or $Y + $420. For HP, the present value of the deduction equals 100($35 - $20)(0.34), or $510. Thus, the NQO offers a joint tax cost of $510 - $420, or $90. To obtain this result if the options are ISOs, have the employee sell the stock immediately within 12 months of exercise; such a disposition of the shares is a disqualifying

disposition and causes the options to be treated as NQOs. Presumably HP will offer to pay something less than $510 (after-taxes) for the employee to make the disqualifying disposition. The financial reporting changes to HP have not been considered.

8.7.3 Problem 25:

8.7.3.1 Part (a): If you hold the options to maturity and then exercise the options and immediately sell the shares, your net proceeds per option will equal $\$35(1.20)^7 - \$20$, or $105.41, and your after-tax accumulation per option will equal $[\$35(1.20)^7 - \$20](1 – 0.37)$, or $66.41 per option for each of the 50,000 options.

8.7.3.2 Part (b): If you exercise the options immediately and then sell the stock, your gross proceeds per option will equal $35 - $20, or $15, and your after-tax return will equal $15(1 – 0.37), or $9.45. Thus, you can now purchase 9.45/35, or 0.27 shares for each option you exercise (or 50,000 times 0.27, or 13,500, shares in total). Each share will appreciate to $\$35(1.20)^7$, or $125.41 in 7 years, and when you sell those shares, your per-share after-tax return will equal $125.41 – ($125.41 - $35)(0.20), or $107.33. Since you only have 0.27 shares for each original option, your return in 7 years per option equals $107.33(0.27), or $28.98. Because this is less than holding the options to maturity, you should hold the options to maturity.

8.7.3.3 Part (c): If the options are ISOs, the after-tax accumulation per option becomes $[\$35(1.20)^7 - \$20](1 – 0.20)$, or $84.33. Early exercise of the ISO does nothing other than accelerate part of the tax liability.