

STOCK COMPENSATION: THE MOST EXPENSIVE WAY TO PAY FUTURE

CASH

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TABLE OF CONTENTS

I. INTRODUCTION

II. STOCK COMPENSATION IS MORE EXPENSIVE THAN DEBT

A. STOCK IS A PROXY FOR FUTURE CASH

- 1. Value from Sale Price*
- 2. Value from Accumulated Earnings*

B. THE EXTRAORDINARY COST OF STOCK

- 1. Pretax Discount Rates*
- 2. Tax Deduction for Interest*
- 3. Higher Return Corporations*
- 4. Current Conditions*

C. EXPLAINING THE EXTRAORDINARY COST OF STOCK

- 1. Volatility*
- 2. Agency Explanation*

III. STOCK COMPENSATION IS MORE EXPENSIVE THAN CASH

DEFERRED COMPENSATION

A. INCENTIVES

- 1. Drawbacks of Stock as an Incentive Device*
- 2. Stock Option Distortions*

3. *Incentives with Deferred Payment of Cash*

B. REDUCING THE DISCOUNT RATE

1. *The Value of an Enforceable Promise*

2. *Rabbi Trusts*

C. TAXATION OF STOCK AND DEFERRED COMPENSATION

1. *Model 1: Appreciation Only*

2. *Model 2: Nullification of Capital Gain*

IV. A NOTE ON COMPARING STOCK COMPENSATION WITH CURRENT CASH

V. CONCLUSION

I. INTRODUCTION

Silicon Valley is said to be a "stock option culture" because the high technology start-up companies rely so heavily on stock issued to employees as compensation.¹ Start-up companies, it is said, need stock options to motivate employees.² High technology companies have tenaciously defended the accounting treatment of stock options that allows the companies to avoid reporting any cost in their reports to shareholders when stock options are used as compensation.³ The "stock option culture," it is said, is "taking over the country."⁴

¹ See Justin Fox, *The Next Best Thing to Free Money*, Fortune, July 7, 1997, at 52.

² See Joseph Lieberman, *But They Do Create Good Jobs*, L.A. Times, Apr. 8, 1994, at B7.

³ See, e.g., Stephen A. Zeff, *The U.S. Senate Votes on Accounting for Employee Stock Options*, in Readings & Notes on Financial Accounting 507, 512 (Stephen A. Zeff & Bala G. Dharan eds., 5th ed. 1997) (reporting a Vietnam-era-style demonstration when hearings were conducted in San Jose, California, on a proposal to include stock options

Stock-based compensation, however, does not seem to make any sense. Stock is a particularly expensive way for the issuer to pay employees future cash. Stock has value only because it is a proxy for the cash that the issuer must pay out on the stock, some time in the future. Stock, fundamentally, has a value equal to nothing but the present value of that cash. The discount rate used to determine the present value of the cash to be paid on stock is extraordinarily high. The discount rate is high for reasons that are unnecessary to compensation or incentives. Reducing the discount rate by moving to some other format would reduce the employer's cost, increase the employee's benefit, or both.

Discount rates on stock are so high, first, because stock prices are so volatile. Shareholders, including employees, are risk averse. Investors react unkindly to stock-price volatility by driving down the market value of the stock or, put alternatively, by driving up the discount rate used to value the future cash from the stock. Most of the volatility on stock – usually about 80% of it – reflects factors that have nothing to do with the employer corporation. If the parties used deferred cash plans, instead of stock

as a cost of compensation in reported company earnings); Christi Harlan, *High Anxiety: Accounting Proposal Stirs Unusual Uproar in Executive Suites*, Wall St. J., Mar. 7, 1994, at A1; Lee Berton, *Accounting Rules Board is Under Fire as It Nears Decision on Two Key Issues*, Wall St. J., Apr. 6, 1993, at A2 (stating that outside criticism is rapidly mounting and that survival of Financial Accounting Standards Board may be at stake).

⁴ Fox, *supra* note 1, at 52. Almost all of the largest publicly traded firms in the United States permit granting stock options to executives, and in every industry surveyed, the median option grant is larger than the salary for the Chief Executive Officer. M.A. Klein,

compensation, the volatility could be dampened or eliminated. General market or industry-wide volatility, for instance, can be filtered out of compensation. Volatility that the employee can not control is like noxious waste. A rational planner should no more import noxious volatility into a compensation plan than she would import toxic waste into her living room.

Discount rates on stock are high, secondly, because the market distrusts managers. The market price for stock reflects fear that managers will divert accumulated earnings into salary or less-than-optimal projects. Using debt or deferred compensation to pay employees will drop the discount rate by increasing the credibility that the market accords to management. If managers will increase their creditability that the cash will in fact be available to employees, they can increase the present value of the cash they will pay, or reduce the cash they will pay, or both.

The discount rate on stock is so expensive, thirdly, because the discount rate can not be deducted. Stock bears an interest-like rental cost, paid to capital. The interest is reflected in the discounting of future cash by buyers and holders of the stock. The interest-like cost of stock, however, is not deductible by the issuer because no distributions on stock can be deducted. If the employees were given the commitment for future cash in the form of debt of the issuer-employer, then the rental cost would be called interest and it would ordinarily be deductible. Employer's can also get a deduction for their cash payments, including the interest-like component, if they will pay out the

Top Executive Compensation: 1995 Edition, (Conference Board Report, 1995)
(reporting that 87% of largest firms authorize executive stock option).

cash in the form of deferred compensation. By paying employees in stock, the issuer gives up valuable tax deductions.

Stock is more expensive for the issuer than are available alternative ways to pay future cash, that is, debt and deferred compensation payable in cash. The discount rate on debt – interest -- is far lower for the issuer than is the discount rate on stock. Tax deductions for interest on debt, but not for distributions on stock, make debt even cheaper. Over long spans of time, the average cost of interest, after tax and after inflation, has been zero or slightly below zero. Zero or slightly negative interest means that the employer can avoid any cost to deferring its cash payments for compensation if it will only use a debt format. Both debt and deferred compensation increase the present-value credit that the employer gets for its future cash, by increasing the issuer's credibility and lowering the discount rate.

Stock is often touted as a way to give capital gain to employees because capital gain is taxed at lower rates than ordinary-income compensation. Giving capital gain to employees, however, is usually poor tax planning. Deferred-cash compensation will ordinarily give the employee an after-tax benefit that is as good as having a zero tax rate on capital gain, keeping the employer's cost constant.

In recent years, stock has been extraordinarily expensive to the issuer. Assume, to illustrate, that a large corporation issues \$1000 of its stock to one of its secretaries as a year end bonus. From the end of 1994 to the end of 1997, stock of large corporations has

appreciated at an annualized, compound rate of 31% per year.⁵ Of that, 3% has been inflation, so the real growth has been 28% per year.⁶ Stock is a long-term investment, so assume that the stock bonus remains outstanding for 73 years (i.e. just over the length of the Ibbotson survey of stock and bond prices used here) and then the stock is redeemed back at its then fair market value.⁷ Assume, quite heroically, that the current growth rate continues. The corporation will accordingly pay \$65 billion to repurchase the stock bonus. Since none of the \$65 billion is deductible, moreover, the corporation will need to

⁵ According to [Ibbotson Associates, Stocks, Bonds, Bills and Inflation 1998 Yearbook 103 \(1998\)](#), the cumulative wealth of investor in large corporate stock increased from \$810.54 at the end of 1994 to \$1828.33 at the end of 1997 (with year-end 1925=\$1.00). This represents growth of 31.1% compound interest per year because $\$810.54 * (1+33.1\%)^3 = \1828.33 .

⁶ Because dollars have meaning only in the goods or services they buy, all long term growth rates should be stated with inflation excluded. According to Ibbotson Associates, *supra* note 5, at 105, large corporate stock wealth increased from \$97.059 to \$205.190 between year end 1994 and year end 1997. This represents growth of 27.91% compound interest per year because $\$97.059 * (1+27.91\%)^3 = \205.190 .

⁷ The corporation might not redeem the stock, but that is of no matter. The redemption price would then be viewed a proxy equal to the discounted present value of dividends to be distributed after that point of redemption. Using the redemption price instead of a complicated pattern of subsequent dividends is a simplification, which does not change the substantive analysis. Growth of \$1000 at 27.91% for 73 years will yield \$64.2 billion, which is rounded up to \$65 billion to make the relationship between pre- and post-tax amounts more obvious.

have \$100 *billion* in earnings to pay corporate tax at 35%,⁸ so to have the \$65 billion for the secretary's stock.

Now if a corporation wants to pay \$100 billion of its future earnings as a current year-end bonus to a secretary, that is its own business perhaps and not the business of the law. Still, one wonders why the corporation did not use a format with a lower discount rate. Using the same period and inflation assumptions and assuming an individual 30% tax rate, long term corporate debt has been giving a 6.6% after tax return.⁹ With the lower discount rate, the secretary would at least value the year end bonus, at a present value of \$620 *million*,¹⁰ which is also a much better reflection of the cost to the corporation in true, present-value terms.¹¹ Assuming that the recent growth rate on stock will continue for the full period of the next 73 years is undoubtedly an extreme assumption, but still, a corporation will also undoubtedly face a high discount rate on

⁸ I.R.C. §11.

⁹ As shown, *infra* notes 30-31, long term corporate bonds in the last three years have been giving a 13.4% nominal return rate (with inflation offsets included) and a 10.6% real return rate (excluding inflation). Nominal interest is subject to tax, at the assumed 30% rate. The after-tax, after-inflation rate of interest of the bonds is thus 10.6% - (30%*13.4%) = 6.58%.

¹⁰ $\$65,000,000,000/(1+6.58\%)^{73} = 620,000,000$

¹¹ Indeed, the corporation's tax rate is 35% rather than just 30% assumed for individuals, and using the same logic as in *supra* note 9, its after-tax, after-inflation discount rate is 10.6% less 35% of 13.4%, or 5.91%. $\$65,000,000,000/(1+5.91\%)^{73} = \983 million.

stock in the future, and faces a nontrivial risk of a very high discount rate. One suspects the corporation issued the \$1000 stock instead of \$1000 cash as the year end bonus to the secretary because someone in authority thought of the stock as cost free. Thus the employer committed its \$100 billion of earnings to the secretary because it thought of the stock as free.

The troubles with stock compensation suggest that a conscientious manager, trying to be fair and loyal to the firm and outside shareholders, should be avoiding using stock and stock options as compensation. Employer and employee working in tandem should move away from stock to reduce the discount rate and make it deductible. Reduction of the discount rate will reduce the cost to the employer, increase the benefit to the employee or both. Stock compensation uses the most expensive format by which to pay management.

Stock-based compensation, accordingly, should not be favored by business ethical norms and it should not be favored by the accounting, securities and corporate law provisions that attempt to civilize the self-interested behavior of management.

Part II compares stock compensation with debt given as compensation and argues that debt is cheaper than stock as a way to pay future cash to employees. Part III compares stock compensation to deferred cash plans argues that deferred cash compensation is cheaper than stock. Cash plans are also a superior incentive device. Part IV compares stock compensation with current cash compensation.

II. STOCK COMPENSATION IS MORE EXPENSIVE THAN DEBT

A. STOCK IS A PROXY FOR FUTURE CASH¹²

By issuing stock to an employee, the corporation has committed a fraction of its future cash to the employee. True, by issuing stock, the corporation has not *promised* the employee to make any payments. Dividend distributions or redemption of the stock cannot be compelled by a shareholder. Under the business judgment rule, the courts ordinarily delegate the decision as to whether to distribute cash to shareholders to the discretion of the board of directors.¹³ Nonetheless, the basic rule is that dividends and

¹² See, e.g., Thomas Copeland & J. Fred Weston, *Financial Theory and Corporate Policy* 21-22 (3d ed. 1988) (arguing that stock represents discounted present value of cash distributions). See also Calvin H. Johnson, *The Legitimacy of Basis from a Corporation's Own Stock*, 9 Am. J. Tax Pol'y 155 (1991) (arguing that fair market value of stock represents a real cost to the issue because it is net present value of future, nondeductible cash).

¹³ See, e.g., *Dodge v. Ford Motor Co.*, 170 N.W. 668 (Mich. 1919) (saying that a corporation may be forced to distribute dividends only upon compelling evidence that management was ignoring shareholder interest); *Panter v. Marshall Field & Co.*, 646 F.2d 271, 293 (7th Cir. 1981) (holding that "in the absence of fraud, bad faith, gross overreaching or abuse of discretion," courts will not interfere with corporate directors' business judgment). For a debate over whether management discretion should be highlighted for investors, compare Victor Brudney, *Dividends, Discretion, and Disclosure*, 66 Va. L. Rev. 85 (1980) (arguing that given conflict of interests between management and shareholders, disclosure of meaning of dividend decisions should be required) with Daniel R. Fischel, *The Law and Economics of Dividend Policy*, 67 Va. L. Rev. 699 (1981) (arguing that market discipline is sufficient).

liquidation proceeds must be equal for all shares of the same class, without preference or discrimination.¹⁴ A toddler learns early with siblings or in day care to cry, "Share," and the cry works fairly well as a remedy for shareholders too. By giving stock to employees, the corporation has promised to share its future cash between old shareholders and the employees who are becoming new shareholders.

A founder of a corporation who has given a new employee 10% of the stock of the business, accordingly, has given up 10% of the residual cash of the business. Employees receiving a stock bonus or buying stock under an option cannot gain anything from their stock, except symmetrically by drawing value away from existing shareholders. Stock has value only because it produces the cash.

Sometimes the effect of cash distributions on the value of stock is indirect. The return that shareholders get from shares includes the proceeds from sale of the shares to other investors. Accumulated earnings contribute to the sale price for stock, even though they are not cash to the investor-shareholder. Both sale proceeds and value from accumulated earnings depend, however, as the following sections show, upon the present value of future cash distributions on the shares:

1. Value from Sale Price

¹⁴ See 11 William Fletcher, *Encyclopaedia of Private Corporations* ¶ 5352 at 733-734 (1995); 18B Am. Jur. 2d *Corporations* § 1220 (1985).

The subsequent sale price for a share of stock is nothing but the price that a willing buyer will pay for it.¹⁵ A rational buyer pays no more for the stock than the net present value of the cash that is expected after the sale. If the present buyer is in turn relying on selling the stock to some further buyer, that further buyer must still be relying on the present value of subsequent cash flows. Some shareholders make money on "the greater fool" theory by finding someone to buy the stock for more than the seller paid without regard to present value of subsequent cash flows. But an investor relying on the greater fool is already pretty far down the road to foolishness. Buyers are usually self-protecting and rational and pay only the present value of the cash flows expected to be distributed by the corporation after the buyer's purchase. Ultimately, it is only the expectation of cash distributions that gives any value to the shares.

2. Value from Accumulated Earnings

Stock is also commonly priced looking to the earnings of the corporation, including earnings that are not distributed. Still, for accumulated earnings to have value, the earnings must be like compound interest on a bank account: leaving the interest on deposit, instead of withdrawing it, must mean that the interest will earn interest. To have value, accumulated earnings must increase the cash that is ultimately withdrawable. If management is going to waste the accumulated earnings on bad investments or looting compensation, then the accumulations do not contribute to share value. Thus, even growth stocks that are expected to give no distributions for the foreseeable future, have

¹⁵ See, e.g., Werner F.M. De Bondt & Richard H. Thaler, Anomalies: A Mean-Reverting Walk Down Wall Street, J. Econ. Persp., Winter 1989, at 189.

value only because accumulations and the sale price are proxies for cash to be distributed in the future.

Even unexpected increases in stock price after the corporation issues stock as compensation represent a cost to the corporation. A broad market such as the New York Stock Exchange is an efficient or "smart market" in which bargaining between buyers and sellers reflects publicly available information very quickly.¹⁶ The future is ultimately unknowable, so that market price will not be correct. Market price, however, is the best estimate of discounted present value of cash distributions reached by parties bargaining at arm's length and using all available information to maximize their own self interest. If the price of the issuer's stock goes up by 40% unexpectedly, the smart market has determined that the discounted present value of the future cash distributions has gone up by 40%. Cash distributions are the ultimate cost of stock to the issuing corporation, however, and fair market value of the stock just reflects a new appraisal of the issuer's real cost.

Much of the popularity of stock compensation seems to arise from a fallacy that stock is cost free.¹⁷ The issuing corporation can print its own stock, whereas it cannot

¹⁶ See e.g., Burton G. Malkiel, *Is the Stock Market Efficient?*, 243 *Science* 1313, 1317 (Mar. 10, 1989).

¹⁷ Current accounting rules allow a corporation to report stock options issued as compensation as having no cost to the corporation if paid pursuant to an option had no bargain when the stock amount and option price were set. See *Accounting for Stock-Based Compensation*, Statement of Financial Accounting Standard No. 123 ¶. (allowing continuation of Accounting Principles Board, opinion No. 25 ¶ 10). (Financial Accounting Standards Bd. 1995). For a criticism of the rule and discussion of accounting

print cash.¹⁸ "Dilution" does not seem to convey the idea of cost to the issuer. Much of the cash that gives stock its value will be paid long in the future. Much of the cash will be paid out beyond the time horizon that practical managers can see. In general accepted accounting, stock options may be reported on income statements as if they were free.¹⁹ Still, giving employees an option to buy stock of the issuer is also just a proxy for future cash that will be issued if the option is exercised. Issuing shares means that the corporation has to view itself as committing cash to the new employee if the stock is worth anything at all. Stock and stock compensation compete with other ways to pay

for stock options, see Calvin H. Johnson, *Accounting in Favor of Investors*, 19 *Cardozo L. Rev.* 637, 643-648 (1997); Calvin H. Johnson, *Stealing the Company With Free Stock Options: The Furor Over Accounting Standards* (pts. 1 & 2), 65 *Tax Notes* 355, 479 (1994); Calvin H. Johnson, *Professor Johnson Replies to FASB*, 65 *Tax Notes* 1149 (1994).

¹⁸ Legally.

¹⁹ Current accounting rules allow a corporation to report stock options issued as compensation as having no cost to the corporation if paid pursuant to an option had no bargain when the stock amount and option price were set. See Accounting for Stock-Based Compensation, Statement of Financial Accounting Standard No. 123 ¶. (allowing continuation of Accounting Principles Board, opinion No. 25 ¶ 10). (Financial Accounting Standards Bd. 1995). For a criticism of the rule and discussion of accounting for stock options, see Calvin H. Johnson, Accounting in Favor of Investors, 19 **Cardozo L. Rev.** 637, 643-648 (1997); Calvin H. Johnson, Stealing the Company With Free Stock Options: The Furor Over Accounting Standards (pts. 1 & 2), 65 **Tax Notes** 355 (1994), 65 **Tax Notes** 479 (1994); Calvin H. Johnson, Professor Johnson Replies to FASB, 65 **Tax Notes** 1149 (1994).

employees with future cash, and the alternative means, debt and deferred compensation, are cheaper.

B. COST COMPARED TO DEBT: THE EXTRAORDINARY PREMIUM ON STOCK

1. Pretax discount rates

Investments in stock have persistently had a higher return than investments in corporate debt over a very long period of time. According to data collected by Ibbotson Associates, a dollar invested in long-term corporate bonds at the end of 1925 until the end of 1997 would have given annual compound interest of 2.6%, measured after inflation.²⁰ A dollar invested in large company stocks over the same period stock would have given an annual compound return of 7.7%, measured after inflation.²¹ The dollar investment in stock gives a return which over the long term has been very much higher than the real return on debt.

An extraordinary premium return to investors is symmetrically a brutal cost to the issuer. Debt is extraordinarily cheap to an issuer and stock is extraordinarily expensive.

¹⁴ A dollar invested at the end of 1925 would be worth \$6.16 taking inflation out of the growth. Ibbotson Associates, supra note 5, at 104-05 (1998). That represents an compound annual interest rate of 2.56% because $\$1 * (1+2.56\%)^{72} = 6.16$. As noted, any comparisons of long-term investments need to be made in constant value dollars, from which inflation has been excluded, because the buying power gives a dollar its real meaning.

²¹ A dollar invested in a large company stock over the same period would have grown to \$203.19 in constant dollars. *Id.* That represents an interest rate of 7.66% since $\$1 * (1+7.66\%)^{72} = 203.19$.

Assume, for instance, that a corporate employer gives a \$1000 stock bonus to an employee, pays no dividends on the stock and then redeems the stock back seventy-two years later after the stock has grown in price by the average or 7.7% growth rate. The corporation would need to pay \$203,000 in cash to redeem back the stock. Stock is a very long lasting instrument for an issuer, so some very long period is appropriate for evaluating stock. Long-term perspectives also filter out or average out some accidental or temporary explanations. The \$203,000 redemption price reflects just the average cost for large corporations in the Ibbotson Associates sample.

Assume, by contrast, that the corporation gave a \$1000 indebtedness to the employee as a bonus, and that, like the stock, the issuer pays all the cash, both principle and interest, at the end of the same seventy-two-year term. Debt will not ordinarily have such a long term, but a corporation will have debt for its full existence so that the corporation's debt will be renewed or replaced. The renewals or replacements can be tacked together as a continuous single pool of debt, as if there were only one debt for the same period. The 2.6% real growth of the debt, means that the debt bonus is redeemed back for \$6155, in real constant-value-dollar terms. The \$203,000 redemption price for the stock given as compensation is thirty three times the \$6155 cash redemption price for the debt given for the same \$1000 of compensation.

2. Tax Deduction for Interest

The disparity between the high discount rate on stock and the cheap cost of debt is made even greater by tax. Interest on debt is deductible by the issuer, but distributions

on stock are not.²² The amount deductible on debt, moreover, is nominal interest, which includes an amount to offset inflation. Deduction of the inflation element of interest is undoubted an error, as a matter of reasonable tax policy. The inflation element of interest is not a real cost to the debtor because it does not represent a reduction in cost-of-living terms. Inflation erases the burden of some of the nominal interest paid because the debtor gains from being able to pay the debt in cheaper, inflated dollars that can buy less

²² For interest to be deductible, the debt must be a bona fide debt for tax purposes, payable without regard to the success or failure of the firm. A major economic test of whether debt is bona fide is whether a third-party creditor would be willing to lend the funds to the debtor-employer. *See, e.g.*, *Bauer v. Commissioner*, 748 F.2d 1365, 1369-70 (9th Cir. 1984) (holding that debt was bona fide because an independent lender such as a bank would be willing to make the loan); William T. Plumb Jr., *The Federal Income Tax Significance of Corporate Debt: A Critical Analysis and a Proposal*, 26 *Tax L. Rev.* 369, 530 (1971) (arguing that independent creditor's willingness to lend is the acid test of economic reality). Many start-up corporations cannot get loans from a bank or other third-party creditors. Testing whether a loan is bona fide is, however, a multi-factor test and some 32 factors have been identified as relevant. *See id.* Compensatory debt that is due without contingencies and which the parties enforce on its terms is probably bona fide debt if it is likely that payments can be made as due. There is, however, some tax risk of losing the deduction for interest for those companies that are not in a position to borrow. A finding that interest is not deductible will affect all of an issue and not just a marginal or excess amount of interest on the issue, but compensatory debt is issued in relatively small packages compared to total capital, and some compensatory debt might prove to be bona fide when issued, even when subsequent issues lose the interest deduction.

goods. Dollars have meaning only in terms of the goods and services they buy.²³ In the 72 year period of the Ibbotson sample, the nominal interest on long-term corporate debt has been 5.7%.²⁴ For much of the time of the Ibbotson data, the corporate tax rate has been above or near 50%.²⁵ A deduction of 5.7% nominal interest with a 50% tax rates saves tax of 2.85%. When tax savings of 2.85%, arising from deduction of nominal interest, are subtracted from the real interest cost of 2.7%, the after tax cost of interest is negative 0.15%. Negative real interest rates have persisted for long periods of time,²⁶ which indicates the phenomenon is not ephemeral.

²³ Including the inflation element within "interest" symmetrically means overtaxation of the creditor because the creditor is taxed on the "fool's profit" that just offsets the losses due to the shrinkage of buying power of the dollar. See, e.g., Daniel Halperin & Eugene Steuerle, Indexing the Tax System for Inflation, in Uneasy Compromise: Problems of a Hybrid Income-Consumption Tax 347 (Henry J. Aaron et al. eds., 1988).

²⁴ Ibbotson Associates, *supra* note 5, at 102-105 (showing that 1925 dollar in long-term corporate debt grew to \$55.38 after 72 years). $\$1 \cdot (1+i)^{72} = 55.38$, where $i = 5.73\%$.

²⁵ See, e.g., Joseph A. Pechman, Federal Tax Policy 249 (5th ed. 1987) (showing in detail that corporate rates were near or over 50% in World War II and from 1953-1986).

²⁶ Interest rates do not keep up with inflation, even ignoring tax. See, e.g., Martin D. D. Evans, Real Rates, Expected Inflation, and Inflation Risk Premia, 53 J. Fin. 187, 208 (1998) (explaining nominal interest's failure to keep up with inflation as indicating monetary fallacy that ignores changing real value of money). See also Eugene F. Fama, Term-Structure Forecasts of Interest Rates, Inflation, and Real Returns, 25 J. Monetary Econ. 59 (1990) (stating that interest rates do not meet changes in inflation); Martin

Negative after-tax, after-inflation interest rates for the corporate employer means the issuer has no cost for deferring costs, but rather a reward. Compensation is cheaper for the employer the longer that payment is deferred. The \$1000 bonus to the employee shrinks in real term over time if the bonus is given as debt. Considering the negative interest for the 72-year period of the model, the redemption price of a \$1000 bonus payable in debt is only \$898.²⁷ Considering the negative interest, the \$203,000 redemption price for the \$1000 stock bonus is not just thirty three times more cash than debt, it is 226 times more expensive than stock for the same \$1000 value to the employee.

The higher redemption price for stock than for debt, in real terms, can also be translated back into a smaller present value for the future cash that the corporation will pay. Stock requires a redemption payment that is 226 times more than the redemption payment for debt, given the assumptions, for the same \$1000 bonus. So it follows that stock gives the corporation a current value per dollar that the corporation must pay out eventually that is 226 times smaller than the credit the corporation will get for a dollar paid in redemption of debt. Debt gives the corporation more value for its money.

Feldstein, *Inflation, Income Taxes, and the Rate of Interest: A Theoretical Analysis*, 66 Am. Econ. Rev. 809, 816 n.15 (1976) (finding increases in interest rate that just match the increase of inflation, without regard to tax); Benjamin M. Friedman, *Who Puts the Inflation Premium into Nominal Interest Rates*, 33 J. Fin. 833 (1978) (finding an increase in bond yield of only 0.64% in response to a 1% increase in expected inflation).

²⁷ $\$1000 * [1+i]^{72} = \$1000 * 1 + (-.0015)^{72} = \$1000 * (.9985)^{72} = \$897.55$

3. Higher Return Corporations

For the most successful companies, stock is even more expensive. The cost of debt does not go up for more successful companies. If anything, debt might drop below the average rate as a company proves its creditworthiness. The cost of stock increases, however, with success of the company. Small company stocks have given an average return of 9.3% per year in real terms over the seventy-two years of the Ibbotson sample.²⁸ The average small company, under the sample, would need to redeem back its \$1000 stock bonus for \$613,000 in constant dollars, at the end of the term, or 100 times the cost of the debt. The small corporation also gets present value credit for only 1/613 of its future cash payment, or two-tenths of a penny per dollar paid.²⁹

4. Current Conditions.

Under current conditions real interest rates on debt are positive, after tax, at least temporarily. From the end of 1994 to the end of 1997, corporate long term debt bore a real interest rate of 10.6%³⁰ and a nominal (deductible) interest rate of 13.4%.³¹

²⁸ See Ibbotson Associates, *supra* note 5, at 104-105 says that a dollar in a small corporation stock has grown from \$1 to \$613.46. Since $\$1 * (1+9.32\%)^{72} = 613.46$, the growth reflects an interest rate of 9.32% per year..

²⁹ $\$1/613 = \0.0016 .

³⁰ See Ibbotson Associates, *supra* note 5, at 105 (showing a 1925 dollar invested in long-term bonds growing from \$4.55 to \$6.155 from the end of 1994 to the end of 1997 in constant-value dollars). $\$4.55*(1+i)^3 = \6.155 , where $i = 10.6\%$.

³¹ See *id.* at 103. (showing a 1925 dollar invested in long term corporate bonds growing from \$38.012 to \$55.38 in nominal terms). $\$38.012*(1+i)^3 = \55.38 , where $i = 13.36\%$.

Corporate tax rates have now dropped to 34%-35%.³² At those newer values, the real after-tax, after-inflation cost of interest has been 5.9% recently.³³ Interest after tax and after inflation is not now negative nor near zero. Still, debt, even though bearing positive interest, remains extraordinarily cheaper than stock. Over the same three-year period, large corporate stock has carried a time-value cost of 28%.³⁴ The 28% after-inflation yield implies redemption costs of roughly \$65 billion in real terms if the trend continues for 73 years. Redemption costs on the order of \$65 billion to redeem a \$1000 stock bonus are, of course, incredible, but they can not be dismissed in full. A successful corporation issuing stock faces a meaningful risk of having the stock become very expensive.

C. EXPLAINING THE EXTRAORDINARY COST OF STOCK

The premium cost of stock compensation is part of a larger puzzle, which is that corporations in general seem to be relying too little on debt and too much on stock. Debt carries risks from the issuer's side because creditors can force payment, even if the payments force the corporation to sell core assets and liquidate the business. The impact of creditor remedies, however, should not be overstated.³⁵ Rational creditors usually leave managers in place to salvage what it can from the assets, even in the case of

³² See I.R.C. § 11 (1998). Taxable income of over \$10,000,000 is taxable at 35%.

³³ $10.6\% - 35\% * 13.4\% = 5.9\%$.

³⁴ See *supra* note 6.

³⁵ Cf. William A. Klein, *High-Yield ("Junk") Bonds as Investments and as Financial Tools*, 19 Cardozo L. Rev. 505 (1997) (arguing that risks to issuers and investors of junk bonds are overstated).

bankruptcy. Corporations, moreover, are artificial entities and even liquidation or involuntary bankruptcy should not be confused with a life-threatening event to an individual like starvation or physical injury. The largest corporations, with the most net worth, have the least chance of bankruptcy, and their considerable net worth after subtractions of liabilities indicates that they are not using enough debt to reach equilibrium. Most corporations stop using debt considerably short of the point where more debt might entail a material risk of bankruptcy, and they stop considerably short of the point where the value of the interest deduction might be imperiled because the corporation has no taxable income.³⁶ Corporations should be issuing more debt overall, and less stock, including for the purpose of compensating employees.

Stock compensation is doubly puzzling, however, because the most plausible explanations for the extraordinary discount rate on stock, relative to debt, are not necessary or even a helpful part of compensation planning. Even if the general premium cost of stock over debt were fully explained, that would not justify the use of stock as compensation because none of the reasons for the general premium on stock are necessary or useful for compensation. Stock should be avoided in efficient compensation planning by avoiding stock, even if stock made some sense in other contexts..

³⁶ See, e.g., John R. Graham, *How Big the Tax Benefits of Debt?* Proceedings of the 91st Annual Conference on Tax Held under the Auspices of the National Tax Association (forthcoming 1999) (finding that corporations issue too little debt to be explained by risks of bankruptcy or loss of tax-value).

Stock, first, is a lot more volatile than debt over short and medium time horizons. Investors, including executives, need to insist on a premium return to overcome their aversion to volatility. Stock, secondly, plausibly carries a premium in order to overcome investor distrust of management. Managers can divert undistributed funds to excess compensation or less profitable projects and investors react by discounting the future cash that the managers turn out in fact to make on the stock, at premium rates. Both volatility and management distrust can be reduced or avoided in compensation planning. Issuers can avoid the premium discount rate and get more credibility for their future cash by switching over from stock compensation to debt or to deferred-cash compensation instead.

1. Volatility

Over a short or medium time horizons, stocks are much more volatile an investment than debt.³⁷ Holding stock tends to be like riding a roller coaster with dramatic swings in prices. Most of the volatility arises from factors outside the firm that executives can not do anything about.

Rational investors are risk averse. Losses hurt a real individual more than symmetrical gains help. Losses cut into muscle, and then bone, because they take away ever more desperately needed funds. Gains tend to add fat on top of current levels of

³⁷ For a discussion of the short-term very high volatility of stock see Richard A. Brearly & Stewart C. Myers, *Principles of Corporate Finance* 148-160 (5th ed. 1996). *See also* Ibbotson Associates, *supra* note 5, at 112. *See* discussion accompanying *infra* note 43 to the effect that for long term investment, with a time horizon of over 20 years, diversified investments in stocks tend to be less volatile than investments in debt.

consumption or standard of living. Executives have mortgage and tuition payments to meet and they maintain a reasonably high standard of living that they would miss if it were lost. Executives, like other investors, dislike risk. If there are two investments that have the same average yield and one is volatile in value and the other has a steady value, the volatile investment will be worth less. Investors require a premium to overcome risk aversion and the premium increases as the volatility of the investment increases, even if the expected or average outcome remains constant.

Most of the volatility of publicly traded stocks arises from factors which executives can not influence. Stock prices go up or down largely because of market-wide or industry conditions that cannot be correlated with the separate performance of the individual firm. One estimate has it that an average of 80% of variation in stock price for an individual firm is correlated with overall market movements or industry-wide price changes.³⁸ Only the remaining 20% of the variation has something to do uniquely with

³⁸ See Jeffrey Kerr & Richard Bettis, *Boards of Directors, Top Management Compensation and Shareholder Returns*, 30 *Acad. of Management J.* 645, 659 (1987).
See also, Richard Roll, *R*², 43 *J. Fin.* 541, 558 (1988) (noting that a company being mentioned in Wall Street Journal does not measurably affect its future stock prices); See James J. Angel & Douglas McGabe, *Market Adjustments for Executive Compensation at 19* (forthcoming 1999) (finding that 31% of variance of individual firm stock is explained by variance of stock market as a whole, but not attempting to identify or filter out industry wide variance).

the issuing corporation. To the extent that stock behavior is independent of the issuing corporation, it is also independent of the merits or control of the employee.

Making compensation levels subject to stock-price volatility adds an unnecessary noxious factor to a compensation plan, especially when the volatility arises from causes outside the firm. As a matter of physiology, animals given electric shocks without being able to do anything about it show considerable more distress than animals who think they can do something to avoid the shocks. Executives who can not affect the stock price are like "executive monkeys," yoked to shocks they can not avoid.³⁹ Even for corporate employers with stock that is increasing overall, the volatility in the price is a noxious element. Executives would be better off with a steadier measure of their benefit, without regard to the level of their benefit.

Both executives and corporate employer would be better off without the volatility of stock prices, whatever the level of compensation. Executives would be better off with a steadier measure of their benefit.. Without the risk, executives would not need to demand from the employer the high discount rates associated with valuing stock. With lower discount rates, the corporation would get more present-value credit for its future

³⁹ See J.V. Brady, *Ulcers in Executive Monkeys*, 199 *Scientific American* 469 (1958) (finding that monkeys who had no control over electric shock showed far higher physiological sign of distress than monkeys who were trained to avoid the shock and thought they could avoid shock); Gerald K. Weiss, et. al., *The Effect of Two Different Types of Stress on Locus Coeruleus Alpha-2 Receptor Binding*, 33 *Brain Research Bull.* 219 (1994) (confirming the effect on mice).

cash. At very minimum, it would improve the efficiency of compensation if stock price volatility that is independent of the firm were filtered out of the compensation.⁴⁰ Even better discount rates would be achieved for the benefit of the corporate employer if the corporation gave out debt as compensation instead of stock. As noted, after tax discount rates have been trivial or slightly negative, on average over a long period of time.

Stock volatility does not alone explain the extraordinary discount rate on stock. In a recent review of the literature, Professors Jeremy Siegal and Richard Thaler show that the premium on stock is far too high to be explained by risk.⁴¹ To explain stock returns, an investor would have to be so afraid of fluctuations that she would be willing to pay an insurance premium of 49% of her wealth just to avoid a 50% chance of losing half her wealth.⁴² That is too high a risk aversion to be plausible. The puzzle is deepened, Siegel and Thaler explain, because over extended periods of time, debt becomes riskier than stock. With a twenty year time horizon or beyond, Siegel and

⁴⁰ [See Rick Antle & Abbie Smith, *An Empirical Investigation of the Relative Performance of Corporate Executives*, 24 J. of Accounting Research 1 \(1986\) \(arguing that taking systematic risk out of stock volatility reduces risk to executives\).](#)

⁴¹ *See, e.g.,* Jeremy J. Siegel & Richard H. Thaler, *Anomalies: The Equity Premium Puzzle*, J. Econ. Persp., Winter 1997, at 191; Narayana R. Kocherlakota, *The Equity Premium: It's Still a Puzzle*, 34 J. Econ. Literature 452 (1996); Andrew B. Abel, *The Equity Premium Puzzle*, Bus. Rev.: Fed. Res. Board of Philadelphia 3 (Sept./Oct. 1995). The seminal article on the subject is Rajnish Mehra & Edward C. Prescott, *The Equity Premium: A Puzzle*, 15 J. Monetary Econ. 145 (1985).

⁴² *See* Siegel & Thaler, *supra* note 41, at 192 (citing Mehra & Prescott, *supra* note 41).

Thaler note, debt value is more volatile than stock value.⁴³ Investors might also be afraid of catastrophic losses, Siegel and Thaler allow, except that it is debt rather than stock that has suffered the catastrophic losses in the past. Stock dropped precipitously, for example, in the great stock market crash of 1929, but the truly catastrophic events, such as the German hyperinflation of the 1920s or the Japanese hyperinflation after World War II wiped out the value of debt holdings altogether. Nothing in any stock market has been as bad.⁴⁴ Finally, Siegel and Thaler try to explain only the pretax disparities between returns on stock and on debt. Once tax is taken into effect, the disparities between the returns on stock and on debt are even more extreme⁴⁵ and hence even less likely to be explained in full by risk. Thus the extraordinary discount rate on stock needs to be explained by factors in addition to volatility.

2. Agency Explanation

Another factor that plausibly helps to explain the high discount rate on corporate stock is investor distrust of management. In theory, assets within a corporation are ultimately owned by shareholders, as if the assets were part of the shareholder's wealth or bank account balance and earning extra income for the shareholders. In the large

⁴³ See Siegel & Thaler, *supra* note 41, at 195. The volatility of a diversified stock portfolio decreases as time goes by because fluctuations in the value of the portfolio tend to offset each other. The volatility of debt, by contrast, increases over time because inflation affects the value of the debt.

⁴⁴ See *id.* at 194.

⁴⁵ See discussion in text accompanying *supra* note 18-22. See also Calvin H. Johnson, Equity Premium Puzzle, J. Econ. Persp. Fall 1997, at 233.

corporation, however, managers control the assets that shareholders purport to own, and shareholders can not assume that management will use the assets loyally to maximize shareholder value. The core shareholder remedy giving value to corporate stock is that distributions must be made pro rata to shares within the same class of stock. That remedy, however, does not prevent management from withholding distributions and using undistributed corporate wealth in ways in which the shareholders do not participate, or making corporate investments that do not maximize shareholder value.⁴⁶

Management self-interest gets in the way of loyalty to the shareholders. Management can and does pay itself excessive compensation.⁴⁷ Management can be, and

⁴⁶ The literature on conflict between management and shareholder interests of a corporation goes back to Adolf A. Berle, Jr. & Gardiner C. Means, *The Modern Corporation and Private Property* (1933) (stating that management tends to engage in activities that are harmful to shareholders, such as excessive retention of earnings and executive compensation) and Michael C. Jensen & William H. Meckling, *Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 *J. Fin. Econ.* 305 (1976).

⁴⁷ Executive compensation is too high, whether judged by historical standards or by the norms set by our trading partners and competitors. Graef Crystal points out, for instance, that American Chief Executive Officers are paid 120-150 times the average wages of workmen, whereas comparable Japanese CEOs are paid 16 times the wages of workmen. As late as 1974, the salary of American CEOs was only 35 times a workman's wage. In 1990, the average salary for the CEO of a United States public company was \$2.8 million and the average for a CEO of Japanese company was \$310,000 (about 1/9). *See* Graef S. Crystal, *In Search of Excess: The Overcompensation of American Executives* 23-28 (1991). *See also* Derek Bok, *The Cost of Talent: How Executives and Professionals are Paid and How It Affects America* 95, 297 (1993) (doubting that mind-numbing levels of

often is, overindulgent in paying for the privileges and perquisites of offices.⁴⁸

Management tends to get better compensation in larger corporations, so management tends to hold on to earnings to make the corporation larger, even when distribution of the earnings would improve shareholder wealth.⁴⁹ Management has a bias in favor of plowing earnings back into the industry that they are familiar with, even if that is not the best available investment, because that increases management competence and security.⁵⁰

Shareholder remedies are too weak to prevent managers from paying themselves too much or from making sub-optimal investments. In large corporations, there are too many shareholders with too little at stake to make it worth the considerable cost of testing

executive pay properly allocate talent in a manner that corresponds to America's needs and goals); George F. Will, *Ripping Off Capitalism*, Wash. Post, Sept. 1, 1991, at C7 (claiming that "ludicrous" CEO salaries are sometimes "looting"); Peter F. Drucker, *Is Executive Pay Excessive?*, Wall St. J., May 23, 1977, at A-20 (proposing to limit CEO pay to 20 times workman's pay).

⁴⁸ For a wonderful illustration, see Bernie Shellum, *Fruehauf Steers into Trouble: Management Cited in Decline of Truckmaker*, Chi. Trib., Feb. 27, 1989, at C1 *reprinted in* Ronald Gilson & Bernard Black, *The Law & Finance of Corp. Acquisitions* 363 (2d ed. 1995) (reporting that management destroyed historical industry leader with extravagant extras and golf).

⁴⁹ See, e.g., Joseph W. McGuire et al., *Executive Incomes, Sales and Profits*, 52 Am. Econ. Rev. 753, 760 (1962) (finding that executive compensation increases as gross receipts increase). See, e.g., Henry Hansmann, *The Ownership of Enterprise* 37 (1996) (arguing that management opportunism works most easily by excessive retention of earnings).

the quality of management. Shareholders, independently, do not know how to improve the business or investment judgment of their managers, nor do they know how to improve management performance. Even if they did know, their small stake would not make it worthwhile to undertake a campaign to replace management. In large corporations, shareholders are owners only in theory, and the management appoints the board of directors in reality. In the modern, publicly held corporation, shareholder votes and other remedies are not strong enough to ensure that managers are loyal to the shareholders.⁵¹

⁵⁰ See e.g., Andrei Shleifer & Robert W. Vishny, *Management Entrenchment: Firm Specific Investment*, 23 J. of Fin. Econ. 123 (1989) (arguing that management plausibly makes investments in area of their expertise to make themselves indispensable).

⁵¹ Some have argued that the hostile takeover is the best current remedy for managers who loot the corporation or make sub-optimal investments. An outside raider will be able to offer a price for shares higher than the current stock price because the raider is confident that it can improve the return on the target's assets just by replacing current management and making better use of corporate resources. See Henry Manne, *Mergers and the Market for Corporate Control*, 73 J. Pol. Econ. 110, 113 (1965); Ronald J. Gilson, *A Structural Approach to Corporations: The Case Against Defensive Tactics in Tender Offers*, 33 Stan. L. Rev. 819, 841 (1981). The takeover remedy may lead to local improvement, however, while making the global situation much worse. Takeovers make corporations larger, and larger corporations are even less responsive to shareholders than smaller ones. Managers of larger corporations have a more protected position from which to loot the corporation via excessive salaries and bad investments because it is harder to organize shareholders or take over the corporation the larger the corporation grows. Cf. Andrei Shleifer & Robert W. Vishny, *Value Maximization and the Acquisition Process*, 2 J. Econ. Persp. 7, 15 (1998) (arguing that takeover of other companies at inflated prices may be the greatest deviation by management from stockholder wealth maximization).

Shareholders respond to the weakness of their control over their agent managers by discounting the price they are willing to pay for their shares on the market. A discount rate for future cash, reflected in the extraordinary premium return on stock, is mathematically the same thing as a low price paid for the stock. Given the range of management's ability to loot the corporation or make bad investments, outside shareholders with no reliable information or control have to assume that the shares are "lemons."⁵² The low price that the market places on shares is the revenge that shareholders visit upon the corporation for the self-interested behavior of management.

The best evidence that the high discount rates on stock are caused, at least in part, by distrust of management is that management can increase the stock price by paying out more dividends, even though dividends are terrible tax planning. As a matter of tax alone, dividends hurt individual shareholders and should reduce the price of stock. Dividends are ordinary income, now taxed at rates as high as 44%.⁵³ Accumulated

⁵² George A. Akerlof, *The Market for "Lemons: Quality Uncertainty and the Market Mechanism*, 84 Q.J. Econ. 488 (1970) (arguing that markets are destroyed when buyers have inaccurate information because they have to underbid for assets on the assumption that the asset is as bad as it could be); Hayne E. Leland & David H. Pyle, *Informational Asymmetries, Financial Structure, and Financial Intermediation*, 32 J. Fin. 371 (1977) (arguing that information asymmetry will drive down the price of stock and prevent a corporation from using stock to fund projects with positive value); P.K. Chauncey & C.M. Lewis, *Earnings Management and Economic Information*, 1 J. Corp. Fin. 319 (1995) (applying the "lemons" argument to share valuation under bad accounting information).

⁵³ I.R.C. § 1(a)-(d) (1998) provides for tax rates on individuals of up to 39.6% while I.R.C. §§ 68, 151(d)(3) add complicated "phase out" surcharges that bring the marginal

earnings are capital gains to the shareholders, taxed only if there is a sale before death and even then, bearing a tax of from zero to 20%.⁵⁴ For much of the seventy-two-year Ibbotson sample, dividends have been taxed at 50% to 70%. Shifting from zero tax to 70% tax for corporate earnings by making a dividend should reduce the value of the earnings by over three times, to 30% of pre-dividend value.

Nonetheless the nontax value of dividends, in overcoming the agency problems with accumulated earnings, more than offsets the considerable tax effect. Dividends give the shareholders a bird in the hand. The earnings of the corporation are then no longer

tax rate up to 44%, for a family of husband and wife and two children. See Calvin H. Johnson, *Simplification: Replace the Personal Exemptions Phaseout Bubble*, 77 Tax Notes 1403, 1404 (1997). The largest phase-out tax, for personal exemptions, typically lasts from \$187,00 to \$309,000 of taxable income and tax rates drop down to 41% for incomes above the phase-out range. See Rev. Proc. 97-57, 1997-52 I.R.B. 20.

⁵⁴ See I.R.C. § 1(h)(1)(E), § 1222(3), (11) (1998) provide for a maximum tax of 20% on “capital gain.” “Capital gain” arises because the corporation accumulates its earnings, rather than distributing them as dividends, or because the future prospects of the corporation turn out to be rosier than expected. Capital gain accruing but not realized or taxed before the death of the owner of the shares is never taxed. See I.R.C. § 1014 (1998) (providing that the basis of property acquired from decedent is fair market value of death, rather than decedent's cost). The combination of low nominal rate, deferral of imposition of tax until sale and forgiveness of tax upon death typically reduce the expected tax rate on capital gains to under 10%. See Calvin H. Johnson, *The Undertaxation of Holding Gains*, 55 Tax Notes 807 (1992).

subject to management looting. Management usually claims that stock is undervalued -- much as grandparents claim the beauty and charm of their grandchildren --, but dividends are more credible to shareholders than managers' words. Dividends give shareholders control of the money and provide creditable evidence that the corporation is prospering. Reducing the distrust overcomes the tax effect.⁵⁵ Dividends reduce investor distrust by enough to overcome the tax effects, so that dividends do not reduce the value of the stock overall,⁵⁶ and can actually increase the value of the stock on the market!⁵⁷ The price

⁵⁵ See Morton H. Miller & Kevin Rock, "Dividend Policy under Asymmetric Information," 40 J. Fin. 1031 (1985)(arguing that corporations need to make dividends to signal success even if that means that they forego opportunities with positive value): Andrei Shleifer & Robert W. Vishny, "A Survey of Corporate Governance," 52 J. Fin. 737 (1997); Suddipto Bhattacharya, "Imperfect Information, Dividend Policy, and the 'Bird in the Hand' Fallacy," 10 Bill J. Econ. 259 (1979)(arguing that the tax cost to dividends make the signaling effect credible): Larry H. P. Lang & Robert H. Litzenger, "Dividend Announcements: Cash Flow Signaling vs. Free Cash Flow Hypothesis, 24 J. Fin. Econ. 181-191 (Sept-Nov. 1989).

⁵⁶ See Eugene F. Fama & Kenneth R. French, *Taxes, Finance Decisions, and Firm Value*, 53 J. Fin. 819 (1998) (showing the positive value that dividends serve by giving reliable information completely masks the tax effect, so that there is no hint of tax reducing value). Cf. Kathryn L. Dewenter & Vincent A. Warther, *Dividends, Asymmetric Information, and Agency Conflicts: Evidence from a Comparison of the Dividend Policies of Japanese and U.S. Firms*, 53 J. Fin. 879 (1998) (Japanese firms face less need to distribute dividends to provide creditable information to owners because Japanese firms have closer ties to creditors and owners).

⁵⁷ Paul Asquith & David W. Mullins, Jr., *The Impact of Initiating Dividend Payments on Shareholders' Wealth*, 56 J. Bus. 77 (1983) (showing that announcements of increased dividends increase stock price); Kose John & Joseph Williams, *Dividends*,

increase for corporate action that increases shareholder tax is the best evidence that distrust of management is causing the extraordinary premiums on stock.

Consistently, increasing debt increases the value of the firm, although for debt the cause is more ambiguous. Debt provides a creditable promise by management to pay interest as it is due, replacing the less creditable rules for distributions on stock. Debt forces management to distribute cash as the interest and principal of the debt become due. Further, debt provides a creditable signal that the firm is not worried about bankruptcy and is willing to go to the capital market. Increasing the ratio of debt to equity in the corporation increases the value of the corporation.⁵⁸

For debt, the increase in share value, caused by more debt, can not be unambiguously be attributed to an increase in management credibility because tax effects might also explain why increasing debt increases share value. For short-term

Dilution, and Taxes: A Signalling Equilibrium, 40 J. Fin. 1053 (1985) (showing that announcing a dividend will increase the value of stock). See also Tom Nohel & Vefa Tarhan, *Share Repurchases and Firm Performance: New Evidence on the Agency Costs of Free Cash Flow*, 49 J. Fin. Econ. 187 (1998) (showing that stock repurchases increase share value, not by signaling greater performance, but by disgorging cash the corporation can not profitably invest).

⁵⁸ See Michael C. Jensen, *Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers*, 76 Am. Econ. Rev. 323 (1986) (arguing that increasing leverage increases the value of stock by forcing management to disgorge cash to shareholders if they do not have corporate investments that improve net present value of the firm); James C. Van Horne, *Financial Management and Policy* 285 (10th ed. 1995) (stating that debt increases the value of the firm by signaling that managers do not fear bankruptcy); Stephen A.

investments, more debt might increase the value; considering only the tax, but for very long-term investments by shareholders, under current tax rates, less debt would increase the value of the firm.⁵⁹ Given that more debt might improve value for tax purposes, an increase in value of the firm when debt increases cannot be unambiguously attributed to a decrease in distrust of management. The data, however, is consistent with a theory that shareholder mistrust depresses the value of stock.

Ross, *The Determination of Financial Structure: The Incentive-Signaling Approach*, 8 Bell J. Econ. 23 (1977) (finding that value increases as debt increases).

⁵⁹ Assume that a corporation is considering whether to buy back \$1000 of stock in return for \$1000 of debt from a shareholder who has just purchased the stock who and can, therefore, sell it back without taxable gain. Assume also that the corporation will redeem the debt (or stock) in year \underline{n} . The shareholder should sell the stock, increasing the corporation's debt, if debt gives a higher terminal value at \underline{n} and should hold the stock if stock gives a higher terminal value at $n_{\underline{}}$.

The terminal position with debt is $\$1000 * [1 + I * (1 - T_s)]^n$ where T_s is the shareholder's tax rate, and I is the interest rate. The terminal position with stock, assuming accumulation of all earnings and a capital-gain redemption at the end, is $\$1000 * [1 + R * (1 - T_c)]^n * (1 - cg) + cg * \1000 , where R is the return to the corporation, T_c is the corporate tax rate, and cg is capital gains tax rate. The final " $cg * \$1000$ " term reflects the fact that the basis is subtracted to compute gain and is not subject to capital gains tax. See Myron S. Scholes & Mark A. Wolfson, *Taxes and Business Strategy: A Planning Approach* 57-58 (1992). With $I=R=10\%$, $cg=20\%$, $T_c=35\%$, $T_s=44\%$, the break-even \underline{n} is in the forty-fifth year, so with $n < 45$ years, debt is more valuable. If $n > 45$ years or if capital gain drops down to zero because of death, then stock is more valuable for the highest taxed individual.

The agency theory for the high discount rates on stock plausibly explains why stock does not reach equilibrium with debt and why issuers do not replace high-cost stock with other ways to pay compensation. Management could increase the value of shareholder interests by issuing debt or dividends, but dividends or debt would reduce the accumulated earnings that management controls. Management often wants to retain earnings to feather its own nest. Management also wants to pay for its perquisites and excessive compensation and make self-aggrandizing investments. Stock is a very expensive way for the issuer to pay cash and remains more expensive than debt, but management is disloyal to the issuer. To reach an equilibrium between debt and stock, however, management would have to work in favor of shareholder interests and against its own interests

The theory that stock is undervalued because of the market's distrust of management implies that management can make matters worse by reducing the quality of information given out to shareholders. Compensatory stock options given to management, for example, are not reported as part of the earnings reported to shareholders.⁶⁰ Shareholders get revenge for vague and misleading accounting by increasing the discount rate reflected in the price for the stock.

Obfuscation and dishonesty reduce the value of stock. Countries that do not provide outside investors with significant information do not have public markets from

⁶⁰ See ACCOUNTING FOR STOCK-BASED COMPENSATION, *supra* note 17.

which firms can raise money.⁶¹ The costs of lying or being vague to the market may be diffused to all firms, while the benefit of the lie may rebound to the scoundrel. Still, anything that decreases firm credibility increases the discounts reflected in their shares.

In sum, debt is cheaper for any level of benefit given to the employee. At least when after inflation and after tax discount rates are near zero, as they have been over long periods of time, the market will not discount the future dollar the employer pays by any material amount to determine present value. When the corporation gives cash by way of stock, by contrast, the market insists that the corporation pay out a higher real return rate because the expectation of cash is less reliable. The market value gives the corporate issuer too little credit for the real value of cash it will ultimately pay on stock.

III. STOCK COMPENSATION IS MORE EXPENSIVE THAN CASH DEFERRED COMPENSATION

Stock also competes with deferred compensation payable in cash as an alternative way to pay future cash. Deferred compensation is almost always the better alternative. Stock is often touted as a way to give management proper incentives, but the tout is inappropriate. There are distortions inherent in stock and stock options, which cash

⁶¹ See, Johnson, *Accounting in Favor of Investors*, *supra* note 17, at 638 (arguing that countries that do not provide outside investors with accurate information do not allow companies to raise significant capital from public markets): Shleifer & Vishny, *supra* note ~~65~~,51, at 5 (discussing countries where capital markets are ~~well~~-well-developed and poorly developed because of protection of outside investors). See also, Akerlof, *supra* note ~~62~~,52, at 488 (arguing that there is economic cost to dishonesty).

incentives plans can avoid with flexibility. Cash is also cheaper than stock, for the same amount of future cash, because deferred compensation can increase the issuer's credibility and decrease the issuer's discount rate. Finally, stock is often touted as a way to give employees low-tax capital gain, subject to a maximum of 20% tax, but there is a tax theorem, with a widely applicable range, that deferred cash compensation gives the employee the same after tax benefit as if there were zero tax on capital gain.

A. INCENTIVES

Stock compensation is said to be useful as an incentive device to align executive's self interest with the interests of the shareholders. If management has a meaningful percentage of total corporate equity, then, it is said, that will provide a "direct and powerful 'feedback effect'"⁶² Some say that with stock compensation, executive incentives and shareholder interests will converge.⁶³ Moreover, if top managers are willing to invest in the corporation or corporate projects with their own money, that sends a powerful signal to the market that the corporation is a good investment.⁶⁴

⁶² Michael C. Jensen & Kevin J. Murphy, *CEO Incentives—It's Not How Much You Pay, But How*, Harv. Bus. Rev., May-June 1990, at 138, 141.

⁶³ See Mark J. Loewenstein, *Reflections on Executive Compensation and a Modest Proposal for (Further) Reform*, 50 SMU L. Rev. 201, 206 (1996).

⁶⁴ See Leland & Pyle, *supra* note 52, at 372 (arguing that the best signaling by managers is their willingness to undertake investments in their firm's projects with their own money).

Stock compensation, however, turns out to be a very poor instrument to give management the proper incentives. The incentives are ineffective or go awry or are delivered inefficiently. Moreover, anything stock can do, cash can do better.

1. Drawbacks of Stock as an Incentive Device.

Stock can not ensure management loyalty to shareholders, first, because management can own only a fraction of the stock. Assume, for example, that a chief executive officer (“CEO”) owns 5% of the stock of a publicly owned corporation, which is a very high percentage under current norms.⁶⁵ The stock ownership would not be sufficient to prevent the CEO from being disloyal to shareholders when there is a direct conflict. Assume, for example, that the CEO is considering paying herself excessive compensation. The CEO gets 100% of the excessive compensation in her role as recipient of the compensation. She loses 5% of the overpayment in her role as shareholder of the corporate employer. For every dollar of excess compensation she pays herself, she is 95 cents ahead. There may be some fringe benefits and perquisites of office that give the CEO a value of less than 5 cents per dollar of corporate cost. For those, her ownership of stock would make her realize that such a perquisite was not a free lunch and she should stop it. The limitation, however, is not very important at the level

⁶⁵ Clifford Holderness, *Were the Good Old Days that Good? Changes in Managerial Stock Ownership Since the Great Depression*, NBER Working Papers No. 65501 at 9 (1998) (reporting that the top corporate officer holds an average of 1.25% of corporation's stock and that the percentage has been steady since data series began in 1935).

of ownership that managers of public corporations have. If, for instance, there is a perquisite of office that gave six cents of value per dollar of corporate cost, she would be better off with the perquisite than without it, even given the damage to her share value. A manager of a publicly held corporation cannot own 100% of the shares, by definition, and so her shareholdings cannot prevent self-interested behavior that hurts the value of those shareholdings. It is false security to rely on shareholdings to control management misbehavior.

Large stock holdings can distort incentives, for instance, by making management too conservative. Rational shareholders usually want management to ignore risks to the business that the shareholders can avoid by diversification.⁶⁶ Rational investors diversify their portfolios because many of the risks of any particular stock are firm specific and offset by fluctuations in other investments that move, as sine and co-sine curves do, so as to cancel out the risks. A shareholder can blithely disregard diversifiable risks. For example, if only one of three companies will get a big contract, an investor can avoid bearing the damage from loss of the contract by owning stock of all three companies. Large block holdings by management, however, are too big for the firm-specific losses to be diversified away. Management will then avoid the firm-specific risks that would have been avoided by diversification even if they have an expected positive value because the loss hurts them too much if it happens. Management already tends to be too conservative because they have their livelihood invested in the firm and cannot easily

⁶⁶ See, e.g., Henry T.C. Hu, *Risk, Time, and Fiduciary Principles in Corporate Investment*, 38 UCLA L. Rev. 277, 319-320 (1990); Bernard S. Black, *Bidder Overpayment in Takeovers*, 41 Stan. L. Rev. 597, 624 (1989).

move to another company. Large stock holdings push management to be even more conservative.⁶⁷

Stock performance is also an inferior incentive for good performance by an executive because stock price has so much volatility that an executive cannot influence. It has been estimated, as noted, that 80% of the volatility of stock prices arise from forces that are not individual to the firm. Volatility from factors outside of the firm add random shocks to compensation, punishing the just and rewarding the incompetent. With stock-based compensation, incompetent or disloyal managers will profit from a rise in stock price that he or she did not affect. Capable and loyal managers will be hurt if the stock price declines for reasons that have nothing to do with their performance.

2. Stock Options Distortions

Giving stock options to management is one of the most popular forms of stock compensation because the employer's cost of compensation does not have to be reported on public financial statements.⁶⁸ Stock options, however, create truly bizarre incentives for management to squelch dividends and seek out risk, even though it damages shareholder wealth. Stock options give management an incentive to accumulate earnings rather than distribute them because accumulated earnings increase the value of stock options by increasing the value of the stock and the bargain that the option holder will achieve. Stock options do not, however, participate in dividends. Stock options encourage management to go into very high risk investments that have negative expected value because the holder of an option participates in the gains in value, but not the losses.

⁶⁷ See Hu, *supra* note 66, at 327-329.

Assume, for example, a model with the following facts: The chief executive officer and top management of Widget Corp. have options to purchase 5% of Widget stock at the current fair market value one year hence. Widget's net assets are worth \$100 million and Widget has no debt. Widget Corp. has an opportunity to go into a start-up business by investing its \$100 million worth of assets. The new opportunity has a 10% chance of being worth \$900 million after one year and a 90% chance of being worth nothing. Generally, available no-risk investments give a return of 6%. Under these circumstances, a rational system would tell management not to undertake the new business opportunity. The opportunity has a negative expected value because the 10% chance of making \$900 is worth \$90 million and \$90 million discounted by one year at 6% is \$84.9 million. Investing \$100 million for an expected return of \$84.9 million is a losing strategy from the shareholder point of view.

Because management holds stock option, however, the high-risk, 90%-failure, negative-expected-value start-up business opportunity is rational from the managers' private point of view, even though it hurts shareholders. Managers' options do not participate in the shareholder's loss in the 90% of the time that the start-up fails. If the start-up fails, they just fail to exercise their option so that they have neither gain nor loss. In the 10% of the cases in which the start-up succeeds, however, an option for all of the stock (exercisable at current fair market value) will be worth

$$[(\$900 \text{ million} - \$100 \text{ million.}) * 10\%] / (1+6\%) = \$75.47 \text{ million.}$$

⁶⁸ See Accounting for Stock-Based Compensation, *supra* note 17.

Management in the model has the option of acquiring only 5% of the corporation. Their options will thus be worth only 5% of the \$75.47 million. Still, management gets positive value from its stock options if the investment is made, making the risky start-up investment beneficial to management considering only their own selfish position.

Now assume, as a second case, that the corporation has earnings of \$10 million, which can either be distributed as a dividend or invested internally in a project worth only \$8.49 million. With loyalty to the shareholders, management would distribute the \$10 million now, rather than the \$8.49 million when the project is complete. Management with stock option, however, will get no value reflected in their option if the \$10 million is distributed immediately. If they follow their self interest, they will accumulate the money in derogation of the shareholder's interests.

Stock option plans are also usually too rigid even to be adapted to measures of executive performance. Stock option plans that rely on avoiding treating the option as a cost in published financial statements, for instance, must fix the exercise price of the option and the number of shares at the time the option rights are granted.⁶⁹ If either exercise price or shares subject to the option are changed, that creates a new measurement date. If the stock has appreciated since the option was granted, that means that the employer will not have a zero reported cost for the compensatory option, but rather a cost measured by the difference between the value of the stock and exercise price as of the new measurement date. The employer can then no longer rely on the absence of a bargain on the option using the fair market value of the stock when the option was

originally granted. In order to avoid reports to shareholders of the compensation cost of a stock option, the corporation must bind itself in ways that can get in the way of optimal compensation design.

In the abstract, it might be possible to use stock and stock options as part of a mix to create incentives for management that perfectly offset the other biases of management.⁷⁰ Cash plans, however, give the employer the flexibility that a fixed exercise price and fixed amount of stock do not have, making it easier to create the optimal incentives.

3. Incentives with Deferred Payment of Cash.

Any incentives for the employee that stock compensation can provide can be duplicated and improved with a cash plan. If employees are paid cash under a deferred compensation agreement, the contingencies for paying cash can be set with flexibility and intelligence. A cash deferred compensation plan could mimic the rewards of stock compensation *if* that were helpful. "Phantom Stock" and "Stock Appreciation Rights," for instance, are plans that pay the employee cash for the increase in the price of the employer's stock as if the employee owned the shares for some period of time.⁷¹ The

⁶⁹ See Accounting for Stock-Based Compensation, *supra* note 17, ¶ 5 (allowing continuation of Accounting Principles Board No. 25, ¶ 10b).

⁷⁰ See Hu, *supra* note 66, at 325 n.126.

⁷¹ See, e.g., Phantom Stock Not a Second Class of Stock, 78 Tax Notes 431 (1998) (describing I.R.S. Private Letter Ruling 9803023 as saying that phantom stock is not included in employee's income until paid); James Hamill, *Nonqualified Stock Plans Can Be Adapted to Meet the Needs of Privately Held Companies*, 82 J. Tax. 100 (1995). 'Stock Appreciation Rights' tend to give the employee only the value of the increase in

employee is given units of his employer's stock, purely on paper, and gets paid the appreciation in value of those shares in cash, without ever becoming a real shareholder or having to come up with the capital for the initial purchase price. *If* measuring appreciation by stock value were a virtue, then a cash plan could capture the virtue. Cash distributed from Phantom Stock plans, moreover, has the considerable advantage that it can be deducted for tax purposes; distributions of the same amount of cash to the employee on real stock are dividends may not be deducted.

Customizing a cash deferred compensation plan can cure some of the faults of stock compensation even if stock performance is the core underlying idea. Phantom Stock, which pays management when dividends are paid, is better than Stock Appreciation Rights in reducing management's incentive to retain corporate earnings. A cash deferred compensation plan can screen out some of the factors over which the employee has no possible control. The contingency for payout could, for example, have subtracted from it a general index of all stocks on the stock market so that economic conditions affecting the whole stock market would not affect compensation.⁷² For that matter, once the parties understand the flexibility, employees might be paid upon contingencies that are more responsive than overall stock prices to employee production or merit. A division chief, for example, might be rewarded under an internal control

price of shares. 'Phantom Stock' tends to give the employee cash as well when dividends are paid on the real stock. *Id.*

⁷² Angel & McGabe, *supra* note 84, 38, at 19 (arguing that general market volatility needs to be filtered out of executive compensation measures).

system that better describes the performance of the division than do company-wide earnings or overall corporate stock performance.

One of the benefits of stock for the employee is that the employer is pre-committed to giving the employee the future gain on the stock and future cash flows on the stock. With discretionary bonuses awarded after employee performance, the employee properly fears that the employer can behave tactically and pay the employee less than she was expecting. A pre-commitment would assure the employee that effective work will be rewarded. Deferred cash compensation, however, can be pre-committed to the employee with a clear, objective set of conditions for payout. Anything that stock can do, cash can do better.

Cash compensation, moreover, forces the employee to evaluate the cost of the compensation. Plans that pay out cash at the end may not be treated as cost-free for financial accounting purposes, even if they mimic stock option plans. Even before payment, compensation is accrued as an expense as it is earned by the employee.⁷³ If the employer budgets internally from accounting books that include the compensation, the cost to the employer will be understood –perhaps the move to cash plans will force the employer to understand the cost of the compensation for the first time. Once understood, cost can be controlled and shaped to do the most good per dollar spent. There seems to

⁷³ See e.g. Accounting for Stock-Based Compensation, *supra* note 17, ¶ 25 (stating that corporations accrue cost of a Phantom Stock plan according to fair market value of stock at end of accounting period).

be a fallacy that stock is free to the employer—that the employer prints its own stock.⁷⁴

Everyone, however, understands the cost of real cash. Understanding the real cost of compensation is the first step to getting the cost under control.

B. REDUCING THE DISCOUNT RATE.

Deferred compensation should be cheaper than stock for giving any benefit to an employee, because deferred compensation can drop the discount rate at which the employee evaluates the value of the future cash without dropping the discount rate which the employer uses to evaluate its cost. For a corporation that can make good profits from its business activities, there is an asymmetry of discount rates available under which the employee values the future cash highly, in present value terms, whereas the employer finds it very cheap to fund, in present value terms.

1. The Value of an Enforceable Promise.

Switching from stock compensation to deferred cash will make compensation more efficient by reducing the discount rate recipients use to discount cash that will be paid in the future. Deferred compensation plans represent a promise to pay the employee, which the employee may enforce in a court of law. The promise of cash is more credible to the employee. Stock entails no promise to pay at any time, and the shareholder may not force payments or prevent self-interested management behavior as to accumulated earnings. Deferred compensation may be payable under a formula that has unknowns in it, such as stock price or earnings of the division, but the formula at least gives the promise of a payout, determinable from objective criteria at a time certain.

⁷⁴ See, e.g. [text accompanying *supra* note 17.](#)

Unknowns in the formula, however, will probably prevent the discount rate on deferred compensation from dropping into the range of that on debt. Employees, for instance, will probably never evaluate deferred compensation with a negative after tax discount rate that has applied to debt. Deferred compensation, however, will reduce the discount rate used in the calculation of present value, by cutting down on management opportunities for self-serving future behavior at the expense of the recipient. Deferred compensation has every promise of reducing the distrust about future management which creates such extraordinary discount rates with respect to stock.

Reducing the discount applied to future cash by the employee would have no effect on the return on investments that the employer uses to fund future cash and to compute its current cost. A corporate employer with an extraordinary 12% or 28% after-tax return rate on its investments has committed a fraction of that return by giving out stock. It can use the same extraordinary rate on investments to fund future deferred compensation, without necessarily committing cash payments that increase at 12% or 28% per year over time. Switching from stock to cash should increase the value of the compensation to the employees without increasing the cost to the employer.

2. Rabbi Trusts

It is also possible to increase credibility of future management even more by setting up what is known as a "rabbi trust." A rabbi trust is an irrevocable commitment of funds for the benefit of the employee. The employer can not reach the trust funds. The trust remains subject to the claims of creditors of the employer and the employee has no preferred claim in bankruptcy. The Internal Revenue Service will rule that the

employee has no taxable compensation until the cash is paid out.⁷⁵ A major cause of the extraordinary discount rates on stock appear to be distrust of opportunistic behavior by management in the future. The rabbi trust cannot protect the employee from managers who drive the employer into bankruptcy, but, if the employer does not go into bankruptcy, the rabbi trust can ensure that there is a fund of money to pay the employee under the deferred compensation plan. A major cause of the extraordinary discount rate on stock is volatility of the price of stock. A rabbi trust can invest in low volatility or high volatility investments with unfettered choice.

Putting funds into a rabbi trust, however, would plausibly have a detrimental effect on the employer-side discount rate. Funding means that the trust would have to invest in publicly available investments and publicly available investments can be expected to give only an average rate of return for the risk. Extraordinary returns are available to any corporate employer only because capital is combined with entrepreneurial skill or position. If funds are put into a rabbi trust by a corporation that can make better than publicly available returns, the funds should plausibly be re-lent out to the corporation for use in the business. A loan between a rabbi trust and the employer

⁷⁵ See Rev. Proc. 92-64, 1992-2 C.B. 422 (explaining that the I.R.S. will issue a ruling that an employee does not have taxable income from a rabbi trust, provided the trust is subject to claims of creditors and that it gives the employee no priority interest); Priv. Ltr. Rul. 8113107 (Dec. 31, 1980) (holding that a synagogue could set up a trust for its rabbi without the rabbi being taxed).

is invisible for tax purposes,⁷⁶ but it effects a real transfer of cash from outside the irrevocable trust. That destroys part of the advantage of a rabbi trust, which is to have a safe cash fund available to pay the future compensation. Perhaps there is a net value in a rabbi trust, however, in reducing the employee discount rate without symmetrically reducing the employer discount rate by as much, but there will undoubtedly be trade-offs between the two discount rates.

In any event, deferred compensation offers a very good chance of correcting the major drawbacks of stock compensation. Stock plausibly has a higher discount rate on the holders' side than on the issuers' side. Deferred compensation offers a good chance of having a lower discount rate in the employee's evaluation of present value, while keeping a higher discount rate for the employer.

C. TAXATION OF STOCK AND DEFERRED COMPENSATION.⁷⁷

Stock is often touted as a means by which to deliver an incentive to employers by giving them capital gain.⁷⁸ Once the employee becomes the owner of stock, for example,

⁷⁶ The trust will be taxed as a grantor trust within I.R.C. § 461, a deduction paid by a grantor trust shall be treated as paid by the grantor itself, i.e., to itself. See Priv. Ltr. Rul. 8113107 (Dec. 31, 1980); Treas. Reg. § 1.461-2(c) (1960).

⁷⁷ This section relies on Calvin H. Johnson, *Stock Compensation Under Section 83: A Reassessment*, S. CAL. TAX INST. ¶801.1-801.2 (1980). Model 2, herein, however is a reworking of ¶801.2 relying on the work of Alvin C. Warren, Jr., *The Timing of Taxes*, 39 NATIONAL TAX J. 499,501 (1986) and Daniel I. Halperin, *Interest in Disguise: Taxing the 'Time Value of Money,'* 95 YALE J. J. 506 (1986).

the employer may redeem it back at fair market value and give the employee capital gain.⁷⁹ Capital gain on stock held for more than a year is subject to tax of no more than 20%.⁸⁰

Capital gains plans, however, require that the employer give up the deduction of the gain. Ordinarily, the employer deduction for the gain makes deferred compensation more valuable. Within a broad range, deferred compensation deductible by the employer will deliver a larger amount of after tax benefit to the employee than will transactions that will give the employee capital gain.

This section develops two algebraic models of employee capital gain and then discusses which is applicable under various circumstances and what the models say about the advantages of cash plans versus stock plans as a way to pay future cash.

1. Model 1: Appreciation Only

Ordinarily, an employer deduction for appreciation on stock is more important than qualifying the appreciation as capital gain. Assume that a corporation sells \$1000 worth of its stock to a 44% tax rate employee for its fair market value. The stock

⁷⁸ See, e.g., Senate Finance Committee, Revenue Act of 1964, S. Rep. No. 830, 88th Cong., 2d Sess. 88 (1964) (explaining that the Congress continued incentive stock option provisions giving capital gain to employees because incentives would be good for specific companies and also for the economy as a whole).

⁷⁹ See I.R.C. § 302(b) (1998) (providing that a redemption that a complete termination of shareholder's interest or that reduces shareholder's fractional ownership by 20% will qualify as in "sale or exchange").

⁸⁰ See I.R.C. §§ 1(h)(1)(E), 1222(3), (11) (1998).

appreciates for 10 years to be worth \$11,000.⁸¹ The corporation redeems the stock, giving the employee a net capital gain of \$10,000.⁸² Naïvely, the employee is delighted to have that gain taxed at capital gain rates. Had the gain been treated as compensation, the employee would have paid tax of 44% or \$4400 and been left with only \$6400 after tax profit. As capital gain, the tax is 20%, and the employee's after-tax profit is \$8000.

The naïve capital-gain position misses the benefit of the employer deduction that would have been available. An employer willing to devote \$10,000 net cash to the employee at the point of redemption of stock without a deduction should be willing to devote a larger amount to the employee if a deduction is available. A corporation in a 35% tax bracket can "gross up" the amount paid, reflecting the compensation deduction, to a larger pre-tax amount, at the same after-tax cost. The employer could pay $\$10,000/(1-35\%)$ or \$15,385 to the employee. The deduction of \$15,385 would have saved $35\% * \$15,385$ or \$5,385, so that after tax, the cost would drop back down to the same \$10,000. The employee, however, gets \$15,385 in pre-tax cash. The employee tax

⁸¹ The appreciation is 27% per year because $\$1000 * (1+27\%)^{10} = \$11,000$.

⁸² To qualify as capital gain, the redemption must completely terminate the employee's shareholder interest or reduce the employee-shareholder's fractional interest by more than 20% and leave her with less than 50% of the corporation's shares. *See* I.R.C. § 302(b)(2), (3) (1998). The 20% reduction test would always be easier to meet, except that the complete termination test allows the employee to avoid constructive ownership of stock of family members in applying the 20% test, under certain circumstances. *See* I.R.C. § 302(c) (1998).

is $44\% \times \$15,385$ or $\$6,769$. The employee's after-tax benefit is $\$15,385 - \$6,769$ or $\$8,615$, that is, better than the $\$8000$ from the capital gain alternative.

A single example can be generalized by algebra. Algebraically, the employee's after-tax position from the capital gain plan and deductible compensation plan can be compared as follows:

$$\$10,000 [(1-T_x) / (1-T_c)] \text{ versus } \$10,000 (1-c_g)$$

where T_x represents the executive's tax rate, T_c represents the corporate employer's tax rate and c_g represents the capital gain tax.

At the values $T_x = 44\%$, $T_c = 35\%$, $c_g = 20\%$, comparison (1) becomes:

(1A) $\$10,000 [(1-44\%) / (1-35\%)]$ versus $\$10,000 (1-20\%)$ or

(1B) $\$10,000 [86.15\%]$ versus $\$10,000 (80\%)$ or

(1C) $\$8,615$ versus $\$8000$.

The model in comparison (1) does not mean that capital gain is never the better plan for the employee. To take a simple example, assume a corporation with tax shelters and net operating losses extending so far into the foreseeable future that the value of the compensation deduction is zero or trivial. Without value to the compensation deduction, the comparison (1) breaks down to a simple statement that the employee is better off with capital gains rates (c_g) than with ordinary tax rates (T_x).

A more general rule can be derived from comparison (1). The $\$10,000$ drops out of both sides of the comparison (1) leaving the rule that structuring the employee's gain as deductible compensation rather than capital gain will allow the employee to be better off after tax, whenever $(1-T_x) / (1-T_c) > (1-c_g)$. Stating the same relationship in a different way, the parties would be better off going for ordinary compensation rather than

capital gain, whenever the corporation's tax rate is high enough to satisfy the following inequality:

$$(1D) \text{ Is } T_c > 1 - (1 - T_x) / (1 - c_g)?$$

For an employee in the highest tax bracket, the right side of the inequality 1D is $1 - (1 - 44\%) / (1 - 20\%)$ or $1 - (56\% / 80\%)$ or 14%: corporations with an effective tax rate of more than 14% when the stock is to be redeemed should abandon any capital gain plans for employees and switch to deferred compensation instead.

Model 2, as discussed next, implies that deferred compensation is better for the employee than capital gains plans without regard to the employer's tax rate.

2. Model 2: Nullification of Capital Gain

When capital arises on property given to the employee as compensation, capital gains plans are always worse than comparable cash plans that give the employer a deduction, at least within the scope of the assumption that tax rates remain constant. Deferring the employee's deduction until the cash is paid, gives the employee a benefit that is as good as not paying any tax on the subsequent capital gain. The employee should prefer the effectively-no-capital-gain tax position from deferred compensation to a plan that requires the employee to pay some positive capital gain.

Assume, for instance, that the \$1000 worth of stock was not sold to the employee (as in model 1), but rather transferred to the employee as compensation. Assume now that that the stock grows by growth rate g over period n by ten times so that the stock is

worth \$10,000⁸³ and the employer redeems the stock back for its \$10,000 fair market value. In absence of tax, the employee would get \$10,000 in cash at the end of the period.

Stock compensation is deductible to the employee when paid, so the employer could gross up the compensation to an amount larger than the \$1000 pre-tax value when the stock was initially transferred, with the same after tax cost. Assume the employer grosses up the compensation with more stock to $\$1000/(1-T_c)$ —treating stock worth \$1 and real cash of \$1 as equivalents. The executive would pay tax of T_x on the grossed-up compensation. If we assume executive tax is paid by selling the compensatory stock itself, the employee has $\$1000 * [(1-T_x)/(1-T_c)]$ of the investment remaining after tax. Assume now that the stock grows at rate g to $(1+g)^n$ or ten times the original value. The employer could redeem the stock for the appreciated fair market value, giving the employee capital gain taxable at lower capital gain rate cg . Taxable capital gain is computed, by subtracting the employee's basis from the amount realized. Algebraically, the employee's after-tax terminal position is:

$$(2) \quad \$1000 * [(1-T_x)/(1-T_c)] * (1+g)^n - cg * \{ \$1000 * [(1-T_x)/(1-T_c)] * (1+g)^n - \$1000 * [(1-T_x)/(1-T_c)] \}$$

⁸³ m What rate of growth g the \$10,000 represents depends upon what period n is allowed for growth. At $n = 10$, for example, the growth is 26% per year. The model does not fix the values for n or i so long as $\$1(1+i)^n = \10 .

The highlighted terms in Expression (2) represent capital gain tax on gain from the redemption of the stock. With values of $T_x = 44\%$, $T_c = 35\%$, $(1+i)^n = 10$, and $cg = 20\%$, expression (2) becomes:

$$(2B) \ \$1000 * [56\%/65\%] * 10 - 20\% \{ \$1000 * [56\%/65\%] * 9 \} =$$

$$(2C) \ \$8615 - 20\% \{ \$862 * 9 \} = \$8615 - \$1551 = \$7,064.$$

The capital gains tax highlighted in (2B-2C) reduced the employees after tax benefit by \$1551.

The entire impact of capital gains tax on the employee could have been eliminated if the plan had only been a plan for deferred payment. In absence of tax, the transaction is \$1000 initial value of stock redeemed back for \$10,000 cash. If there is no initial transfer of stock, then there would be no deduction for income that would change the initial \$1000. When the employer pays \$10,000 in cash, however, there is both a deduction and income. A 35%-tax-rate employer willing to pay \$10,000 in absence of tax upon redemption, should be willing to gross up the payment by $1/(1-T_c)$ or $\$10,000/(1-35\%)$ to \$15,384. The executive receiving the \$15,384 would pay tax at 44% leaving $\$15,384 * (1-T_x)$ or \$8,615. That after tax \$8,615 is exactly the same as (2C) as if there were no capital gains tax! Capital gain tax has been effectively nullified by delaying the compensation event until the employee needs the cash.

Algebraically, the nullification of the capital gain tax, by shift to cash compensation, can be expressed as:

$$(3A) \ \$1000 * (1+g)^n * [(1-T_x)/(1-T_c)]$$

The terms of Expression (3A) can be rearranged:

$$\$1000 * [(1-T_x)/(1-T_c)] * (1+g)^n$$

Expression (3), describing the after tax position with deferred compensation, is exactly like Expression (2), except that there is no capital gain. Expression (3) is equivalent to Expression (2) without a capital gain tax, regardless of the values of ordinary income tax, employer tax, growth rate or time, or capital gains rates, so long as the values for T_x and T_c remain the same. Expression (3), showing nullification of capital gain, is a variation of the Cary Brown thesis, which says that deferring tax on capital effectively lifts the tax on the subsequent income.⁸⁴ Expression (3) applies not just if the employee is paid in stock, but also if the employee is paid in cash and buys stock. Employee capital gain is accordingly, not good tax planning and employee capital gain is no justification for stock over deferred compensation.

Expression (3) does assume that the corporate and individual tax rates are the same between the period when stock is awarded and the period when cash is paid. Sometimes the executives tax rate will be low when stock is awarded or the corporation's tax rate will be high. Under those circumstances, Expression (2) capital gain might be better than Expression (3) deferred compensation. The usual start-up company, however,

⁸⁴⁸⁴ See, e.g., E. Cary Brown, *Business-Income Taxation and Investment Incentives*, in *Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen* 300 (1948); Dep't of the Treasury, *Blueprints for Basic Tax Reform* 123-24 (1977); Stanley S. Surrey, *The Tax Reform Act of 1969 -Tax Deferral and Tax Shelters*, 12 B.C. Int'l & Comp. L. Rev. 307 (1971).

goes from zero tax, when it has high development costs,⁸⁵ into a higher tax once the products are successful. In that case, the deduction for deferred compensation will be much more valuable. With an increase in the employer rate, the employee can be even better off with deferred compensation than getting zero tax rate on capital gain.

An employee can avoid capital gain tax included in the Expression (2) description by dying. Section 1014 of the Code allows an heir to treat her cost of the stock as if she had purchased the stock at its fair market value at the death of the decedent, so that there is no capital gain tax on the gain built into the stock prior to death.⁸⁶ If there is no capital gain tax in Expression (2), then Expression (3) for deferred compensation, effectively eliminating capital gain tax, is not an advantage. Still, Expression (3) does have the considerable advantage to the executive that deferred compensation gives the benefit of no capital gain tax without the executive having to die.

Under Model 1, deferred compensation is better than capital gain plans only if $Tc > (1-Tx)/(1-cg)$, whereas Model 2 shows that deferred compensation is better than employee capital gain without regard to values for Tc , Tx and cg . Looking only at capital gain appreciation, Expression (3) and Model 2 are more comprehensive descriptions of stock and deferred compensation than Model 1, because Model 2 shows the taxation of the capital that causes the capital gain appreciation. It is thus tempting to say that Model 2 is always superior to Model 1. As a matter of positive law, however, employees can

⁸⁵ I.R.C. § 174 (1998) allows the deduction of research or experimental costs when incurred.

⁸⁶ See I.R.C. § 1014 (1998).

get away with eligibility for capital gain, without having to pay tax on the capital that is appreciating. Employees can, for instance, be given an option to buy stock, and hence the appreciation on the stock long before they put any capital in. The gain will nonetheless qualify as capital gain to the employee.⁸⁷ Model 2 applies to what might be called "natural" or "normal" capital gain arising because of the appreciation of employee post-tax investment. Model 1, then, applies to employee capital gain that might be called abnormal or artificial employee capital gain. Model 1, however, says that even if the capital gain is forced or artificial for the employee, employee capital gain is not usually optimal tax planning.

IV. A NOTE ON COMPARING STOCK COMPENSATION WITH CURRENT CASH

The primary focus of this article has been on comparing stock compensation with other ways to pay future cash. It has been assumed, as a jurisdictional fact, that current cash is not available to pay employees. Many start-up companies are so cash starved that they at least have the perception that use of cash is not a viable alternative. Nonetheless, some note should be taken of when stock compensation is superior to the use of current cash.

A corporation that makes an extraordinary return on invested cash might well be tempted to conserve its cash and use stock to pay employees instead. If internal investment generates a 12% compound return after inflation and taxes, then \$1000 will grow to \$3.4 million, in constant-value terms, after seventy-two years.⁸⁸ The corporation

⁸⁷ See I.R.C. §§ 421, 422 (1998).

⁸⁸ $\$1000 * (1+12\%)^{72} = \3.5 million.

might well believe it will make \$3.4 million at the end of the stock redemption period by using a \$1000 stock bonus instead of \$1000 cash. The difficulty with the argument is that by giving the employee the \$1000 stock, the corporation has committed to the employee all of the \$3.4 million cash that the corporation will make by using the \$1000 cash. The historical shareholders get no advantage from using stock instead of cash because stock gives to the employee the after-tax cash that the corporation makes by withholding the immediate cash bonus.

There is a range in which the historical shareholders can profit by a switch from current cash to stock compensation. A corporation that beats its own track record, reflected in its stock price, on new investments can increase the average return on stock. If the corporation uses the discount rate on its own stock as a base line from which to judge its own investments, then it will go into those investments that improve its net worth overall. The return made on new high-rate-of-return investments will then be shared between historical shareholders and the new shareholder-employees. Stated another way, a corporation that can get a higher return on its investments than is reflected in its own stock price will be able to fund the future cash distribution on its stock at a present value cost of less than the price of the stock. By contrast, if the return on the new investment is less than the return on its old investments, the corporation will be sharing more with the new shareholder-employees more than it gets from the investment of the \$1000 withheld from the employee and replaced with stock. The standard for choice of stock versus current cash compensation is just a variation of the more general standard, first expressed by Irving Fisher, that a corporation should use the discount rate on its own

stock as a base line in evaluating its investment opportunities.⁸⁹ A corporation should distribute cash as dividends if cannot find investments that give a return higher than the return reflected in the price of its own stock and so similarly a corporation should use cash instead of its own stock if it cannot find investments that give a return higher than the return reflected by its own stock.

A corporation with access to high return investments should also be switching from current cash to future cash to pay employees, to the extent that employees will tolerate it. When the corporation switches to future cash, it should be using the optimal format to pay the future cash and stock is the least optimal way to pay future cash. The conclusion of this article is that the after-tax discount rates used by the market and executive to evaluate debt or deferred compensation are lower than the discount rate it faces with stock. That means that the corporation should be using the lower discount rates from debt or deferred compensation as a standard to determine whether to pay current or deferred cash. If a corporation truly faces a negative after-tax and after-inflation interest rate on its debt, for example, as has occurred on average over long periods of time, then the corporation needs to defer all cash compensation to the future because the deferral makes the compensation cheaper. So long as the employer can make some profitable use of its investable cash, compensation through negative-interest debt

⁸⁹ See e.g., Copeland & Weston, *supra* note 12, at 18 (explaining the Irving Fisher criterion that corporations need to distribute earnings if projects available to it give a return less than the rate of return on the corporation's own stock).

will leave the corporation ahead in net worth, judging from the negative interest rates available to corporations on average over the long term.

A corporation with attractive investments and an optimistic future can also use deferred compensation to take advantage of an asymmetry of discount rates that runs in favor of the corporation. Assume, for instance, that a corporation makes 12% after tax and after inflation, but general interest rates on secure promises are only 4% after tax. The corporation rewards an executive with \$1 million cash bonus, payable in ten years. To the corporate employer, the \$1 million payable to the executive has a present value cost of only \$322,000 given the 12 percent discount rate.⁹⁰ If the executive views the future cash with only a 4% after-tax discount rate, however, the \$1 million cash bonus will have a present value of \$675,000 at the 4% discount rate.⁹¹ The corporation is more than doubling the bang for its buck by taking advantage of the difference between its discount rate used to fund the bonus, and the lower discount rate the employee has access to. The difficulty that makes stock compensation so expensive is an asymmetry caused by tax and asymmetrical information that causes the employee to discount the cash at a much higher rate than the rate at which the corporation bears the cost of the cash. Once that diagnosis is understood, then the corporation can search for opportunities to reverse the asymmetry and pay by a method that is cheap to the corporation but valuable to the employee.

V. CONCLUSION

⁹⁰ $\$1,000,000/(1+12\%)^{10}=\$321,973$.

⁹¹ $\$1,000,000/(1+4\%)^{10}=\$675,564$.

Stock compensation is an expensive means to compensate employees. Employer debt is cheaper because the discount rate used to evaluate the present value of the future cash is lower on debt than on stock, and because interest on debt is deductible. Deferred compensation is better than stock because the discount rate is lower and because deferred compensation is a more flexible way to give managers appropriate incentives. Deferred compensation, moreover, ordinarily gives the employee better benefits after tax than does employee capital gain.