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The Original Management Incentive Schemes

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During the 1990s, the structure of pay for top corporate executives shifted markedly as the use of stock options greatly expanded. For firms in the Standard and Poor's 500, the value of stock options granted rose from \$11 billion in 1992 (an average of \$22 million per firm) to \$119 billion in 2000 (an average of \$238 million per firm) (Hall and Murphy, 2003). The common argument in favor of this increase was that it was helping to align the incentives of corporate managers with those of shareholders. But by the early 2000s, as the dot-com boom ended and the Nasdaq stock index melted down, these modern executive incentive schemes were being sharply questioned on many grounds (in this journal, for example, by Bebchuk and Fried, 2003; Hall and Murphy, 2003): for encouraging excessive risk-taking and a short-run orientation, for being an overly costly and inefficient method of providing incentives and even for tempting managers of firms like Enron, WorldCom and Tyco to commit fraud in order to ensure a high stock price at the time of exercise.

This article examines the original incentive schemes that linked executive compensation to stock prices, which were developed by Du Pont and General Motors in the 1920s. As two of the first firms to adopt the multidivisional organizational form, which delegated substantial authority to a significant number of executives, Du Pont and General Motors were among the first to confront the acute need to align the interests of management with shareholders—arising from the fact that, as large firms, it was not feasible for managers to own 100 percent of the firm.[1] These plans took a somewhat different form than modern stock option schemes.

[1] If managers were "residual claimants" on the value of the firm then there would, of course, be no moral hazard problem (Grossman and Hart, 1983).

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Instead of the modern approach of granting stock options at no cost to the executives, GM and Du Pont lent money to managers so that they could purchase company stock at market prices. Managers paid market interest rates on such loans, and in the GM plan they were required to repay the principal gradually, too. The stock incentive plans of the 1920s were also seven to ten years in length, a much longer term than most modern stock option plans. As Alfred P. Sloan put it, "I believe [management] should be told frankly that here is an opportunity to go in business; they take the profit and they take the risk" (quoted in Chandler and Salsbury, 1971).

Although precise comparisons with the size of modern day stock option plans are problematic, the General Motors and Du Pont schemes of the 1920s provided incentives that were large relative to the salaries and wealth of the participating executives, and represented a nontrivial portion of the firm. In 1930, 58 managers purchased $93 million of stock (in 2004 dollars) at Du Pont, and at General Motors 246 managers purchased $578 million of stock (in 2004 dollars). The 1930 purchase by managers at GM represented 3.2 percent of the firm's stock, while the 1927 purchase by managers at Du Pont was 3.4 percent.[2] The 1930 purchase at Du Pont was (in 1930 dollars) an average of more than $152,000 per participating executive—at a time when the highest-paid officer in the corporation earned less than $100,000 per annum. At GM, it was an average of more than $223,000 per participating executive in 1930 dollars, which translates to $2.3 million per executive in 2004 dollars.

In this article, I will describe the Du Pont and General Motors executive incentive schemes in more detail. I will then argue that these plans were well-designed to pre-empt and address many of the criticisms of modern-day executive stock option plans.

The Du Pont and General Motors Schemes

Two of the companies that were pioneers of formal executive incentive schemes, E.I. du Pont de Nemours & Company ("Du Pont") and General Motors ("GM"), had close ties in the early twentieth century. Pierre S. du Pont, one of the cousins who then controlled Du Pont, was president of GM from 1920–1923, and Du Pont owned around one-third of GM at the time (Chandler and Salsbury, 1971).

The first scheme that focused purely on providing executive incentives was established at Du Pont in 1927.[3] The chief architect of this scheme was Walter

[2] These totals were considerably higher than in many of the surrounding years and may reflect management's view of the value of the stock and represent an attempt to time the market by purchasing stock they believed to be undervalued. For instance, purchases at Du Pont were 0.4 percent of the value of the firm's stock in 1928, 0.3 percent in 1929 and 1.0 percent in 1930.

[3] Pierre du Pont did propose an equity-based management incentive scheme at General Motors as president in 1923, called the Managers Securities Company. Although this scheme did provide executives with substantial ownership of GM stock, it was in no small part motivated by an effort to monetize

Carpenter, then vice-president of the finance committee (in modern terms, the chief financial officer) and later chairman. Prior to 1927, executive incentives had been provided in "an *ad hoc* fashion" (Cheape, 1995). Du Pont did have two cash bonus plans that had been in place since 1909 (Cheape, 1995). "A" Bonuses were awarded regardless of firm performance and were almost exclusively awarded to nonexecutive employees. "B" Bonuses were restricted to management and explicitly dependent on the performance of the firm. The 1932 Annual Report (Du Pont, 1932) summarizes the structure of these bonus schemes.

> *A Bonuses:* Provides that bonuses of cash to be invested in common stock of the company, may be granted for conspicuous service of any nature. Such services may take the form of
>
> (a) "An invention or improvement which results in a profit or saving, or in a reduction of risk of personal injury or damage to the company's property."
>
> (b) "Unusually ingenious solution of a business or technical problem."
>
> (c) "Perseverance and persistency of a character that results in demonstrating a proposition that results in an important saving or benefit to the company."
>
> (d) "An accomplishment by an employe[e] of a character far and beyond what might be expected from one occupying his position. . . ."
>
> *B Bonuses:* This plan provides that bonuses of cash, to be invested in common stock of the company, may be granted to those who have contributed most in a general way to the company's success by their ability, efficiency and loyalty. The "B" Bonus Fund is provided as follows:
>
> "This amount shall not exceed 7½% of the surplus net receipts from manufacturing operations above 6% on the capital employed in such operations of this company and of certain subsidiary companies in which this company shall hold substantially all of the outstanding common stock. The capital employed in manufacturing operations shall be calculated separately from the investment in non-operative items."

In addition, the three du Pont cousins who controlled the firm—Pierre, Irénée and Lammont—made individual stock awards from their own holdings. For instance, each member of the 1915 executive committee was given 1,250 shares of the Du Pont Securities Company (the family holding company); in 1919, they received 1,000 shares of Du Pont common stock; and in 1921, 400 shares in the holding company.

Du Pont's holdings in General Motors (in order to pay bonds due to J.P. Morgan & Co.) without losing voting control of its 38 percent stake (Chandler and Salsbury, 1971). Due to financial difficulties, General Motors was unable to purchase stock for the scheme, and it was provided by Du Pont, who received $4,950,000 in cash and $28,800,000 in 7 percent preferred stock in consideration (Chandler and Salsbury, 1971).

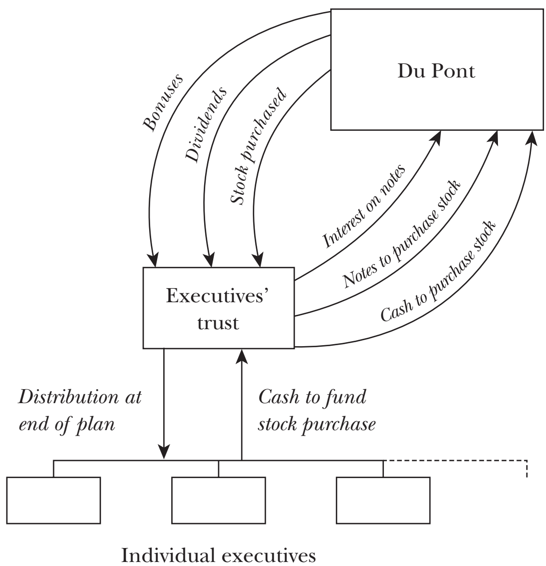
Walter Carpenter believed that the equity-based incentives should be provided more systematically and should not be paid for by the company itself (Cheape, 1995). He developed a plan, adopted on January 1, 1927, that integrated the existing cash bonuses into a broader and more systematic executive incentive scheme. The key component was the "Executives' Trust Plan" (Du Pont, 1932):

> *Executives' Trust Plan:* This plan, adopted January 1, 1927, was created in order that those men in the company's organization who have proven themselves qualified to occupy important managerial posts and to succeed to higher positions might be afforded an opportunity to acquire substantial holdings in the common stock of the company, thereby assuring a distinct mutuality of interest with other stockholders in the continued progress of the company.
>
> Varying amounts of the common stock of the company have been sold from time to time to such eligible employees, the company receiving in payment interest-bearing notes running from seven to ten years, with the stock so purchased deposited as security for the payment of the notes. . .
> The funds to provide for the bonuses under this plan are obtained from two sources, viz.:
>
> (1) An amount equal to the 'B' Bonus Fund described on page 18.
> (2) 'Six per cent of the net earnings of the company from activities under the control of the Executive Committee, as included in the published annual report to the stockholders, in excess of 6% upon the company's investment in those activities. Said earnings and investment figures shall not include the earnings from, or investment in, those companies in which the company shall own less than 50% of the common capital stock, or those activities under the control of the Finance Committee, such as the company's General Motors investment.'

Bear in mind that this plan was adopted five years *before* the publication of the seminal work by Berle and Means (1932) on the separation of ownership and control.

The key features of the scheme as described in the extracts above are represented in Figure 1. Executives would borrow money from the company to purchase stock in Du Pont. It was originally proposed that stock be sold at book value, but Irénée Du Pont insisted that it be at market value (Cheape, 1995). These notes bore a market rate of interest and had a term of between seven and ten years. The notes were not cash-pay, rather pay-in-kind—that is, executives were not forced to make cash payments and could allow the interest to compound. The interest could, however, be paid down by dividends on the stock, as well as by bonuses received under the "B" Bonus plan and the additional bonuses provided under the Executives' Trust Plan.

Figure 1
The Du Pont Scheme



Thus, the scheme provided executives with equity incentives that had both downside and upside risk, were relatively long-term in nature and placed emphasis on operating performance as well as the stock price. The bonuses that could be used to help pay off the debt were explicitly tied to firm performance. Indeed, the firm had to earn a return on capital of 6 percent before any such bonuses were awarded (since executives did not receive "A" Bonuses). It is also noteworthy that the bonuses carved-out returns due to the performance of General Motors, of which Du Pont owned more than 30 percent at the time. This provision is consonant with a basic principle of agency theory—Holmström's (1979) Sufficient Statistic Theorem—that the agent's payment should not depend on matters over which the agent has no influence. The scheme, and the trust structure that it utilized, also had some tax advantages. Dividends received by executives through the trust were not taxed until the end of the scheme, and there was no tax due on the stock until it was finally sold. Thus, executives did not have to pay cash taxes on gains that they had not yet realized. Table 1 provides some information on the size the Du Pont's Executive Trust Fund from 1927–1932.

It is no accident that Du Pont developed such a scheme at this time. In 1920, Pierre du Pont and Alfred P. Sloan Jr. had decentralized decision making at General Motors, creating what would become known as the multidivisional form of organization. Du Pont adopted the multidivisional form one year later in 1921. This decentralization of decision making meant that executives below the president had a much more important role than previously. Providing those executives with increased incentives to act as "owner managers" was a logical step.

Table 1
DuPont Executive Trust Fund 1927–1932
(nonconstant dollars)

Year	*Number of shares sold*	*Price per share*	*Cash bonuses awarded*	*Number of individuals receiving awards*
1927	91 000	$32.46	$ 789,000	30
1928	9 450	$48.86	$1,370,575	35
1929	29 300	$87.00	$2,475,000	62
1930	110 300	$80.00	$ 865,400	58
1931	—	—	$ 694,214	59
1932	2 500	$65.00	—	—

Source: E.I. Du Pont de Nemours and company, *Annual Report,* 1932.

The analog of the Du Pont Executive Trust Plan at GM was the General Motors Management Corporation (GMMC). Indeed, the "Class A Stock Distribution Plan" (SDP) at General Motors was a virtual replica of what Du Pont called the "B" Bonus fund. GM's 1931 Annual Report described the GMMC as follows (General Motors, 1931, p. 14):

> This corporation was organized in 1930 for the purpose of interesting the Corporation's executive staff in the ownership of the Corporation's securities, the underlying principle being that the efficiency and effectiveness of management is enhanced and stimulated through a direct participation in the results of its endeavor. The payment to the General Motors Management Corporation for the year amounts to $3,965,000, which payment is participated in by 1,481 members of the Corporation's executive staff. Of this number, 246 senior executives were participating fully in the Management Plan through ownership of common stock of the General Motors Management Corporation. The remaining 1,235 executives participated in the [SDP] under the Bonus Plan.

Each executive participating "fully" in the General Motors Management Corporation received a parcel of common stock of the GMMC based on position and salary. In 1930, the GMMC purchased 1,375,000 shares of GM common stock at $40 per share (General Motors, 1930–1931), the consideration being $5,000,000 cash and $50,000,000 in 6 percent notes. The amortization schedule on the notes called for six annual payments of $7,000,000, with an $8,000,000 bullet payment in 1937. The notes would be gradually redeemed through the dividends paid on the stock and through the bonuses that the individual executives received under the bonus plan—a process analogous to the redemption process at Du Pont.

While the General Motors scheme had been planned for several years prior to its launch, it actually began in March 1930, almost five months after the stock market crash of 1929. GM stock had already fallen 35 percent in those five months.

A little more than two years after the plan began, in July 1932, GM stock had a market value around $8 per share, the firm was not reaching the 6 percent return on applied capital required to pay bonuses to the managers' under the Stock Distribution Plan, and the dividend on common stock had fallen from $3 per share to $1 per share from March 15, 1932. In this situation, the General Motors Management Corporation was not even able to pay the interest on the promissory notes. Of the $1,196,250 interest due, the GMMC was only able to pay $687,500, and of the $7,000,000 of bonds due to be retired on March 15, 1932, the GMMC could only retire $3,125,000 and was forced to extend that schedule two years ahead (General Motors, 1932, p. 14). In 1933, it looked as if the GMMC would default on the entire $7 million, since there was no payment under the Stock Distribution Plan in 1932 (Cheape, 1995; General Motors, 1932).

Given the difficulties the scheme faced, management might have decided to set the entire plan aside in favor of some new plan to restore incentives. Alfred Sloan and other managers favored such a move, but the board would not go along with this. In particular, two board members, George F. Baker Jr. (chairman of the First National Bank of New York) and George Whitney (a partner at J.P. Morgan and Company) saw the problem as one between a creditor and a delinquent debtor (Cheape, 1995). At Sloan's behest, Walter Carpenter attempted to negotiate a settlement, which would have included GM agreeing to buy back the shares at the original $40. Baker and Whitney would have none of this, and Baker, especially, insisted that any change be approved by the stockholders. Indeed, Baker was seen by Whitney as being rather lenient in not pressing for liquidation of the scheme and hence management forfeiting all bonuses earned since inception (which amounted to 170,000 shares trading at about $28 each at that time) (Cheape, 1995). The board agreed to defer shortfalls of interest payment and principal, but steadfastly refused to guarantee a buyback at $40.

By 1934, GM's operations had begun to recover, and the board put to shareholders a renegotiated scheme whereby default interest would be forgiven and a $40 buyback would be guaranteed—at a time when the stock traded at $39.50 a share. The vote passed with a 99.9 percent majority (Cheape, 1995).

The stock price recovered further and profits became large enough to allow bonuses under the GM Stock Distribution Plan. The plan ended on March 15, 1937, with GM stock standing at $65 per share. The final return for each $1,000 originally invested was $12,595 (Cheape, 1995, p. 153). This included bonuses and dividend, less interest paid on the borrowed funds, and represented a return of 43.6 percent per annum over a period of seven years, *during the Great Depression.* The stock price appreciated from $40 to $65—a rate of 7.2 percent per annum. By comparison, the return on the Dow Jones Index was –5.0 percent per annum over the same period.[4]

The General Motors experience with its management incentive plan during

[4] Based on data from ⟨http://lib.stat.cmu.edu/datasets/djde0093⟩.

these years illustrates how different the bargaining position between management and the board can be under a scheme of "purchased" incentives, where executives borrow money to buy stock, and one of "free" incentives, where executives are granted the options to purchase stock in the future. Had GM executives held stock options during this period, it is hard to believe that the board would not have simply issued new options with lower strike prices. However, in the GM scheme the board of directors had to face the problem that interest payments owed to the firm were not being made, and managers had to face the issue that if the trust was simply folded up, the managers would lose the past bonuses that had been paid into the trust. Indeed, the GM scheme provided constant pressure on management even when the trust was in danger of failing, because managers stood to lose if the trust failed or perhaps to gain if the trust continued.

The Du Pont management incentive scheme turned out to be even more robust than the General Motors plan. First, the downturn in business resulting from the Great Depression was much milder at Du Pont. Second, since that trust already allowed payments of interest and principal to be deferred more easily, it was not threatened by bankruptcy and did not need to be adjusted.

Discussion

Modern incentive schemes that link executive compensation to the performance of company stock may have something to learn from their distant ancestors. Some of the criticisms of modern stock-option dominated schemes are as follows. First, stock options are worth nothing at all if the stock price doesn't rise above the exercise level, which may encourage excessive risk-taking (Holmström and Milgrom, 1987; Hall and Knox, 2005). Second, options where the actual stock price falls far below the exercise price (so that the option is "out-of-the-money") may provide little incentive. Such options often have their exercise price strike prices reset, or they are cancelled and replaced with new options. Third, options can encourage over-retention of earnings, since the managers who hold stock options and who make decisions about paying dividends do not receive dividend payments on their options (Hall and Murphy, 2003). Fourth, due to managerial risk aversion, the value of options to managers (who would prefer to be diversified) may be far less than the cost of such options to the company (Hall and Murphy, 2003). Fifth, the vesting periods of stock option plans are often relatively short, causing management to focus on the short-run rather than long-run stock price. Sixth, stock option plans reward or penalize managers primarily for whether they are in charge at a time when the stock market is generally rising or generally falling—not according to whether they perform relatively well compared to other firms.

The structure of the Du Pont and General Motors management incentive plans from the 1920s and 1930s minimizes many of these problems. The use of stock meant that managers faced both upside benefit and downside risk at all times according to the movements of a company's stock price, unlike the case with options that can become nearly worthless and without incentive effect when the stock price falls far below the option's exercise price. Thus, the incentives for excessive risk-taking and manipulation were much reduced. The length of the schemes, running for seven or more years, encouraged management to take a long-term focus and further reduced temptation to engage in short-run manipulation of the stock price.

In fact, the Du Pont and GM schemes have more in common with management incentive schemes provided by many of today's private equity funds. Their incentive packages often have a time horizon of five years or more and require management to purchase a nontrivial amount of equity out of their own pocket. The private equity funds often also provide upside incentives through stock options where the exercise price is set well above the current market price, so that they will only pay off if the firm shows genuine growth in the long run.

When did firms move away from the management incentive plan that Du Pont and General Motors pioneered in the 1920s and 1930s? In the mid-1950s, both Du Pont and GM moved to schemes that made use of stock options. It remains something of a puzzle why this occurred. The Revenue Act of 1950, which taxed proceeds from qualifying stock options as capital gains rather than income as had previously been the case, is often cited as a reason. Since the capital gains rate in the early 1950s was 25 percent and the top marginal income tax rate was over 90 percent in the years, this change made options more attractive. However, since gains from stock had always been taxed at the capital gains rate, the change did not make gains from options more attractive than gains from outright ownership of stock from a tax point of view.

There is an undeniable attraction to the idea that managers of large companies, as the agents of shareholders, should have compensation linked to the share price. However, the institutional details of such arrangements—such as whether it is a stock purchase or stock option and the period of time involved—can clearly matter a great deal to whether the incentives are more likely to be useful or counterproductive. The stock plans of the 1920s and 1930s are not a cure-all, and they face some of the same issues as stock option plans. For example, both arrangements face the problem that a risk averse manager who desires diversification may value the stock-linked compensation at less than it costs the company to provide it. Both arrangements face the problem that the manager is rewarded or penalized for overall movements in the stock market, not for the relative performance of the company. In both incentive schemes, there is reason to wonder whether the managers who decide to set up such plans are benefiting themselves more than shareholders. However, as boards of directors grope toward an appropriate way to provide incentives for their managers, the original stock-linked management incentive plans of the 1920s and 1930s may well be worth another look. After all, they were arguably better designed than the stock option laden management incentive plans that became popular in the 1990s.

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