

Chapter 1

Executive Compensation in the U.S. Corporations

In the U.S. performance of the firm is often measured by short-term profit and usually the short term is taken to be a quarter of the year (three months). To keep respectable profit (respectable to the Wall Street *i.e.*, to the financial analysts and investors). the CEO (chief executive officer) or CFO (chief financial officer) of the firm tries to

1. increase revenue (sometimes resorting to questionable accounting gimmicks such as the cases of Enron and WorldCom);
2. decrease cost by laying off workers.

The importance of a firm meeting Wall Street's quarter-end profit expectations is documented in many financial articles. For example, writing about a sham deal Enron made with Merrill Lynch, the *New York Times* front page article on August 8 2002 says

Desperate to meet a year-end profit target, the Enron Corporation struck a sham energy deal with Merrill Lynch that let Enron book a \$60 million profit in the final days of December 1999.

"There are times when missing (the target) by a penny is huge," Mr. Hill said. "This would have creamed the stock."

Instead, by the end of that week, Enron's share price had climbed 27 percent.

Enron executives benefited tremendously from the deal. Because Enron met its profit targets, dozens of top executives—including Mr. Lay, Mr. Skilling and Mr. Baxter—collected millions of stock and bonuses. Moreover, in the two weeks after the Jan. 18 earnings announcement, 20 Enron executives and directors sold \$82.6million in stock.

In the U.S. it is generally accepted that the firm's objective is to maximize profit. If profit is maximized, then it is said that the firm is operating efficiently, and workers and managers are paid according to their productivity at the wage rate that is determined in the market.

In reality, however, things do not work as cleanly as the simple theory of the firm suggests.

Using some newspaper articles and downloaded papers, let us take a look at (i) the growing wage gap, and (ii) executive compensations, and (iii) income distribution.

1.1 The growing wage gap

(This section is downloaded from a web site: Chuck Collins, April 17, 1996).

Top Executives Get Another Raise While Workers' Incomes Remain Flat

It's April and executive pay is in the news. Continuing a trend of several years, the gap between the earnings of corporate executive and their workers grew substantially during 1995. Measuring CEO pay is complicated and two highly regarded studies that were recently released yielded significantly different numbers. But, as we will see below, even the most conservative numbers indicate a strong and disturbing trend that has left many working

Americans with a growing sense of unfairness about the way the economy is going.

Measuring the Wage Gap

Two sets of numbers were released in the last few weeks: one by compensation expert Graef Crystal, reported in the *New York Times* (3/29/96) and the other by the William M. Mercer Company, under contract with the *Wall Street Journal* (4/11/96). *Business Week* will publish a third study this week. There was a pronounced discrepancy between the figures reported in the *New York Times* and those reported in the *Wall Street Journal*. Both sets of figures are provided here. The discrepancy between them and our reasons for preferring Graef Crystal's calculations are discussed separately below.

- According to the *Times* average CEO salary and bonuses grew 14 percent and average Total Compensation grew 31 percent. Total compensation averaged approximately \$5 million.
- According to the *Journal* salary and bonuses grew 10.4 percent and Total Compensation grew 14.2 percent. Total Compensation averaged approximately \$2 million.

In comparison, the average blue collar worker saw no inflation-adjusted raise in 1995 and the average white collar worker saw less than a 1 percent increase after inflation (U.S. Dept. of Labor, NYT 3/29/96). These one-year figures follow a trend which has seen a 9 percent decline in real wages for 80 percent of American workers from 1979 to 1994 (Economic Policy Institute). Median household income fell 6 percent from 1989 to 1994 (U.S. Census Bureau).

Despite the lower Wall Street journal figures, Joann S. Lublin, who authored the lead article accompanying the study, opens by noting that, "The earnings gap between executives at the very top of corporate America and middle managers and workers has stretched into a vast chasm." This observation is supported by figures compiled by Graef Crystal for the last several years. In a study of 292 large corporations the ratio between the pay of the average CEO and the average worker was 145 to one in 1992; 170 to one in 1993; 187 to one in 1994 (Chrystal Report 7/95). Though this study has not been completed for 1995, indication from the preliminary study reported in the *Times* suggest that the ratio will reach over 200 to one. In 1973, the

ratio was 41 to one. Current ratios in Japan and Europe are between 30 and 40 to one.

Is the Wage Gap a Problem?

Management specialist Peter Drucker argues that vast pay differentials within an organization, particularly at a time of economic uncertainty for workers, undermine commitment and productivity. For society as a whole, escalating CEO pay, at a time of stagnating wages and widespread economic insecurity, contributes to public anger and cynicism about our economic and political institutions. People see corporate and political elites working together to insure their own security while ignoring the needs of the needs of the middle class. This fuels the anti-government extremism of the militias and ‘freemen’ and the scapegoating and demagoguery of Republican Presidential candidate Patrick Buchanan. The growing wage gap moves us further in the direction of a winner-take-all society. It undermines the incentive for ordinary people to work hard and play by the rules.

The Causes of Escalating CEO Compensation

Some critics of excessive CEO compensation argue that it is primarily an organizational problem. Board members who decide CEO compensation are likely to be either: corporate insiders who the CEO can fire, outsiders whom the CEO has picked or who are CEOs of other large corporations, or “professional” directors who sit on many boards. These CEOs and board members cooperate to protect each others interests. You scratch my back and I’ll scratch yours.

The recent surge in CEO pay can also be explained in part by a laudable effort, spurred by shareholders, to tie compensation to performance: Rewarding CEOs who provide returns to shareholders by increasing stock prices and paying dividends. The portion of compensation that CEOs receive in the form of restricted stock and stock option plans has increased dramatically in recent years. This has the unfortunate consequence of rewarding highly those executives who increase shareholder value at the expense of workers, either by keeping wages low or by “downsizing”. Two daily cited cases involve (1). Robert Allen at AT&T who received a compensation package valued at more than \$16 million during a year in which he initiated the layoff of 40,000 employees and (2) Albert Dunlap of Scott Paper who received compensation more than \$24 million in 1994 after laying off 11,000 employees.

Reducing the Wage Gap

A recent Boston Globe editorial argued that, “it is too cumbersome for government to regulate pay ratios, but stockholders and the media should pay attention to make sure corporate executives are truly worth high salaries by presiding over corporations that value workers” (4/11/96). This recommendation ignores the fact that the divergent interests of workers and shareholders is a major cause of the problem. It is shareholders, particularly institutional shareholders, who are pressing companies to produce short term performance. Their interests frequently coincide with those of the CEO who stands to gain if he provides return to shareholders over the short term, even at the expense of workers and communities. Wall Street and Main Street do have different interests in this situation.

Government policy contributes to the pay gap because CEO compensation is treated as a tax deductible business expenses as long as it is tied to performance. In effect, ordinary taxpayers are subsidizing excessive compensation for CEOs. One remedy, backed by a coalition of community and labor organizations, is The Income-Equity Act (HR 620). Introduced by U.S. Representative Martin Sabo (D-MN) it raises the federal minimum wage two dollars, restoring it to its 1967 purchasing power of \$6.50, and it limits the deductibility of compensation that is more than 25 times the lowest paid worker in a firm.

This measure attempts to redress the wage gap by introducing the notion that a rising tide should lift all boats. It attempts to restore balance to corporate compensation by sharing the benefits of economic growth with workers. It ends the practice of ordinary taxpayers subsidizing excessive executive compensation through the tax code.

Varying Measures of Executive Compensation

The Graef Crystal/New York Times study provides a more accurate measure of executive compensation. There are two factors that produce the variance between the Times and the Journal studies: (1) Sample size and (2) the way that stock options are imputed. Despite a larger sample size that should make their figures more reliable the Journal’s method underestimates Total Compensation.

1. Sample Size. Crystal’s sample is smaller. Seventy-six of the largest corporations are compared with the 350 largest used in the Journal

study. Since pay generally increases with the size of the corporation this lends an upward bias to Crystal's numbers. This explains, in part, why Crystal's percentage increase in salaries and bonuses is almost 40 percent higher than the Journal's. 14 percent rather than 10.2 percent. Recalculation of the Journal's numbers, using the method of accounting for stock options that Graef Crystal uses, produces a figure of \$3.5 million for Total Compensation. This means that half the variance between the Journal figure of \$2 million and the Time Figure of \$5 million can be explained by sample size.

But sample size does not explain why Crystal's percentage increase in Total Compensation is more than double the Journal's, 31 percent rather than 14.2 percent. Crystal has already performed a study that doubled his sample size and found that it only reduced the figure for percentage increase in Total Compensation from 31 percent to 29.6 percent, still more than double the Journal figure.

2. Imputation of stock option plans. The two studies count stock options granted to CEOs differently. Crystal counts the present value of option grants in the year they are granted. The Journal study provides this number but does not include it in Total Compensation. Instead the Journal study counts in Total Compensation only the gains on option exercised. Since the period between the granting of options and the right to exercise them is usually five to seven years, the gain being counted by the Journal study in 1995 most likely dates from options granted between 1988 and 1990. This is like a trailing economic indicator. It tells you about the past but does little to help you understand the future. Since the largest growth in compensation in recent years has been in the form of option grants the Journal study misses this development. Counting the present value of options in the year granted, as Times study does, gives a much better indication of the value of current compensation package.

Counting gains on options that are exercised, rather than values when granted, can even obscure the size of compensation packages. If a CEO does not exercise his options until after he retires, this compensation will never be counted. Once the executive leaves the company, he and the company are no longer required to report any compensation. The method the Journal study uses undervalues current compensation and can result in the failure to account for some compensation.

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1.2 Who Made the Biggest Bucks

The Wall Street Journal, Interactive Edition, April 9, 1998

The stampede of corporate leaders rushing to profit from the long bull market grew last year. A handful really struck pay dirt when they cashed in large numbers of stock options.

The list of highest-paid CEOs for 1997, based on William M. Mercer Inc.'s compensation survey, reflects the executives' gains from exercising

options and other long-term incentive payouts as well as salary, bonus and the value of their restricted-stock grants.

For the first time, Mercer also tracked the value of shares owned by chiefs at the end of their companies' 1997 fiscal year plus each concern's 1997 total shareholder return—the change in stock price plus declared dividend payments. The median value of CEOs' stakes was nearly \$8 million, while the median total shareholder return, or TSR, equaled 29.7%.

Here's a look at last year's top earners:

- **Sanford I. Weill**, *Travelers Group, Inc.*, with total direct compensation of \$230.5 million. This hefty figure includes a \$220.2 million gain from exercising stock options and restricted stock valued at \$777,322 at the time of the grant. Mr. Weill also appeared on last year's scorecard. His equity stake was valued at \$796.2 million at year end. Travelers had a TSR of 79.9%.
- **Philip J. Purcell**, *Morgan Stanley Dean Witter & Co.*, whose total direct compensation reached \$50 million. That largely resulted from \$36.4 million in stock-option gains and restricted stock valued at \$3.1 million at time of grant. His shares were valued at \$67.8 million by the close of 1997. Morgan Stanley had a TSR of 50.9% last year.
- **Robert B. Shapiro**, *Monsanto Co.*, \$49.3 million, including \$46.7 million in stock-option gains and \$750,365 in long-term incentive payouts. He owned shares valued at \$47.4 million at the end of a year in which shareholders had a total return of 20.1%, below the survey median.
- **John F. Welch Jr.**, *General Electric Co.*, \$39.8 million, which primarily reflects \$31.8 million from exercising options. His stock had a year-end value of \$61.9 million. TSR was 50.9%. This marks Mr. Welch's third straight year on the scoreboard.
- **Harvey Golub**, *American Express Co.*, \$33.2 million, including \$27.1 million in option gains and \$2.9 million in long-term incentive payouts. He owned shares valued at \$39.3 million at year end. TSR equaled 59.9%.
- **Charles A. Heimbold Jr.**, *Bristol-Myers Squibb Co.*, \$29.2 million, which includes \$25.3 million from cashing in options and \$1.1

million in long-term incentive payouts. His equity stake was valued at \$25 million at year end. The company had a TSR of 77%.

- **Lawrence A. Bossidy**, *Allied Signal, Inc.*, \$28.2 million, which mainly reflects \$23.1 million in option gains. He owned stock valued at \$34.7 million. Investors saw returns of 17.4% far below the survey median.
- **William C. Steere Jr.**, *Pfizer Inc.*, \$28.1 million, resulting from \$15.4 million in option gains and \$8.8 million in long-term incentive payouts. His year-end stake was valued at \$40.3 million, while TSR was 81.9%

1.3 Executive Compensation

Executive Compensation consists of *direct compensation*, *at risk compensation*, and *accumulated wealth*, and each of these categories has the following components:

Direct Compensation	{	Salary	
		Bonus	
		Long-term incentive plan (LTIP)	
At Risk Compensation	{	Restricted stock awards	
		Stock options	
Accumulated Wealth	{	Options—profits realized in the year	
		Total value of equity	{
			value of stock beneficially held
			value of options, end of fiscal year

In evaluating executive compensation, or executive pay, large discrepancies arise from the way stock options in the “at risk compensation” category is imputed. In section 4.3 the growing wage gap, Chuck Collins points out that the New York Times data, which are given by Graef Crystal, impute the present value of option grants in the year they are granted, whereas the Wall Street Journal gives only the gains on option exercised.

In the article “How the Pay Figures Were Calculated,” the *New York Times*, Sunday, April 1, 2001 states

Table 1.1: Executive Compensation in 2000

	American Express	Apple Computer	Berkshire Hathaway	General Electric
	Harvey Golub	Steven P. Jobs	Warren E. Buffet	John F. Welch Jr.
Salary	1,000,000	1	100,000	4,000,000
Bonus	3,200,000	0	0	12,700,000
LTIP	2,922,865	90,000,000	0	54,019
Stock*	0	0	0	48,715,625
Options**	23,839,398	685,000,000	0	79,020,000
Options***	43,225,200	0	0	57,112,560
TVE****	274,622,151	168	33,878,786,000	198,775,974

Notes: The *New York Times*, April 1 2001

* Restricted stock awards

** Options grant date values estimated using the Black-Scholes OPM

*** Option profits realized in the year

**** Total value of equity.

“Pay can be calculated in many ways. Pay critics tend to cite the biggest possible numbers, while executive often try to minimize the reported size of pay packages. The biggest differences stem from the way stock options are valued.”

There are many ways to input stock options, and a popular method, which the *New York Times* uses is the Black-Scholes option price model (OPM). The Black-Scholes OPM will be explained in the next section. Here, let me present the executive compensations of our CEO’s from the table of executive compensation containing more than 100 CEOs. The Table 4.1 is compiled from the *New York Times*, April 1 2001.

Table 4.2, again compiled from the *New York Times* April 1 2001, gives the highest 5 and lowest 5 executive pay that consists of direct and at risk compensation categories. Accumulated wealth is excluded in Table 4.2.

Table 1.2: Executive Pay: Direct+Restricted Stock+Options

Company (Name of CEO)	Direct	Restricted Stock	Options	Total
Lowest 5, low to high				
Berkshire Heathway (Warren E. Buffet)	\$100,000	0	0	\$100,000
Microsoft (Steve A. Ballmer)	\$628,414	0	0	\$628,414
Allegheny Technology (Robert P. Bozzone)	\$57,143	\$602,862	\$126,050	\$796,055
Safeco (Robert H. Eigsti)	\$900,000	0	0	\$900,000
Interstate Bakeries (Charlies A. Sullivan)	\$815,385	0	\$289,200	\$1,104,585
Highest 5, low to high				
General Electric (John F. Welch Jr.)	\$16,745,019	\$48,715,825	\$79,202,000	\$144,489,644
Tyco International (L.D. Kozlowski)	\$4,150,000	\$21,207,540	\$179,802,582	\$ 205,160,122
Oracle (L.J. Ellison)	\$208,000	0	\$216,200,000	\$216,408,000
Citigroup (Sanford I. Weill)	\$19,933,818	\$8,687,442	\$286,471,364	\$ 315,092,624
Apple Computer (Steve P. Jobs)	\$90,000,001	0	\$685,000,000	\$775,000,001

Notes: The *New York Times*, April 1 2001

How the Pay Figures Were Calculated, *The New York Times*, April 1 2001

To measure executive compensation, **Money & Business Section** studied 200 large public companies that had filed proxies for their 2000 fiscal year by March 27. Executive Compensation Advisory Services, an Alexandria Va. division of Drake Lam Morin that analyzes and sells information on executive pay, collected the data. Eric Legg, the senior project manager, conducted the research.

Pay can be calculated in many ways. Pay critics tend to cite the greatest possible numbers, while executives often try to minimize the reported size of pay packages. The greatest differences stem from the way stock options are valued.

Any value assigned to an option is a guess; the real worth of a chance to buy a stock four years from now at, say, \$30 a share depends on the trading price of that stock in four years. The data in the tables on the following two pages recognizes this uncertainty by valuing options in two ways.

One method, using the widely accepted Black-Scholes formula, estimates the ultimate value of the options based on the stock's price on the day of the grant and the stock's historical volatility. The other method estimates the value of options based on current prices for each stock—the value that an executive would have in mind if he had an eye for the stock ticker.

Income from options that executives exercised in 2000 but received in previous years appears in a separate column. It is not included in the pay statistics in the main article in this section, since this money is pay from a previous year.

For executives who served only part of the fiscal year as chief executives, the study prorated their cash pay based on their time in the job. The value of stock and stock options were not prorated.

Here are definitions for the columns in the tables.

Direct Compensation

Salary: Base annual pay that does not depend on company results. By law, any amount exceeding \$1 million is not tax deductible.

Bonus: A cash payment that depends on the company's performance.

Long-term Incentive and Other: Incentive payments that most companies set approximately three years in advance and pay out based on a company's results, plus miscellaneous items like moving expenses, insurance payments or fees covering personal use of a corporate jet.

Total Direct Compensation: The sum of the three previous categories.

At-Risk Compensation

Restricted Stock Awards: The value, as reported by the company, of shares conditionally granted to an executive. Typically executives get to keep these shares only if they remain with the company for a predetermined period. Values are shown only for executives who received restricted stock.

2000 Options, Grant-Date Value: An estimate of the value of the stock options granted to an executive, using the Black-Scholes formula.

2000 Options, Estimated Current Value: An estimate of the value of those stock options based on the closing price of the stock on Wednesday. For an executive who received 100,000 options on a stock that traded on the grant date at \$30, the current value would equal \$200,000 if the current stock price was \$32. If the stock was trading at \$29, the options would have no current value.

Accumulated Wealth

Options Profits Realized in F.Y. 2000: The gain that executives saw in the 1999 fiscal year by exercising options from previous years. This gain is the difference between the exercise price and the share price at the time of exercise. (Some executives immediately sell the underlying shares, while others hold onto the stock.)

Value of Stock Beneficially Held: The value of shares held outright by an executive, based on the closing stock price at the end of the company's fiscal year. In some cases, executives may disclaim beneficial ownership of a portion of the shares they are reported as owning—because, for instance, shares are held in trust for a child.

Value of Options, Fiscal Year-End: Value, at the end of a company's fiscal year, of both exercisable and nonexercisable options held by the executive.

Total Value of Equity: The sum of the previous two numbers.

Ownership Stake: Beneficial stock holdings, plus exercisable options and options exercisable within 60 days, as a percentage of the company's total shares outstanding, as reported in the company's proxy.

Performance

Stock Performance vs. S. & P. 500: The amount, in percentage points, by which the company's performance trailed or exceeded the stock index during fiscal 2000.

Averages and Medians

For each column, these figures take into account only executives for whom values were reported. For example, the average for restricted stock grants include only those executives who received restricted stock. "Average" is the arithmetic mean; "median" is the figure in the middle of the series of numbers.

The performance statistics were calculated by Money & Business, based on data provided by Bloomberg Financial Markets.

1.4 Stock Option Prices

References

1. Strong, R. A. (1993) *Portfolio Construction Management and Protection*, West Publishing Co.
2. Yahoo: <http://finance.yahoo.com>

Key Terms:

American option: An option whose owner has purchased the right to buy or sell a set number of shares of common stock (normally 100 shares) at a set price (the striking or exercise price) from a specified person (the option writer) anytime prior to the expiration of the option.

European option: An option whose owner has purchased the right to buy or sell a set number of shares of common stock (normally 100 shares) at a set price (the striking or exercise price) from a specified person (the option writer) **only** at the specified date (**the expiration date.**)

Bid Price: The highest price at which anyone has expressed a willingness to buy a particular asset.

Asked price: The lowest price at which anyone has expressed a willingness to sell a particular asset.

Intrinsic value: A characteristic of an option determined by the degree to which it is in **in-the-money**. For a call option **intrinsic value is equal to stock price minus the striking price**. For a put option, **intrinsic value is striking price minus stock price**.

Time value:: equal to the premium minus the intrinsic value.

Out-of-the-money: an option has no intrinsic value.

In-the money: an option has intrinsic value.

At-the-money: an option's striking price is exactly equal to the price of the underlying security.

Striking price or exercise price: the price at which an underlying stock can be purchased or sold if the option is exercised.

Delta: the change in option premium expected from a small change in the stock price:

$$\Delta = \frac{\partial C}{\partial S}$$

where C is the option premium.

An option is traded in the unit of 100 and it expires by the closing of business on the 3rd Friday of the expiration month.

An Example of Option Quotes: General Motors (GE)

Options are listed in many financial papers or financial sections of daily news papers. On line, you may look at option prices and also you may trade options. Tables of option prices are listed according to expiration dates: Sept 04, Oct 04, Dec 04, Jan 05, Mar 05, etc. Table 4.3 is for October 04 and it is compiled from **finance.yahoo.com** and it lists the call and put options of General Motors (GE).

Table 4.3 Here.

Black-Scholes' Option Pricing Model (OPM)

The **Black-Scholes' Option Pricing Model (OPM)** is the solution to a second order partial differential equation that arises from the use of the **Ito formula** for a stochastic differential equation. This partial differential equation turns out to be the well-known heat equation from physics, and the solution turns out to be a **Kac functional**.

The Black-Scholes' OPM is used throughout finance today, and for many option traders and professionals the model has become a trusted black box, but you should be aware of the assumptions behind the OPM:

1. The stock price follows a **random walk with drift** or the *logarithms of the returns of the stocks are normally distributed*.

Table 1.3: General Motors Option Prices: August 31 2004 at 2:04pm ET

Stock Price: \$32.42 at 2:04PM ET						
Expire at close Fri, Oct 15,2004						
Strike	Symbol	Last	Chg	Bid	Ask	Vol
Call Options						
15.00	GEJC.X	17.70	0.00	17.60	17.70	0
30.00	GEJF.X	2.80	↓ 0.10	2.75	2.80	5
32.50	GEJZ.X	0.80	↓ 0.10	0.80	0.85	166
35.00	GEJG.X	.05	↓ 0.05	.05	0.10	30
Put Options						
27.50	GEVY.X	0.10	0.00	N/A	0.05	0
30.00	GEVF.X	0.20	↑ 0.05	0.15	0.20	25
32.50	GEVZ.X	0.80	↑ 0.10	0.75	0.80	361
35.00	GEVG.X	2.55	↑ 0.14	2.50	2.65	28
37.50	GEVS.X	4.90	0.00	4.90	5.10	6

2. The stock pays no dividends during the option's life.
3. European option.
4. Markets are efficient.
5. No commissions.
6. Constant interest rates.
7. Constant variance.
8. No autocorrelation.

There are many ways to impute stock options other than using the Black-Scholes OPM. Even if we use the Black-Shores OPM, imputation greatly varies according to

- how you set the current stock price S .
- how you set the risk-free interest rate, r .
- how you set time t in years until option expiration.

Table 1.4: How Option Premium Varies with r and with σ . ($S = \$40$, $K = \$30$, $t = 5$)

r	$\sigma = .2$	$\sigma = .4$	$\sigma = .6$	$\sigma = .8$	$\sigma = 1.0$
.01	10.51	12.10	14.32	16.68	19.03
.04	11.32	12.74	14.84	17.11	19.40
.07	12.13	13.37	15.35	17.55	19.78
.10	12.92	14.00	15.87	17.98	20.15
.13	13.70	14.64	16.39	18.42	20.52

- how you set the standard deviation of stock returns, σ .
- how the striking price, K , is set.

Suppose that an CEO gets a stock call option of 1,000,000 shares at the striking price of $K = \$30$ and the right to exercise the option is 5 years ($t = 5$). If the current stock price is $S = \$40$, the call option premium varies with the risk-free rate, r , and the standard deviation of stock returns, σ as illustrated in Table 1.

Hence, the stock options of one million shares can be evaluated anywhere from \$10.5 million to \$20.5 million dollars.

The Black-Scholes Option Price, C

$$C = S \times N(d_1) - K e^{-rt} \times N(d_2)$$

With

$$S = \$30, \quad K = \$25, \quad r = .05, \quad \sigma = .45$$

$$t = 3 \text{ months} = \frac{3}{12} = .25 \text{ in year}$$

we find C :

$$\begin{aligned} d_1 &= \frac{\ln(S/K) + \{r + (\sigma^2/2)\} t}{\sigma \sqrt{t}} \\ &= \frac{\ln(30/25) + \{.05 + (.45^2/2)\} .25}{.45 \sqrt{.25}} \end{aligned}$$

$$= = \frac{.1823 + (.05 + .10125) .25}{(.45)(.5)} = .978$$

$$d_2 = d_1 - \sigma \sqrt{t} = .978 - (.45)(.5) = .7533$$

$$N(.9783) = .8360$$

$$N(.7533) = .7744$$

$$C = 30 \times .8360 - 25 \cdot e^{-(.05)(.25)} \times .774$$

$$= 25.08 - 19.1195 = 5.96.$$

1.5 Income Distribution

1.5.1 We're More Productive. Who Gets the Money?

Bob Herbert, Op-Ed Column, the *New York Times*, April 5 2004

It's like running on a treadmill that keeps increasing its speed. You have to go faster and faster just to stay in place. Or, as a factory worker said many years ago, "You can work 'til you drop dead, but you won't get ahead."

American workers have been remarkably productive in recent years, but they are getting fewer and fewer of the benefits of this increased productivity. While the economy, as measured by the gross domestic product, has been strong for some time now, ordinary workers have gotten little more than the back of the hand from employers who have pocketed an unprecedented share of the cash from this burst of economic growth.

What is happening is nothing short of historic. The American workers' share of the increase in national income since November 2001, the end of the last recession, is the lowest on record. Employers took the money and ran. This is extraordinary, but very few people are talking about it, which tells you something about the hold that corporate interests have on the national conversation.

The situation is summed up in the long, unwieldy but very revealing title of a new study from the Center for Labor Market Studies at Northeastern

University: “The Unprecedented Rising Tide of Corporate Profits and the Simultaneous Ebbing of Labor Compensation—Gainers and Losers from the National Economic Recovery in 2002 and 2003.”

Andrew Sum, the center’s director and lead author of the study said: “This is the first time we’ve ever had a case where two years into recovery, corporate profits got a larger share of the growth of national income than labor did. Normally labor gets about 65 percent and corporate profits about 15 to 18 percent. This time profits got 41 percent and labor [meaning all forms of employee compensation, including wages, benefits, salaries and percentage of payroll taxes paid by employers] got 38 percent.”

In other words, an awful lot of American workers have been had. Fleeced. Taken to the cleaners.

The recent productivity gains have been widely acknowledged. But workers are not being compensated for this. During the past two years, increases in wages and benefits have been very weak, or nonexistent. And despite the growth of jobs in March that had the Bush crowd dancing in the White House halls last Friday, there has been no net increase in formal payroll employment since the end of the recession. We have lost jobs. There are fewer payroll jobs now than there were when the recession ended in November 2001.

So if employers were not hiring workers, and if they were miserly when it came to increases in wages and benefits for existing employees, what happened to all the money from the strong economic growth?

The study is very clear on this point. The bulk of the gains did not go to workers, “but instead were used to boost profits, lower prices, or increase C.E.O. compensation.”

This is a radical transformation of the way the bounty of this country has been distributed since World War II. Workers are being treated more and more in a rigged casino. They can’t win.

Corporate profits go up. The stock market goes up. Executive compensation skyrockets. But workers, for the most part, remain on the treadmill.

When you look at corporate profits versus employee compensation in this recovery, and then compare that, as Mr. Sum and his colleagues did,

with the eight previous recoveries since World War II, it's like turning a chart upside down.

The study found that the amount of income growth devoured by corporate profits in this recovery is "historically unprecedented," as is the "low share ... accruing to the nation's workers in the form of labor compensation."

I have to laugh when I hear conservatives complaining about class warfare. They know this terrain better than anyone. They launched the war. They're waging it. And they're winning it.

1.5.2 An Economy That Turns American Values Upside Down

Bob Herbert, the *New York Times*, September 6, 2004

The Labor Department reported last week that 144,000 payroll jobs were created in August. Let's put that in perspective.

The number was below market forecasts. It was also below the number of jobs needed to accommodate the growth in the employment-aged population. In short, this was not good news. It's only by the diminished job-creation standards that have prevailed since the last recession that any positive spin could be put on last month's performance.

As the Economic Policy Institute tells us, in a book-length report it is releasing today: "The United States has been tracking employment statistics since 1939, and never in history has it taken this long to regain the jobs lost over a downturn."

In "The State of Working America 2004/2005," the institute shows in tremendous detail how those lost jobs and other disappointing aspects of the recovery are taking a severe economic toll on working families.

According to the institute:

"After almost three years of recovery, our job market is still too weak to broadly distribute the benefits of the growing economy. Unemployment is essentially unchanged, job growth has stalled, and real wages have started to fall behind inflation. Today's picture is a stark contrast to the full employment period before the recession, when the tight labor market ensured that the benefits of growth were broadly shared.

"Prolonged weakness in the labor market has left the nation with over a million fewer jobs than when the recession began. This is a worse position, in terms of recouping lost jobs, than any business cycle since the 1930's."

What is happening is nothing less than a deterioration in the standard of living in the United States. Despite the statistical growth in the economy, the continued slack in the labor market has resulted in declining real wages for anxious American workers and a marked deterioration in job quality.

From 2000 through 2003 the median household income fell by \$1,500 (in 2003 dollars) - a significant 3.4 percent decrease. That information becomes startling when you consider that during the same period there was a strong 12 percent increase in productivity among U.S. workers. Economists will tell you that productivity increases go hand-in-hand with increases in the standard of living. But not this time. Here we have a 3.4 percent loss in real income juxtaposed with a big jump in productivity.

"So the economic pie is growing gangbuster and the typical household is falling behind," said Jared Bernstein, the institute's senior economist and a co-author of the new book.

This is the part of the story that spotlights the unfairness at the heart of the current economic setup in the U.S. While workers have been remarkably productive in recent years, they have not participated in the benefits of their own increased productivity. That doesn't sound very much like the American way.

According to the institute, "Between 1947 and 1973 productivity and real median family income both grew 104 percent, a golden age of growth for both variables." That parallel relationship began to break down in the 1970's, but it is only recently that it fell apart altogether, leaving us with the following evidence of unrestrained inequity:

"In the 2000-03 period income shifted extremely rapidly and extensively from labor compensation to capital income (profits and interest)," so that the "benefits of faster productivity growth" went overwhelmingly to capital.

American workers are in an increasingly defensive position. In a tight labor market, when jobs are plentiful, workers have leverage and can demand increased wages and benefits. But today's workers have lost power in many different ways - through the slack labor market, government policies that

favor corporate interests, the weakening of unions, the growth of lower-paying service industries, global trade, capital mobility, the declining real value of the minimum wage, immigration and so on.

The end result of all this is a portrait of American families struggling just to hang on, rather than to get ahead. The benefits of productivity gains and economic growth are flowing to profits, not worker compensation. The fat cats are getting fatter, while workers, at least for the time being, are watching the curtain come down on the heralded American dream.

1.5.3 CAMPAIGN 2004: THE BIG ISSUES: Taxes for an Ownership Society

The New York Times Editorial, September 15, 2004

When President Bush talks about an "ownership society," hold on to your wallet. The slogan, like "compassionate conservative" before it, is sufficiently vague to mean many things to many people, and the few details that Mr. Bush has provided - bolstered home ownership and new tax-sheltered savings plans - seem innocuous enough. But in tax terms, "ownership society" means only one thing: the further reduction, if not the elimination, of taxes on savings and investments, including taxes on dividends and on capital gains on stocks, bonds and real estate. That, in turn, means - by definition - a shift in the tax burden onto wages and salary - or, put more simply, a wage tax.

The regressive results would be appalling. The richest 1 percent of Americans earn just about one-tenth of total wages and salary, but almost half of all income from savings and investments - income that would be largely, perhaps entirely, untaxed in an "ownership society." In contrast, taxable wages and salary make up almost all of the income of most Americans. The Bush camp has been floating the idea that what the president is getting at is a consumption tax. But the administration is not talking about a true consumption tax, which would apply to spending regardless of where the money comes from - from your paycheck, cashing in your stocks and bonds, selling your house, or borrowing. It is, in effect, talking about a tax on wages. Properly understood, a consumption tax is intended to increase national savings by making it relatively more attractive to save than to spend. The main argument against it is that it hits hardest at low-income and

middle-income families, who tend to spend most of what they earn. But as Peter Orszag, an economist at the Brookings Institution, pointed out in a recent speech at Georgetown University, Mr. Bush's de facto wage tax would be the worst of all worlds: it would have all the regressive aspects of a consumption tax and none of its potential for increasing national savings.

When Mr. Bush talks about new tax-favored savings accounts, he never mentions that most people don't even take advantage of existing plans. They won't be turned into owners by new tax breaks for interest, dividends and capital gains. To turn Americans into owners requires a strong economy in which the people who work for a living share in the benefits of economic growth.

A good place to start would be to tackle the obstacles to sustained growth that currently exist, like spiraling health care costs, dependence on foreign oil and the administration's mania for unaffordable tax cuts - in short, to reverse, not intensify, the trends in the current economy.

In the past nearly three years of economic recovery, the distribution of economic growth has become more skewed than at any other time in modern memory. Currently, 47 percent of growth is flowing to corporate profits, by far the largest share during any of the other eight post-World War II recoveries. Fifteen percent goes to wages and salary, the smallest share of economic growth in more than 50 years. To make matters worse, the share of compensation that is devoted to health and pension benefits is far larger during this recovery than any other, representing a further squeeze on the wages and salaries of ordinary Americans. In 2004, take-home pay as a share of the economy dropped to its lowest level since the government started keeping records in 1929.

All of this would make the drive for a wage tax laughable, if only it were a joke. And yet, when he says "ownership society," a wage tax is exactly what Mr. Bush is driving at.