

ROOSEVELT

I N S T I T U T E

Fixing a Hole: **How the Tax Code for Executive Pay Distorts Economic Incentives and Burdens Taxpayers**

White Paper by
Susan R. Holmberg and Lydia Austin
July 22, 2013

ROOSEVELT

INSTITUTE

EXECUTIVE SUMMARY

In an effort to curb excessive pay for corporate executives, when President Clinton signed his first budget into law in 1993, he created Section 162(m) of the Federal tax code, which limited the corporate tax deductibility for executive compensation to \$1 million. It included, however, an exception from any limit in deductibility for “performance pay.” This white paper presents the key economic research on the broad impacts of the performance pay provision of Section 162(m) in the I.R.S. tax code. Based on this existing body of evidence, we argue that it is time to reform this tax law by closing the performance pay loophole and expanding the \$1 million deductibility limit to total compensation for corporate executives.

Susan Holmberg is the Director of Research at the Roosevelt Institute. She holds a Ph.D. in Economics from UMass, Amherst, the premier center for research and teaching in heterodox economics. In addition to corporate governance issues, Susan's primary research areas are international development and the history of economic thought.

Lydia Austin is a Roosevelt Institute | Campus Network Senior Fellow in Economic Development. She is a recent graduate of the University of Michigan Gerald R. Ford School of Public Policy and has published a number of papers and articles on economic development and public finance.

For media inquiries, please contact Tim Price at 212.444.9130 x 219 or tprice@rooseveltinstitute.org.

The views and opinions expressed in this paper are those of the authors and do not necessarily represent the views of the Roosevelt Institute, its donors, or its directors.

KEY FINDINGS

- Average CEO pay has continued its robust growth post-Section 162(m), but performance pay, especially stock options, now drives a significant part of that growth.
- Many economists argue that current executive compensation structures, a large proportion of which are stock options, can lessen executives' exposure to risk and thereby create risks in the financial system; encourage fraudulent behavior, including illegal backdating; and potentially minimize incentives to make long-term investments in research and innovation.
- The performance pay deduction significantly decreases the marginal tax rates that corporations face. Furthermore, taxpayers have subsidized over \$30 billion to corporations for the performance pay loophole between 2007 and 2010 alone.

Fixing a Hole: How the Tax Code for Executive Pay Distorts Economic Incentives and Burdens Taxpayers

By Susan R. Holmberg and Lydia Austin, July 22, 2013

INTRODUCTION

Skyrocketing CEO compensation has been a topic of public debate for decades. Just about every proxy season brings us fresh corner office profiles of CEOs traveling in high style, courtesy of corporate shareholders and U.S. taxpayers. In fact, since our recent economic crisis and the painfully sluggish jobs recovery in the midst of all-time-high corporate profit margins,¹ the average pay package for CEOs exceeds pre-recession levels by a significant amount. In 2010, with unemployment running at almost 10 percent, average CEO pay packages (in the Standard & Poor's 500) were 24 percent higher than in 2008.² During the same period, the average pay for workers grew only 3 percent. This raw disparity in income growth is not new; since 1978, executive compensation at American firms has risen 725 percent, more than 127 times faster than worker compensation over the same period (Mishel and Sabadish 2012).

Many Americans see CEO salaries moving well into the double-digit millions as wasteful, obscene, and morally corrupt, particularly since the Occupy movement so successfully drew our attention to income inequality in the U.S. And while there are some policy levers in the works to curb excessive executive compensation, such as the recent Dodd-Frank legislation, there is much more to be done. While we acknowledge that out-of-control CEO pay can only be reined in through myriad policy measures, this white paper discusses one that could be especially powerful: closing the performance pay loopholes in Section 162(m) of the current tax code.

In his 1992 campaign, one of President Bill Clinton's key issues was the expanding paychecks of corporate executives. His big idea? Cap deductions for executive pay at \$1 million, which, in 1993, became part of the U.S. tax code as Section 162(m). There were, however, a few exceptions to this rule, most notably one for executive pay that qualified as "performance-based," which has not only further driven the rise in average executive pay (while reducing tax revenues), but restructured it such that it has skewed economic incentives, arguably to the detriment of our economy.

This white paper describes briefly the history of Section 162(m), particularly the economic arguments that led to the implementation of the performance pay requirement, and discusses key research on the economic effects of Section 162(m) of the U.S. tax code. We argue, especially in light of the 2008 financial crisis and the role that finance executives played in it, that it is time to reform Section 162(m) by closing the performance pay loophole and expanding the \$1 million deductibility limit to total executive pay.

AGENCY THEORY

In May of 1990, economists Michael C. Jensen and Kevin J. Murphy published a notable piece in the *Harvard Business Review*³ that argued excessive executive pay was not inherently a problem to successful corporate governance. The real issue, they maintained, was the ways in which executive compensation was structured:

¹ <http://www.businessinsider.com/profits-at-high-wages-at-low-2013-4>

² http://www.cnn.com/id/42929318/CEO_Pay_Exceeds_Pre_Recession_Level

³ Based on their 1990 research paper "CEO Incentives: It's Not How Much You Pay, But How."

The relentless focus on how much CEOs are paid diverts public attention from the real problem—how CEOs are paid. In most publicly held companies, the compensation of top executives is virtually independent of performance. On average, corporate America pays its most important leaders like bureaucrats. Is it any wonder then that so many CEOs act like bureaucrats rather than the value-maximizing entrepreneurs companies need to enhance their standing in world markets? (1)

In making their argument, Jensen and Murphy were employing agency theory, an economic framework that Jensen (along with William H. Meckling) introduced to the field of economics in 1976. Agency theory argues that 1) shareholders are the sole “residual claimants” of corporate profits and 2) a mismatch of incentives, information and risk exposure exists between corporate managers and shareholders. These ideas gained traction far beyond the confines of academia and played a strong role in creating the performance pay loopholes in Section 162(m).

SECTION 162(M)

Section 162 of the U.S. tax code relates to allowable business deductions. Section 162(m), in particular, deals with the compensation of executive officers. For example:

(1) IN GENERAL

In the case of any publicly held corporation, no deduction shall be allowed under this chapter for applicable employee remuneration with respect to any covered employee⁴ to the extent that the amount of such remuneration for the taxable year with respect to such employee exceeds \$1,000,000.⁵

This section of the tax code includes several provisions, but the most notable is the one exempting performance pay from the \$1 million deduction limit.

(B) EXCEPTION FOR REMUNERATION PAYABLE ON COMMISSION BASIS

The term “applicable employee remuneration” shall not include any remuneration payable on a commission basis solely on account of income generated directly by the individual performance of the individual to whom such remuneration is payable.

How does performance-based compensation differ from, say, just simply paying people more? Isn't a salary (or the threat of not having one) incentive enough? Per agency theory, the idea of performance pay is to better align the incentives of managers and shareholders by linking executive pay directly to share performance. Furthermore, the IRS has clear specifications for what qualifies as performance pay and what does not, for example:

- Compensation is granted only upon achieving specified objective performance goals (e.g. stock prices, market shares, earnings, etc.).
- A compensation committee of two or more outside directors establishes the performance goals.
- The terms under which compensation is paid are disclosed to shareholders and approved by a majority vote.

According to Balsam's (2012) table included below, salaries, bonuses, stock grants, and “other compensation,” (in other words, perks, such as travel in private jets and club memberships) are subject to the \$1 million deductibility cap while non-equity incentive plans, stock options, stock appreciation rights (SARs), and pensions are *most likely*

⁴ “Covered employees” refers to executive officers.

⁵ <http://www.law.cornell.edu/uscode/text/26/162>

fully deductible.⁶ The italics are for one caveat: while these features of executive compensation are eligible for deduction, because the IRS has specific requirements about performance pay, sometimes companies choose not to comply and thus willingly lose the full deduction (Balsam 2012).

Chart 1: Components of the Compensation Package

Compensation component	TAX STATUS	
	Executive	Firm
<i>Salary</i>	Taxable	Deductible subject to \$1 million cap
<i>Bonuses</i>	Taxable	Deductible subject to \$1 million cap
<i>Non-equity incentive plan</i>	Taxable	Likely to be fully deductible
<i>Stock grants</i>	Taxable	Deductible subject to \$1 million cap
<i>Stock options</i>	Taxable	Likely to be fully deductible
<i>Stock appreciation rights</i>	Taxable	Likely to be fully deductible
<i>Pension and deferred compensation</i>	Taxable	If deferred to after retirement likely to be fully deductible
<i>Other compensation</i>	Taxable	Deductible subject to \$1 million cap

THE DIRECT IMPACTS OF SECTION 162(M): CHANGING COMPENSATION STRUCTURE

It has been almost two decades since Section 162(m) was incorporated into the tax code. There is ample evidence in the research literature to indicate that, because of the way the policy was constructed, i.e. the performance pay provisions, it has not had its intended impact of stemming excessive executive compensation. In fact, average CEO pay has continued its robust growth post-Section 162(m), except now performance pay, particularly stock options, drives a significant part of that growth.

Stock options are contracts giving employees the option to buy their company’s stock at a specified “exercise” price, after a vesting period. They are the quintessential form of performance pay because they are used to link compensation directly to share prices, thereby giving executives the incentive to increase shareholder value. A wide variety of studies have shown how stock options have increasingly comprised CEO pay post-Section 162(m).

Frydman and Jenter (2010), for example, present data⁷ from 1936 to 2005 illustrating total compensation as well as three components of CEO pay: salaries and current bonuses, payouts from long-term incentive plans, and the grant-date values of stock option grants.⁸ Their chart (Chart 2 below) shows a rise in stock options as early as the

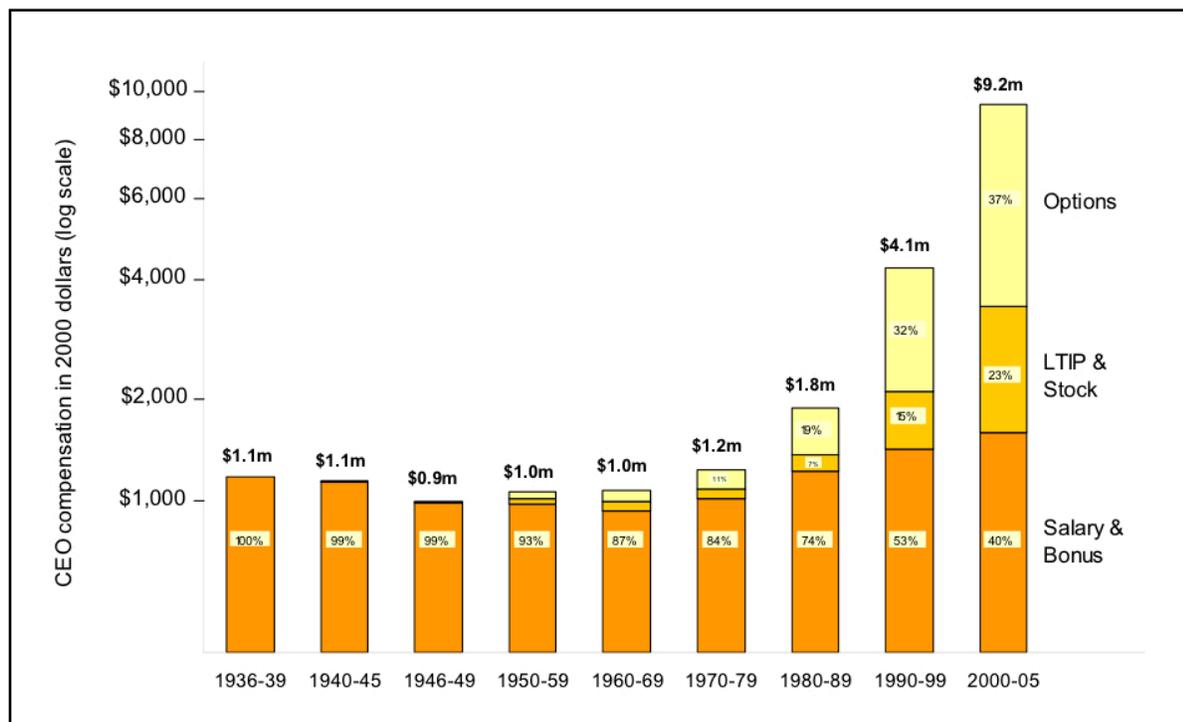
⁶ Bonuses are an interesting category in that they qualify as performance pay if IRS requirements are met, but if they are not met then they are considered non-equity incentive pay. SARs are a reward in an increase in stock price, but differ from stock options in that the manager does not have to purchase stocks to receive the proceeds (Balsam 2012).

⁷ Frydman and Jenter’s data was collected from proxy statements for all available years from 1936 to 1992. They used the S&P ExecuComp database to extend the data to 2005.

⁸ Frydman and Jenter also note that percentages are calculated by computing the percentages for average CEO pay and then applying them to median CEO pay. Values are in inflation-adjusted 2000 dollars.

1950s (when stock options became taxable at the much lower capital gains rate rather than at the rate of earned income). The frequency of stock option grants gained ground in the 1980s and then surged in the 1990s and 2000s, mainly due to the exceptions in Section 162(m).

Chart 2: The Structure of CEO Compensation from 1936 to 2005



Perry and Zenner (2001) also state that the largest increases in compensation components were performance pay (primarily bonus and stock option grants). Hall and Murphy (2002) report that, from 1992 to 1999, median executive compensation levels for S&P 500 Industrials had almost tripled, from close to \$2 million to almost \$6 million, and that the increase primarily reflects a dramatic growth in stock options, “which grew from 23% of compensation in 1992 to 48% of compensation in 1998” (Hall and Murphy 2002: 16). Finally, Hall and Liebman (2000) explain that the median CEO did not receive a stock option grant until 1985, but by 2000 most top executives of large companies received stock options and “the average stock option grant is now [in 2000] larger for most top executives than salary and bonus combined” (3).

These papers demonstrate that the performance pay exceptions in Section 162(m) amounted to a structural change in how executives are paid. This was not unforeseen, as corporations were simply tailoring their pay packages to maximize their tax advantages and please their shareholders. But it is also worth discussing what the research literature suggests are some of the policy’s broader effects, including its impact on how much risk executives take on, long-term investments, and tax revenues.

THE BROAD IMPACTS OF SECTION 162(M): RISK, INVESTMENT, AND TAX REVENUES

Certainly one of the fundamental makings of a successful business leader and entrepreneur is willingness to take big risks. Starting a business, moving into new markets, developing new products, and so forth all come with great risks – of losing profits, shutting down departments, even closing a company’s doors. One of the main arguments for high CEO pay is that it compensates executives for being exceptionally calculating risk-takers. Yet there is

also some evidence that the performance-pay structure of CEO pay, which can enable executives to become very wealthy, very quickly, can create incentives for shortsighted, extremely high-risk, and occasionally fraudulent decisions in order to boost stock prices.

Because of the recent financial crisis, much of the recent literature focuses on the relationship between pay structure and risk in the financial industry. For example, economists involved in the Squam Lake Working Group on Financial Regulation (2010) argue that the structure of executive pay can affect the risk of “systemically important” financial institutions. “Because the owners [...] of financial firms do not bear the full cost of their failures, they have an incentive to take more risk than they otherwise would. This, in turn, increases the chance of bank failures, systemic risk, and taxpayer costs” (2). Denis et al. (2006) examine the linkage between the likelihood of securities fraud allegations – such as material misrepresentations or misstated financial results – and the “option intensity”⁹ of the CEO’s compensation (controlling for other possible variables that could contribute to fraud). They find that CEOs of “fraud firms” have greater option-based compensation, indicating that the greater the incentive for CEOs to maximize the company’s stock price, the greater the incentive the CEO has to engage in fraudulent activities to accomplish this objective. It is notable that the authors also tested for the potential that option intensity prompted the fraud allegations (by limiting the sample to companies that restated their earnings) and found a similar relationship.

More broadly, Ferris and Wallace (2006) find that option-oriented compensation is linked to higher share price volatility and lower dividends. Other studies reach similar conclusions. Jensen and Murphy (2004) suggest that managers with large holdings of stock options may have much more short-term oriented investment perspectives, which can increase volatility in stock prices and other associated risks.

Sanders and Hambrick (2007) find that stock options for CEOs encourage uncertain investment spending in the form of R&D, capital, and acquisitions. They also find that stock options cause extreme wins or losses, “suggesting that stock options prompt CEOs to make high-variance bets, not simply larger bets” (1). And they find that “option-loaded” CEOs tend to produce more losses than gains. Sanders and Hambrick posit that CEOs paid with options enjoy the benefits of share price increases but do not lose if share prices drop. Thus, “they can be expected to sort investment alternatives according to the expected values of gains while paying little attention to the likelihoods or magnitudes of losses” (34).

In fact, in the recent past many companies found one way to eliminate the risk of losses for their executives: they simply backdated the stock options to make them more valuable. Backdating is the practice of changing the date when a stock option was granted, typically to an earlier date when the stock price was lower,¹⁰ creating a more favorable options outcome. Backdating itself is not illegal if it is authorized by the board, fully disclosed, and complies with reporting and tax rules. Secret backdating, however, is illegal, and indicates that corporations are underreporting their taxable income to the I.R.S. (Narayanan et al. 2007 and Fried 2008).

Bebchuk, Grinstein and Peyer (2006) show that around 12 percent – or 2,000 – of firms backdated CEO stocks from the mid-1990s to mid-2000s, and that backdating executive stocks boosted compensation by 20 percent. Lie’s research (2005 and, with Heron, 2007) was the first to show evidence that abnormal stock returns (negative before option grants and positive afterward) was due to backdating of option grant dates and was very influential in several SEC investigations of corporate backdating in the late 2000s.

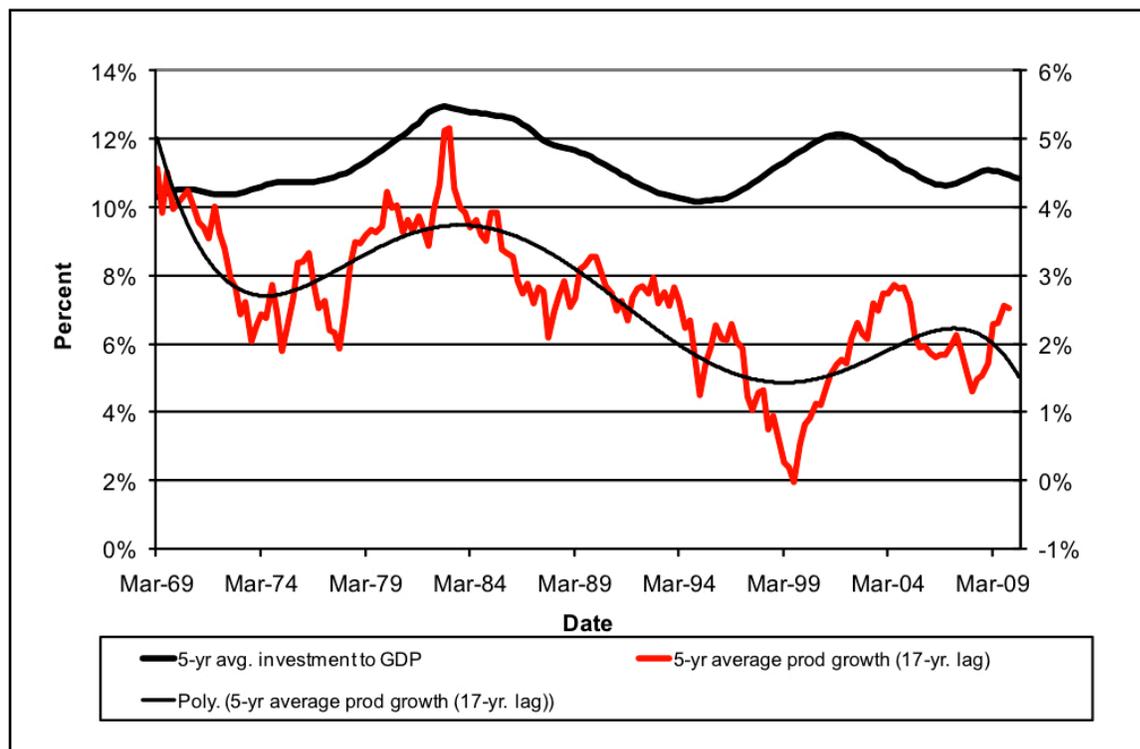
Weller and Reidenbach (2011) take a slightly different tack in their critique of stock options. They argue that the emphasis on options in executive pay skews incentives away from long-term investment. After a decade of low growth, productivity accelerated in the mid-1990s (due to the tech boom), but stalled in the second half of the

⁹ The authors define option intensity as the sensitivity of the value of the executive’s stock option portfolio to shifts in stock price.

¹⁰ The exercise price is typically equal to the prevailing stock price on the designated grant date.

2000s. They also show data (Chart 3 below) illustrating that future productivity hinges on present business investments, but that corporate investment¹¹ has been perennially low, not rising above the last peak of 12.9 percent of GDP in the early 2000s.

Chart 3: Net Investment and Productivity Growth, 1969 to 2010¹²



Weller and Reidenbach argue that low corporate investment is not a function of low corporate profits, as profits returned to pre-recession levels by September 2010, but levels of business investment remain low. They explain this decline in corporate investments with William Lazonick’s (2008) argument that companies have increasingly spent more of their profits on share purchases and dividend payouts to boost the value of stock and maximize immediate shareholder value. When stock options and stock grants are issued, a company’s outstanding shares rise and share prices fall. Share repurchases or “buybacks” have a countervailing effect; they shrink the supply of a company’s shares in the market, thus resulting in higher share prices. In other words, they help offset the dilutive impact that stock options have,¹³ but do so at the expense of long-term investments.¹⁴

While there is not a lot of research on the connection between the increasing practice of buybacks and the decline in long-term investment, the empirical linkage between executive stock options and share buybacks has

¹¹ Defined as gross non-residential fixed investment.

¹² Weller and Reidenbach’s calculations based on Bureau of Labor Statistics, 2010 (Output-per-Hour) Washington, DC: BLS, and Bureau of Economic Analysis, 2010, (National Income and Product Accounts) Washington, DC: BEA.

¹³ Dividend payouts have a similar impact on share prices.

¹⁴ There is a common argument that companies sometimes find themselves generating more cash than they can reasonably reinvest and should either buyback shares or redistribute, through cash dividends, to shareholders. In 2011, U.S. and European companies held a combined total of around \$2 trillion in excess cash (Jiang and Koller 2011). But buybacks on the scale of the last 20 years are hardly consistent with this innocent justification. These seem plainly motivated mostly by management’s desire to raise its pay. On the scale we now see these, such retorts are hard to accept.

been established. For example, Klassen and Sivakumar's (2001) research looks at repurchase and option activity for nonfinancial firms from 1995 to 1999. Their findings indicate that firms repurchase shares to avoid dilution from stock option compensation programs. They also look at shareholders' response to stock buybacks, citing evidence that markets are responsive to executive option grants when buybacks occur in the same year. Klassen and Sivakumar posit that shareholders view options, in relation to stock buybacks, as representing a material cost to firms and a wealth transfer from shareholders to executives. Griffin and Zhu's research (2009) also find a positive and contemporaneous (in other words, not sequenced) relationship between CEO stock options and share repurchases, suggesting that the buybacks are meant to counter the dilutive effects of the exercise of stock options.

SUBSIDIZING CEO PAY

In addition to the evidence that suggests the structure of CEO pay can institute excessive risk for both shareholders and the financial system at large, as well as potentially divert corporate resources from long-term investment, Balsam (2012) calculates the loss in tax revenues from executive compensation deductions in 2007 to be between \$6 and \$13.7 billion.¹⁵ In 2009, this loss ranged from \$3.5 to \$8.3 billion. He estimates (using a 25 percent effective tax rate) that the total amount lost between 2007 and 2010 was \$30.4 billion. (This is, of course, not calculating any secret backdating of stock options.) Furthermore, Graham, Lang, and Shackelford (2004) point out that the performance pay deduction (mainly from stock options) significantly decreases marginal tax rates that corporations face.¹⁶

CONCLUSION

Curbing the rise of CEO pay and its effects on our economy requires a multifaceted policy approach. This paper narrowly focuses on one of them: closing the performance pay loophole in Section 162(m) of the U.S. tax code. Based on the research literature, there is sufficient evidence to conclude that the performance pay rule ultimately negated the objective of the broader policy, which was to curb excessive executive compensation, not to fuel it. It has also had the unintended consequence of introducing structural incentives in executive pay schemes that encourage excessive risk-taking, particularly by executives in the financial industry, and potentially dampening long-term corporate investment. Finally, at a time when the U.S. should be investing in its infrastructure and social safety nets, taxpayers are subsidizing billions of dollars worth of executive compensation, without any clear benefit to the public. Thus, by closing the performance pay exceptions from Section 162(m) – in other words, by expanding the \$1 million deductibility cap to all executive pay – policy makers would potentially create incentives for longer-term private investment, minimizing risk exposure to both corporations and the economy at large, and raising billions in tax revenues.

¹⁵ Balsam's lower bound estimate is based on a 15 percent tax rate; his higher bound is based on a 35 percent tax rate.

¹⁶ This tax subsidy has implications beyond lost revenues for the federal budget. It also creates a disincentive for institutional shareholders to be concerned about excessive pay because taxpayers are providing billions of dollars in tax subsidies.

REFERENCES

- Balsam, Steven. 2012. "Taxes and Executive Compensation." *Economic Policy Institute*. Briefing Paper No. 344. (<http://www.epi.org/publication/taxes-executive-compensation>).
- Bebchuk, Lucian, Yaniv Grinstein and Urs Peyer. 2006. "Lucky CEOs." *Harvard Law School Olin*. Discussion Paper No. 574. (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=954609).
- Denis, David J., Paul Hanouna, and Atulya Sarin. 2006. "Is There a Dark Side to Incentive Compensation?" *Journal of Corporate Finance* 12(3): 467-488.
- Ferris, Kenneth R. and James S. Wallace. 2006. "IRC Section 162(m) and the Law of Unintended Consequences." (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=942667).
- Fried, Jesse M. 2008 "Option Backdating and Its Implications." *Washington and Lee Law Review*. 65(1118439): 853-886.
- Frydman, Carola and Dirk Jenter. 2010. "CEO Compensation." *Annual Review of Financial Economics*. 2(1): 75-102.
- Graham, John R., Mark H. Lang, and Douglas A. Shackelford. 2004. "Employee Stock Options, Corporate Taxes, and Debt Policy." *The Journal of Finance* LIX (4): 1585-1618.
- Griffin, Paul A. and Ning Zhu. 2009. "Accounting Rules? Stock Buybacks and Stock Options: Additional Evidence." *UC Davis Graduate School of Management*. (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1316623).
- Hall, Brian J. and Jeffrey B. Liebman. 2000. "The Taxation of Executive Compensation." *National Bureau of Economic Research Working Paper Series*. Working Paper No. 7596. MIT Press NBER Book Series Tax Policy and the Economy 1-44.
- Hall, Brian J. and Kevin J. Murphy. 2002. "Stock Options for Undiversified Executives." *Journal of Accounting and Economics* 33(1): 3-42.
- Jensen, Michael C. and Kevin J. Murphy. 2004. "Remuneration: Where We've Been, How We Got to Here, What are the Problems, and How to Fix Them." *ECGI Working Paper Series in Finance*. Working Paper No. 44.
- Jensen, Michael C. and Kevin J. Murphy. 1990. "CEO Pay Incentives: It's Not How Much You Pay But How." *Harvard Business Review*. (<http://hbr.org/1990/05/ceo-incentives-its-not-how-much-you-pay-but-how/ar/1>).
- Jensen, Michael C. and William H. Meckling. 1976. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3(4): 305-360.
- Jiang, Bin and Tim Koller. 2011. "Paying Back Your Shareholders." *McKinsey on Finance*. (http://www.mckinsey.com/insights/corporate_finance/paying_back_your_shareholders).
- Klassen, Kenneth J. and Ranjini Sivakumar. 2001. "Stock Repurchases Associated with Stock Options do Represent Dollars out of Shareholders' Wallets." *University of Waterloo - School of Accounting and Finance*. (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=271478).

- Lazonick, William. 2008. "The Quest for Shareholder Value: Stock Repurchases in the US Economy." *University of Massachusetts Lowell*. (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=440100).
- Lie, Erik. 2005. "On the Timing of CEO Stock Option Awards." *Management Science* 51(5): 802-812.
- Lie, Erik and Randall A. Heron. 2007. "Does Backdating Explain the Stock Price Pattern around Executive Stock Option Grants?" *Journal of Financial Economics* 83(2): 271-295.
- Mishel, Larry and Natalie Sabadish. 2012. "CEO Pay and the Top 1%: How Executive Compensation and Financial-Sector Pay Have Fueled Income Inequality." Issue Brief 331. (<http://www.epi.org/publication/ib331-ceo-pay-top-1-percent/>).
- Narayanan, M. P., Cindy A. Schipani, and H. Nejat Seyhun. 2007. "The Economic Impact of Backdating of Executive Stock Options," *The Michigan Law Review* 105(8): 6.
- Perry, T. and Zenner, M. 2001. "Pay for Performance? Government Regulations and the Structure of Compensation Contracts." *Journal of Financial Economics* 62: 453-488.
- Sanders, Wm. Gerard and Donald C. Hambrick. 2007. "Swinging for the Fences: The Effects of CEO Stock Options on Company Risk Taking and Performance." *Academy of Management Journal*. 50(5): 1055-1078.
- Squam Lake Working Group on Financial Regulation. 2010. "Regulation of Executive Compensation in Financial Services." Working Paper 8. (<http://www.cfr.org/financial-crises/regulation-executive-compensation-financial-services/p21497>).
- Weller, Christian E. and Luke Reidenbach. 2011. "On Uneven Ground: How Corporate Governance Prioritizes Short-Term Speculative Investments, Impedes Productive Investments, and Jeopardizes Productivity Growth." *Political Economy Research Institute*. Working Paper Series No. 245. (<http://www.peri.umass.edu/236/hash/7c5b4ce1588cf24da8323ee4ebee0ea9/publication/437/>).