"Has the 'Million-Dollar Cap' Affected CEO Pay?" Rose, Nancy L., and Catherine D. Wolfram. American Economic Review, Vol. 90, No. 2 (2000):197-202. http://doi.org/10.1257/aer.90.2.197

Has the "Million-Dollar Cap" Affected CEO Pay?

By NANCY L. ROSE AND CATHERINE WOLFRAM*

High and rising executive pay levels over the past two decades have attracted considerable popular and political hostility. As Michael Jensen and Kevin J. Murphy (1990 p. 227) argue, these forces may constrain compensation practices in "informal and indirect ways." Our earlier work documents the impact of such indirect political constraints on executive compensation in regulated sectors (Paul Joskow et al., 1993, 1996). This study investigates the political use of the corporate tax code to influence executive-pay decisions more broadly. In particular, we analyze the provision of the Omnibus Budget Reconciliation Act of 1993 (OBRA) that eliminated corporate tax deductibility for compensation in excess of $1 million for the CEO and each of the next four highest-paid executives within a firm. Congressional proponents of this legislation argued that this provision would reduce "excessive" CEO pay by raising its cost to the corporation. Exemptions for qualified "performance-based" compensation could have further indirect effects by inducing changes in the structure of executive compensation plans. Given the broad scope for exemptions and the minimal impact that tax deductibility of executive pay typically has on overall corporate profitability, however, the real impact of the tax cap on executive-pay patterns remains an open question. This paper, with Rose and Wolfram (2000), extends analyses by Tod Perry and Marc Zenner (1999) and Brian Hall and Jeffrey Liebman (2000), to provide further evidence on the impact of this legislation on CEO pay.

I. The "Million-Dollar Cap"

OBRA added section 162(m) to the Internal Revenue Code, which limits the corporate tax deduction for compensation paid to the CEO and the next four highest-paid executive officers to $1 million each, effective for compensation paid in tax years beginning on or after 1 January 1994.[1] This cutoff represents roughly the median of total compensation (valuing options at exercise), the 70th percentile of cash compensation, and the 95th percentile of salary over 1991–1993 for the 1,282 firms in our data set.

OBRA provides for several exemptions from the million-dollar limit, most notably for pay that qualifies as "performance-based." Qualification for this exemption requires, *inter alia*, advance shareholder approval of plans that link compensation to specific and objective performance targets and constitution of a compensation committee composed solely of outside directors to oversee compensation plans and to certify performance. The likely effect of these requirements is uncertain. Firms that choose to qualify bonus and long-term incentive plans may have less subjective discretion over *ex post* compensation awards. However, while

[†] *Discussants:* Austan Goolsbee, University of Chicago; George Baker, Harvard University; Kevin F. Hallock, University of Illinois.

* Rose: Department of Economics, Massachusetts Institute of Technology, 50 Memorial Drive, E52-371B, Cambridge, MA 02142-1347, and NBER (e-mail: nrose@mit.edu); Wolfram: Department of Economics, Littauer 209, Harvard University, Cambridge, MA 02138, and NBER. (e-mail: cwolfram@harvard.edu). We thank Kate Meneely, Veronica Weiner, Jessica Wu, and especially Janice Seinfeld for data assistance. Austan Goolsbee provided valuable comments. We are grateful to the National Science Foundation (NSF) and the American Compensation Association (ACA) Emerging Scholar program for financial support. The views expressed are solely the authors' and do not reflect the views of the NSF or the ACA.

[1] Section 162(m) therefore became effective with 1994 pay for firms with a 31 December fiscal-year end, and with fiscal 1995 pay for all other firms. Because our data records year as (fiscal year − 1) for January–May fiscal-year-end firms, the effective date for these firms also is data year 1994.

regulations prohibit firms from paying more than is provided by the shareholder-approved plan, firms may pay less than the plan would generate [IRS ¶9001B, §162-27(e)(2)(iii)]. Some practitioners suggest that this "negative discretion" feature might induce Boards of Directors to select *ex ante* more generous compensation plans in the knowledge that they may scale *ex post* awards down, but not up. Qualification of stock-option plans imposes little constraint on *ex post* option awards. Shareholders must approve just two parameters of the plan to qualify: its overall size (total number of options during plan life) and the maximum (cumulative) limit on options to be awarded to any individual under the plan. Boards can decide individual option awards on an annual basis, and options with exercise prices equal to the current stock price are considered entirely performance-based compensation. This may make options compensation particularly attractive.

These exemptions raise the possibility that section 162(m) may affect the composition as well as the level of executive pay. Salary, which is noncontingent by definition, is subject to the cap unless deferred until the CEO has left the firm. Cash bonuses, stock awards, and stock-option plans each may be structured as incentive plans and qualified for exemption. If the tax cost of paying nondeductible salary exceeds the implicit cost of qualifying performance-based pay, firms may shift from salary to tax-advantaged performance-based pay.

II. Measuring the Effects of Tax-Deductibility Limits

Assessing the effects of section 162(m) requires us to establish an appropriate counterfactual. What would CEO pay have been after OBRA, absent this provision? This is difficult to establish in any policy analysis and is particularly troublesome here. One approach is to use time-series variation in pay patterns to estimate "before and after" effects. This may be misleading. Not only do executive pay patterns change over time for reasons wholly independent of tax policy, but section 162(m) is almost contemporaneous with significant changes in SEC compensation disclosure rules and in personal and corporate tax rates that could independently influence CEO pay (Murphy, 1996; Austan Goolsbee, 2000; Hall and Liebman, 2000).

Alternatively, we can compare compensation patterns at firms that were affected by the cap to those at firms that were unaffected. This is more promising, but it raises the question of how to define "affected" and "unaffected" firms. Defining groups based on observed post-OBRA compensation (e.g., Perry and Zenner, 1999) can lead to distorted estimates. Such definitions are endogenous to current pay levels, leading to potential econometric biases in compensation regressions. Moreover, firms may appear to be unaffected when in fact their lower compensation is a direct result of the tax cap. Characterizing such firms as unaffected could bias results against finding a policy effect.

Our analysis categorizes firms based on *ex ante* expectations of compensation. We construct expected compensation by inflating 1991 cash compensation for the firm to current levels, using aggregate rates of compensation change (see Rose and Wolfram [2000] for details and caveats). Even using an *ex ante* definition of unaffected firms to control for underlying trends may lead to problems if the compensation patterns at these firms are inherently different from those of affected firms, however. This suggests a "differences in differences" approach, in which compensation pre-OBRA is used to establish a base relationship between the two groups, and section 162(m) effects are inferred from later changes in that relation. This requires sufficient data pre-OBRA to establish the base and implicitly assumes that the pay relation across the two groups is stable over time apart from section 162(m) effects. Unfortunately, relatively few salary and options compensation data are available prior to 1994, limiting the use of this approach.

Firms differ not only in whether their expected or "notional" pay was likely to exceed the cap, but also in their responses to potential section 162(m) exemptions. There is considerable heterogeneity across firms in decisions to qualify bonus, long-term incentive, or stock-options plans for section 162(m) exemption. For example, of the 1,059 firms for which we have qualification data from Executive Compensation Reports, the proportion qualifying compensation plans by 1997 was 40 percent for bonus plans, 20 percent for long-term incentive plans,

and 76 percent for stock-option plans. Many firms that were unlikely to be affected by the cap nonetheless qualified some part of their executive compensation, and some firms likely to be affected by the cap declined to qualify any or all of their compensation for section 162(m) exemption. As noted earlier, qualification may alter pay structure independent of any level effects at qualifying firms. To test this hypothesis, we compare compensation across qualifying and nonqualifying firms, treating qualification decisions as given. We consider qualification endogeneity in Rose and Wolfram (2000).

III. Empirical Evidence

The rhetoric surrounding section 162(m) suggests that its main target was "excessive" executive compensation. Table 1 explores whether its implementation slowed the growth of various forms of CEO pay over time or across groups of firms. Rows 1–3 report 1986–1990 data for a sample of firms drawn from the *Forbes* annual surveys of CEO compensation. CASH compensation (salary and bonus) and EX POST TOTAL compensation (valuing options if and when they are exercised) are available for this time period. The remaining rows are based on Execucomp data for 1992–1997. This database has more comprehensive firm coverage and a broader set of compensation measures, including SALARY and EX ANTE TOTAL pay (including Black-Scholes option values at grant date), than the *Forbes* survey data.

The simple time-series comparison of growth rates is mixed. All compensation measures except EX ANTE TOTAL have lower post-OBRA mean growth rates in the Execucomp sample; interperiod differences are significant at the 0.10 level or better for all measures except EX POST TOTAL. However, for CASH and EX POST TOTAL, which are available throughout the period, the later Execucomp growth rates are similar to earlier *Forbes* growth rates. This suggests caution in attributing 1994–1997 differences to section 162(m).

For both the 1986–1990 and the 1994–1997 periods, we divide our sample into affected and unaffected firms, based on whether their predicted CEO CASH compensation is above or below $1 million in a given year. For every measure except SALARY, post-OBRA mean growth rates were higher for affected firms than for unaffected firms, but the differences were not statistically significant, nor did the pattern differ substantially from the 1986–1990 pattern across the two types of firms. The patterns across affected and unaffected firms in SALARY growth rates suggests that those firms more likely to hit the tax cap have slower SALARY growth rates, significant at the 1-percent level. This is broadly similar to SALARY results reported by Hall and Liebman (2000), although their use of lagged actual compensation to define affected firms makes it difficult to discern the extent to which their estimated slower growth is due to mean reversion. Unfortunately, SALARY growth rates can be constructed only after 1991, so it is difficult to provide a meaningful "differences in differences" test for this measure.

Figure 1 provides another perspective on SALARY compensation. It plots kernel density estimates of the empirical SALARY distribution before the tax change (1991–1992) and following its implementation (1995–1997). CEO salaries are concentrated in a range from $100,000 to $1.1 million, with a long thin tail of higher salaries out to about $3.8 million. Both

TABLE 1—MEAN ANNUAL GROWTH RATES IN SAME-CEO COMPENSATION

Compensation measure	SALARY	CASH	EX ANTE TOTAL	EX POST TOTAL
Pre-OBRA:				
1986–1990 (n = 998)		0.134		0.481
UNAFFECTED		0.133		0.412
AFFECTED		0.134		0.541
1992–1993 (n = 620–1,635)	0.112	0.198	0.291	0.726
Post-OBRA:				
1994–1997 (n = 2,977)	0.077	0.143	0.418	0.593
UNAFFECTED	0.085	0.136	0.410	0.532
AFFECTED	0.071	0.149	0.426	0.650

Notes: 1986–1990 data are from *Forbes;* 1992–1997 data are from Execucomp. See Rose and Wolfram (2000) for details of data construction. AFFECTED = 1 in years that the firm's predicted CASH compensation is greater or equal to $1 million.

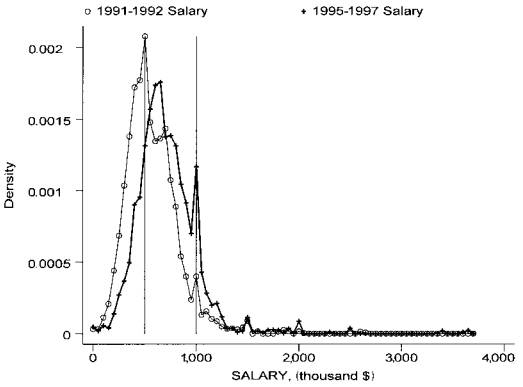

FIGURE 1. SALARY DISTRIBUTION, 1991–1992 VERSUS 1995–1997

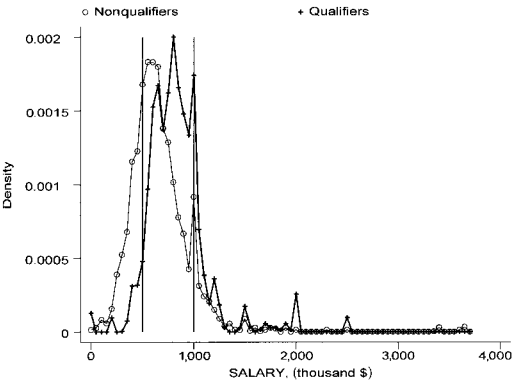

FIGURE 2. SALARY DISTRIBUTION, 1995–1997, BY QUALIFICATION STATUS

periods exhibit massing at certain focal points (e.g., $400,000, $500,000, $700,000), suggesting a tendency to set salaries at "round" numbers. The $1 million mark seems to be one of those focal points in the 1991–1992 salary distribution, albeit not a particularly common one.

As expected given generally rising nominal compensation levels over time, the 1995–1997 distribution tends to be shifted to the right, toward higher salary levels, relative to the earlier distribution. The degree of the rightward shift does not seem uniform across the distribution, however. Importantly, the peak at $1 million in 1991–1992 does not appear to shift right in the 1995–1997 distribution, but is instead amplified in 1995–1997. The density at this point in 1995–1997 is nearly two-thirds the density at the mode, substantially higher than it was in 1991–1992. This suggests that a $1 million salary has become more focal post-OBRA, perhaps because corporations with notional salaries within range of $1 million have been induced by either political or tax costs to maintain salaries within the million-dollar cap. This interpretation is consistent with the evidence in Table 1 that CEO's of companies affected by OBRA limits experienced lower salary growth than CEO's of unaffected firms. It is also consistent with finer cuts of our data that suggest that both mean and median salary growth rates are lowest for executives who were at salaries of $1 million in the post-OBRA period.

To explore this effect further, we divided the sample into firms that had qualified their bonus plans for section 162(m) exemption by 1995 ("qualifiers"), and those that had not. For firms with qualified compensation plans, bonus payments may continue to be deducted as a corporate tax expense, even if they lead to compensation above the $1 million cap. Regardless of their qualification status, however, firms can never deduct *salary* in excess of $1 million. The 1991–1992 SALARY distributions are quite similar across the two groups, though the distribution for qualifiers seems shifted slightly to the right relative to that for nonqualifiers.[2] The 1995–1997 distributions, however, differ substantially, as seen in Figure 2.

The most dramatic difference in the distributions is the substantial massing between $600,000 and $1 million, inclusively, for the qualified group. While the salary spike at $1 million is higher for both groups of firms after OBRA than before (as in Fig. 1), the $1 million spike post-OBRA is nearly equal to the height of the mode for the qualified group. This suggests that qualification is associated with substantial salary compression around $1 million. We have explored similar "before and after" plots for CASH compensation, which includes both SALARY and BONUS. In general, CASH compensation varies more across firms than does SALARY compensation, and its distribution is flatter and much less smooth than the

[2] The mode for both groups is $500,000. The secondary and tertiary peaks at $400,000 and $700,000 for nonqualifiers are the tertiary and secondary peaks, respectively, for the qualifiers. The mass at $1 million is slightly larger for the qualified group.

SALARY distribution. This flattening of the distribution is particularly pronounced for qualifiers, relative to nonqualifiers, in 1995–1997. This effect, combined with the SALARY compression around $1 million, is consistent with greater heterogeneity in bonus payments across qualified firms, as might be expected if they were in fact more reliant upon performance-based bonus schemes.

Table 2 reports regression results for 1994–1997 compensation levels (CASH and EX ANTE TOTAL) and the fraction of compensation accounted for by potentially qualified compensation (BONUS/CASH and Black-Scholes OPTIONS GRANTS/EX ANTE TOTAL). These variables are modeled as a function of whether we predict that the firm will be affected by the section 162(m) cap (AFFECTED) and of its qualification status (QUALIFIED). The results in the first two columns suggest no systematic effect of section 162(m) on compensation levels, although the relatively large standard errors preclude definitive conclusions. This is consistent with the simple growth rate results for CASH and total compensation in Table 1, and with possible section 162(m) reductions in SALARY being offset by greater performance-based pay.

For the composition equations [columns (3) and (4)], the small and insignificant coefficients on AFFECTED suggests that firms do not change their compensation mix simply because they are affected by the $1 million tax cap. The results do indicate some correlation of qualification decisions and compensation changes, however. For EX ANTE TOTAL compensation in column (4), qualification of stock plans is associated with greater use of options in total compensation. There is no differential impact of being above or below the cap. A more interesting pattern emerges in column (3), which provides some evidence of possible SALARY offset by bonus compensation. The fraction of CASH compensation accounted for by bonus payments, which has a sample mean of about 0.41, varies with qualification status, although the impact appears to depend on whether the firm is likely to be above or below the million-dollar cap. The results in column (3) suggest that firms that qualify their bonus plans even though they are not above the $1 million cap reduce bonuses as a fraction of cash compensation. Firms that are above the cap rely more heavily on bonuses (the sum of the last two coefficients in column (3) is statistically significantly positive). These results reinforce the suggestion in the kernel-density estimates of greater heterogeneity in bonus payments for qualifiers. Potential endogeneity of qualification decisions precludes a causal interpretation at this stage, however.

TABLE 2—1994–1997 COMPENSATION REGRESSIONS BY FIRM TYPE ($N = 2,872$)

Firm type	Log (CASH) (1)	Log (EX ANTE TOTAL) (2)	BONUS/ CASH (3)	OPTION GRANTS/EX ANTE TOTAL (4)
AFFECTED	−0.004	0.024	−0.007	0.008
	(0.028)	(0.058)	(0.014)	(0.023)
QUALIFIED	−0.052	0.069	−0.038	0.054
	(0.037)	(0.057)	(0.019)	(0.023)
QUALIFIED × AFFECTED	0.071	−0.071	0.063	−0.012
	(0.040)	(0.062)	(0.021)	(0.024)
R^2:	0.844	0.680	0.648	0.349

Notes: Robust standard errors are reported in parentheses. Regressions include controls for log(firm sales), shareholder return, return on assets, and firm- and year-fixed effects. QUALIFIED = 1 in years when the firm qualified for section 162(m) exemption for either (i) its bonus plan (CASH specifications) or (ii) its stock options plan (EX ANTE TOTAL specifications).

IV. Conclusions

The evidence in this paper suggests that OBRA's limit on the deductibility of executive pay has led firms near the $1 million cap to restrain their salary increases, and perhaps to increase the performance components of their pay packages. Effects on the overall level of executive pay are less clear, casting doubt on the legislation's efficacy in constraining CEO pay. We are currently working to develop empirical models with a richer set of control variables than those considered here to explore further these effects, and to investigate the determinants and consequences of firms' qualification decisions.

REFERENCES

Goolsbee, Austan. "What Happens When You Tax the Rich? Evidence from Executive

Compensation." *Journal of Political Economy*, April 2000, *108*(2), pp. 352–78.

Hall, Brian and Liebman, Jeffrey. "The Taxation of Executive Compensation," in James Poterba, ed., *Tax policy and the economy*, Vol. 14. Cambridge, MA: MIT Press, 2000 (forthcoming).

Jensen, Michael and Murphy, Kevin J. "Performance Pay and Top-Management Incentives." *Journal of Political Economy*, April 1990, *98*(2), pp. 225–64.

Joskow, Paul L.; Rose, Nancy L. and Shepard, Andrea. "Regulatory Constraints on CEO Compensation." *Brookings Papers on Economics Activity: Microeconomics*, 1993, (1), pp. 1–58.

Joskow, Paul L.; Rose, Nancy L. and Wolfram, Catherine D. "Political Constraints on Executive Compensation: Evidence from the Electric Utility Industry." *Rand Journal of Economics*, Spring 1996, *27*(2), pp. 165–82.

Murphy, Kevin J. "Reporting Choice and the 1992 Proxy Disclosure Rules." *Journal of Accounting, Auditing and Finance*, Summer 1996, *11*(3), pp. 497–515.

Perry, Tod and Zenner, Marc. "Pay for Performance? Government Regulation and the Structure of Compensation Contracts." Mimeo, University of North Carolina, 1999.

Rose, Nancy and Wolfram, Catherine. "Regulating Executive Pay: Using the Tax Code To Influence CEO Compensation." Mimeo, Massachusetts Institute of Technology, 2000.