NBER WORKING PAPER SERIES

WHAT DO FIRMS DO WITH CASH WINDFALLS?

Olivier J. Blanchard

Florencio López-de-Silanes

Andrei Shleifer

Working Paper No. 4258

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
January 1993

We are grateful to Sanjay Bhagat for some data, to Winston Lin for research assistance, to Joetta Forsyth, Paul Gompers, Anil Kashyap, and David Scharfstein for helpful comments, and to the NSF for financial support of this research. This paper is part of NBER's research program in Corporate Finance. Any opinions expressed are those of the authors and not those of the National Bureau of Economic Research.

NBER Working Paper #4258
January 1993

WHAT DO FIRMS DO WITH CASH WINDFALLS?

ABSTRACT

Suppose that a firm receives a cash windfall which does not change its investment opportunity set, or equivalently its marginal Tobin's Q. What will this firm do with the money? We provide empirical answers to this question using a sample of firms with such windfalls in the form of a won or settled lawsuit. We examine a variety of decisions of the firm to shed light on alternative theories of corporate financing and investment. Our evidence is broadly inconsistent with the perfect capital markets model. The results need to be stretched considerably to fit the asymmetric information model in which managers act in the interest of shareholders. The evidence supports the agency model of managerial behavior, in which managers try to ensure the long run survival and independence of the firms with themselves at the helm.

Olivier J. Blanchard
Department of Economics
M.I.T.
50 Memorial Drive
Cambridge MA, 02139
and NBER

Andrei Shleifer
Harvard University
Department of Economics
Littauer Center 315
Cambridge, MA 02138
and NBER

Florencio López-de-Silanes
Department of Economics
Harvard University
Littauer Center 200
Cambridge, MA 02138

I. Introduction

Suppose that a firm receives a cash windfall in the form of a won or settled lawsuit. Suppose also that this windfall does not change the investment opportunity set of the firm, or equivalently its marginal Tobin's Q. What will this firm do with the money? Will it invest it? If so, will it stay in its own line of business or diversify? Will it keep the money inside the firm as cash? Or will it return the money to investors, by reducing debt, raising dividends, or repurchasing shares? Or, alternatively, will this firm try to raise even more cash, by increasing debt or selling divisions? Will this firm increase executive compensation? In this paper, we provide empirical answers to these questions using a sample of 11 firms that won lawsuits that gave them cash but did not change their investment opportunities. Our answers might be interesting from the descriptive viewpoint, but might also shed some light on several theories of corporate financing and investment decisions.

In a perfect capital market, it is very clear what this firm should do with the cash windfall. The firm should not increase investment when investment opportunities have not changed. There is no reason for this firm to diversify, either. In a tax-free world, it does not matter whether the firms retains the cash, returns it to investors by cutting debt or raising dividends, or raises even more cash. In that world, there is no difference between money inside and outside the firm. To the extent that money inside the firm is tax disadvantaged, it should return the windfall to investors by reducing debt or repurchasing shares. Even with taxes, this firm should not raise even more funds. Finally, the firm should not give any of the windfall to the managers, since their marginal products did not change.

When capital markets are not perfect, cash inside the firm and cash outside the firm are no longer the same. First, investors might not have as much information about the firm as its managers do. In this case, even though managers act in the interest of shareholders, investors hesitate to give this firm money for fear of overpaying for its securities. These investors typically ration capital to the firm, and it has to forego some positive net present value projects (Myers and Majluf

1983, Greenwald, Stiglitz, Weiss 1984). Getting a cash windfall might enable such a firm to do projects that it could not do otherwise.

Second, managers might have their own objectives that do not coincide with those of shareholders, and in particular sometimes wish to invest in negative net present value projects. To prevent such managers from making bad investments, investors sometimes ration capital to these firms (Jensen 1986, Stulz 1990, Hart and Moore 1989). With agency problems as well, a cash windfall presents managers with opportunities not available before, and hence the choice of what do to with the money is more complicated than in the perfect capital markets model.

We will look at a variety of decisions of the firms in our sample to examine both the perfect capital markets model and these two alternatives. We try to go beyond two interesting recent studies that focused only on investment. Fazzari, Hubbard and Petersen (1984) looked at non-dividend paying firms and found that their investment is more sensitive to cash flows than that of dividend paying firms. This result suggested that some firms are indeed rationed in the capital market. Hoshi, Kashyap and Scharfstein (1991) found that Japanese firms without a close relationship with a bank, which may be more capital rationed, exhibit greater sensitivity of investment to cash flows than firms with a close banking relationship. Our paper, like theirs, will examine the null hypothesis of perfect capital markets. But we will also look at variables other than investment to shed more light on the alternatives to the perfect capital markets model.

The next section discusses the theoretical underpinnings of our paper in more detail. Section III then describes our data and shows that, in our sample, the investment opportunity set indeed does not change when firms win lawsuits. Section IV looks at the various changes experienced by firms that won lawsuits. Section V concludes. Finally, the paper contains an essential Appendix that presents a more detailed story of each firm in the sample.

II. Theoretical issues.

Suppose that a firm gets a helicopter drop of cash. We are sure that this

firm does not at the same time experience a change in its investment opportunity set. What will the firm do with the money? We have already discussed what this firm would do in a perfect capital market. In this section, we discuss in more details the two alternatives: the asymmetric information model and the agency model. Rather than just focus on investment, we also examine the implications of these models for acquisitions and divestitures, dividend policy, capital structure, and managerial compensation.

Asymmetric Information

The asymmetric information model, due to Myers and Majluf (1983) and Greenwald, Stiglitz and Weiss (1984), assumes that managers act in the interest of shareholders. Nonetheless, firms might be rationed in the capital market because potential investors do not know the quality of the firm's investment projects and fear to overpay for its securities. A firm in this model is capital rationed if it has investment projects which it would be able to profitably finance if information were perfect, but which it cannot profitably finance at the terms offered in the marketplace given information asymmetries. In discussing the effect of a cash windfall on a firm in such a model, we must distinguish between three types of firms. First, firms might be capital rationed both before and after the windfall. Second, firms might be capital rationed before the windfall, but not after. Third, firms might be not rationed both before and after the windfall. The decisions of each type of firm after the windfall will be different.

The firm that is capital rationed both before and after the windfall should invest all of the windfall to take advantage of its positive net present value projects. This firm should not return the money to investors since it can put it to good use. Hence it should not raise dividends or repay debt. This firm might in fact raise more debt if the cash windfall alleviates information asymmetries and enables the firm to raise new capital on better terms. The proceeds from the new security issues should be devoted to investment.

One issue that arises in testing these theoretical arguments empirically is

what counts as positive NPV projects that the firm could not previously undertake. While theoretical models are silent on this issue, one typically thinks of investment as acquisition of new capital in the firm's own line of business. In particular, diversification is usually not viewed as such rationed investment, since there is strong evidence that diversification is at best a zero, and more probably a negative, net present value investment in the 1980s, which is when our data come from (see Morck, Shleifer and Vishny 1990, Kaplan and Weisbach 1992). In contrast, the foregone investments in asymmetric information models are all positive net present value. We will follow this empirical consensus in viewing diversification as opposed to investment in own lines of business as evidence against capital rationing. Thus, the firms that are rationed both before and after the cash windfall should not diversify.

One other form of "investment" decision important for analyzing the data is divestitures. Divestiture is an investment in restructuring the firm and reorienting its operations. As our and much other evidence indicates, divestiture is very expensive as it involves charges for plant closings, severance pay etc as well as large accounting charges if the assets of the firm have to be written down. A credit constrained firm might thus be unable to afford divestitures for two reasons. First, it might not have the cash to pay the out-of-pocket costs of divestitures. Second, its fear of the stock market reaction or of violating bond covenants might keep the firm from taking an accounting hit. When the firm gets a cash windfall, it might become able to make this "investment" in restructuring both because it has the necessary cash and because it can afford some accounting losses. We will therefore view divestitures and plant closings as positive NPV investments like other investments in own lines of business and unlike diversification. We would then predict that firms rationed before and after the windfall might spend some of the windfall on plant closings and divestitures. In viewing closings and divestitures as positive NPV investments we bias our interpretation of the evidence against the agency model, in which these actions might reflect managerial efforts to increase the free cash flow of the firm.

The second category of firms, namely those that were rationed before but not after the windfall, should invest less than 100 percent in its own business. This investment, as before, might be in new capital or in restructuring and plant closing. The interesting question is what it should do with the rest. Assuming that there is no tax reason to keep the money inside the firm, the first order effect is for this firm to return the money to investors. It can do so through a dividend increase, a debt reduction, or a share repurchase. Since, the firm has nothing to do with the money, it might as well let the investors have it. There is, however, a second order caveat. Even if the firm has no positive NPV projects today, it might have them in the future. Since raising capital in the future will be costly, the firm might want to store some of the excess capital until it needs it. The most natural way for the firm to do it is to hold capital in securities, since these are zero net present value investments. However, one might also argue that this firm will store capital by diversifying so that it can use the cash flow or perhaps even proceeds from future sales of acquired divisions to invest in the future. We do not find this argument for diversification convincing, since, as we already mentioned, diversification is typically a negative NPV project and holding securities is a zero NPV project. Nonetheless, we will consider diversification as a strategy for "storing" capital.

A final category of firms were not capital rationed either before or after the cash windfall. These firms should not invest any of the proceeds in their own business, since they have no good projects that they were not doing already. As a first order effect, these firms should return all of the windfall to investors through a debt reduction, a dividend increase, or a share repurchase. For these firms, the case for storing some of the wealth in case they are rationed in the future is weaker than for the second category of firms, since they are even further away from being rationed than before the windfall. Nonetheless, one might expect that less than 100 percent of the windfall is returned to investors, and a small fraction is kept in securities or perhaps even used for diversification.

The final question concerning these models is what should happen to executive compensation? On a literal interpretation of these models, namely that

managers act in the interest of shareholders, none of the cash windfall should go to the managers, since there is no new information about their productivity, and shareholders do not need to make any incentive payments to them either. A less literal interpretation of these models allows some room for ex post incentive pay for the managers, since they have exerted effort to win the lawsuit. This argument is more in the spirit of agency than of asymmetric information models, since it assumes the need to motivate the managers to act in the interest of shareholders (Fama 1980). We find the argument that managers should get some of lawsuit winnings implausible, since lawsuits are fought and won by law firms, not managers. However, some readers will undoubtedly find this ex post settling up argument compelling.

The Agency Model

Any model is which managers have objectives different from those of shareholders is an agency model. In practice, agency models are more specialized and do not deal with all the variables we examine in this paper. Accordingly, we use informal agency analysis along the lines of Jensen (1986). We will assume that managers pursue the objective of ensuring the survival of their firms under their own continued control. Put differently, managers want to make sure that their firms generate free cash flow in the future, and hence do not have to face bankruptcy, takeovers, or interference from lenders. The future independence enables managers to enjoy the so-called "benefits of control." This objective need not coincide with value maximization, since managers pursuing survival of the firm would generally try to keep resources inside the firm and use them to generate future cash flow even when it is optimal to distribute these resources to investors and run a "lean and mean" operation. In agency models, the disciplinary mechanisms that reduce managerial discretion, such as debt, takeovers, and boards of directors, are of limited effectiveness and allow managers to enjoy much discretion.

Agency models, like asymmetric information models, often exhibit credit rationing (Hart and Moore 1989, Stulz 1990). The reason is that investors often

limit the funds they make available to the managers, since the managers are likely to invest these funds in negative NPV projects. Because agency models exhibit credit rationing, they share some of the predictions with the asymmetric information models. The key distinction between the predictions of the two models is that when firms are not credit rationed, the asymmetric information model predicts that they will return funds to investors, whereas the agency model predicts that they will keep them inside the firm and spend as much money as they can get away with.

The agency model predicts that, to the extent the firm has some internal investment opportunities, even if they are negative NPV, it will reinvest the proceeds of the windfall. As before, we will count restructuring old operations and divestitures as part of such investment. Even if the internal opportunities are terrible, the firm would still try to reinvest the funds, but it would reinvest them in diversification. Diversification can reduce the likelihood of future liquidation since it provides the firm with cash flows in states of the world where the firm might be liquidated otherwise. Diversification might more generally reduce "diversifiable" managerial risk, even if shareholders do not care about this risk. In addition, by diversifying rather than holding cash, managers can make the firm a less attractive target to future potential acquirers and liquidators, since divisions might be much less liquid or manageable to those acquirers than cash in hand. We should stress that negative NPV diversification is much more central to agency than to asymmetric information models. In the latter, diversification is an intermediate step to assure future cash flows for good future investments. It will be preferred to holding cash only under some fairly contrived circumstances. In agency models, in contrast, diversification is a first order objective of the managers intent on keeping the firm intact and enjoying the benefits of control. Holding cash will not accomplish this objective as effectively.

With respect to financial policy, the model also has some strong implications different from those of the asymmetric information model. Most importantly, the model predicts that even if firms are not credit rationed, they would still not use the windfall to pay dividends or repurchase shares from all shareholders as long as they

can get away with this without being taken over. The agency model also predicts that share repurchases that do take place should be targeted repurchases from large shareholders or the management, rather than market repurchases from anonymous shareholders. In agency models, management only responds to threats to its control, and hence might take action to placate/ buy out core investors even if it does nothing for shareholders in general. In contrast, the asymmetric information model predicts open market rather than targeted share repurchases since managers serve all shareholders.

The prediction of the agency model for long term debt is ambiguous. Managers may use cash to pay off some of the debt to reduce the likelihood of future interference by the lenders in financial distress. Less debt means more discretion for the managers. Alternatively, managers may use their greater debt capacity after the windfall to raise even more debt and reinvest the proceeds so as to expand the domain of their control. Despite these ambiguities, the information on long term debt may help distinguish the asymmetric information and agency models. Specifically, if firms do not have attractive investment opportunities, the former model unambiguously predicts that debt should not rise, whereas in the latter debt might increase.

A final differential prediction of the two models concerns executive compensation. There are two distinct agency views of executive compensation. The first view says that managers are provided with incentives to act in the interest of shareholders. One form these incentives can take is ex post settling up (Fama 1980), whereby managers get a prize if they had done something good for the shareholders. We do not find this model plausible for the case of lawsuits, since managers' role in those is rather limited. Another agency view of compensation is that managers grab whatever profits they can get away with, and winning a lawsuit presents them with an opportunity to get a large chunk of money without being taken over or sued by the shareholders for violations of fiduciary duty. As a result, managers try to get a large chunk of the windfall. This prediction is sharply different from that of the asymmetric information model, in which managers already act in the interest of

shareholders and hence, as long as there is no news about their productivity, should not get any of the cash windfall.

III. The data.

This paper examines a sample of 11 firms that won substantial settlements in lawsuits not affecting their marginal Qs. To begin, we checked the Wall Street Journal Index (1980-1986) under "Antitrust News," "Patents," and "Suits," and the New York Times Index (1980-1986) under "Suits," to come up with a sample of 110 companies that won or lost awards.

We narrowed this sample using three criteria. First and most important, the litigation could not have been connected to the marginal Q of the firm. This judgement was made using the description of the nature of litigation, the form of the award, and the 10-K forms describing the nature of the current business of the firm. We rejected cases in which 1) products were still being produced, 2) the litigation opened new market opportunities, 3) the litigation restrained active competitors, 4) the litigation pertained to asset or royalties disputes, 4) the suit concerned share purchases or takeovers, 6) the settlements consisted of asset or equity awards rather than cash, 7) the settlement was undisclosed or details were not revealed in 10-K forms. We were very tough on this criterion and narrowed the sample to 34 firms. In general, the litigation in the sample concerned products no longer produced and contracts already expired.

Second, we insisted that the award be significant so that we could detect an impact on the firm's behavior. To impose this criterion, we calculated the net present value of the award by subtracting from the "gross award" all legal fees, related expenses (during the trial, fees to third parties, and rights sale), payments due to other parties, and taxes. In the case of payments in the form of installments over several years, we calculated the net present value of these amounts using the current Prime rate at the time of the award. In these instances, the company usually sold the "collection rights", and therefore also reported similar net present value calculations using the Prime rate. We called the final amount "Net Award" (or

NPVA) and restricted the sample so that this value be larger than or very close to the Average Net Operating Income for the three years prior to the award. This restriction narrowed the sample to 18 observations.

Finally, we insisted on the availability of 10-K forms and Proxy statements for the period of analysis involving 5 years before and 5 years after the award. This restriction plus the fact that this paper analyses only award winners gave us the final sample of 11 observations.

Table 1 summarizes the characteristics of the awards in this sample. The table also provides our reasons for concluding that marginal Q is not affected by the award. In general, there are two broad reasons in this sample why marginal Q does not change: the litigation concerns past events which no longer affect operations or it concerns products already discontinued at the time of the award. More specifically, we have three types of cases: unmet contracts, antitrust suits, and patent violations. We have 3 examples where contracts were not met or the defendant violated a court order. These breach of contract cases (UNC, Howell, and Pennzoil) were filed for punitive damages and did not involve actual delivery of merchandise or assets that could improve production possibilities. Another 5 cases concerned unfair market practices that no longer continued at the time of the event. These antitrust suits include accusations of monopolizing trade (Diversified and San Bar) and unfair market strategies by the defendant toward the plaintiff (Conrac, DASA and Berkey). In fact, 4 out of these 5 cases were against AT&T for monopolizing particular segments of the telecommunications market and preventing the plaintiff from competing in these segments. In 3 out of these 5 antitrust suits the products were not produced anymore, in another it was a minor fraction of the plaintiff's output, and in the fifth the defendant has already left the market segment. Finally, the last 3 cases were instances of patent violations and concerned products discontinued at the time of the award. In all the 11 cases, then, we are reasonably confident that the marginal Q did not change.

Table 2 provides the evidence that the size of the award is indeed large for these firms. In all but two cases, the net present value of the award exceeds average

income over the past two years. The median ratio of the net present value of the award to sales is .11 and that to assets is .22. Table 2 also shows that, for the median firm, legal fees absorbed 14 percent of the award, so there was still plenty left for the winning firm to spend. The two largest percentages were arrangements before the suit for a fixed percentage amount and in both cases the law firm was found to be connected to or partially owned by one of the directors of the plaintiff firm. There is no clear connection between the length of the litigation and the percent going to the lawyers. In fact, the two shortest lawsuits (1 year) represent two extremes of the payments to the lawyers. The only difference between the two cases is that the higher rate was agreed on beforehand and involved a law firm related to one of the directors of the plaintiff.

Starting in Table 2, we roughly order the eleven firms from those that are in significant trouble to those that do not appear to be in such trouble. The strategy for this rough classification is partly the objective financial conditions of the firms, such as loss making, and partly self-reported status in annual reports. Except for "Diversified," which is making losses but is recovering and reporting adequate funds for its operations, the ordering is straightforward. The theoretical distinction between more and less troubled firms is less clear, however. Troubled firms may be closer to real insolvency (economic distress), and they are also clearly less liquid. They thus appear to be more severely rationed on the capital market, although they may not have any positive NPV projects to undertake. Despite this ambiguity, the distinction between troubled and healthy firms is useful for some purposes.

Table 3 provides more formal information on financial condition, investment opportunities, and actual pre-award investment of sample firms. The table shows that firms in this sample are generally unprofitable, with the maximum ratio of income to sales of .08. The evidence on average Tobin's Q's for sample firms suggests that their investment opportunities are poor. With the noticeable exception of DASA, which is a bizarre firm that has virtually no assets of its own (see Table 2), firms in this sample have very low Qs. The median Q is .52 for the sample, .30 for the troubled firms, and .55 for the healthy firms. Almost none the firms in our

sample, including the healthy ones, should invest in their own operations. Instead, they should return the cash windfall to the shareholders.

This result is even stronger once we realize that the estimates of Q are exaggerated by two factors. First, in many cases, the award is anticipated. The anticipated part of the award enters the market valuation of the firm, and hence the numerator of Q, but does not enter the book value of assets, which is the denominator. For example, it was quite obvious for some time before Pennzoil won its award from Texaco that some substantial settlement will be coming. To estimate an upper bound on this bias, we can assume that the award is fully anticipated by the market. The relevant Q for the firm, then, is its Tobin's Q less the ratio of the net present value of the award to the book value of assets, which we call Q(-) in Table 3. The median value of Q(-) in the sample is only .35, pointing to substantially less attractive investment opportunities than even those indicated by raw Tobin's Q.

The second source of upward bias is that many of our firms are experiencing financial and economic difficulties (as their Q's indicate), and hence the market value of their debt, entering the numerator of Q, may be substantially below the book value.

The pre-award gross investment numbers presented in Table 3 are roughly consistent with the Tobin's Qs. The median investment rate of firms in this sample is a low .06 of assets, and it is even lower at the median for troubled than for healthy firms (.055 vs .086). Prior to the award, the firms in this sample are not investing a lot in their own lines of business.

In summary, we have a sample of 11 firms that have received very substantial cash windfalls that did not affect their investment opportunity sets. None of these firms appear to be extremely profitable. In fact, most of them have extremely low Tobin's Qs, which suggest that they do not have attractive investment opportunities. Consistent with their Q's, these firms appear to be investing very little prior to the award. We are now ready to address the main question of this paper: what do these firms do with the cash windfall?

IV. Analysis of the Changes.

Before presenting the evidence, it is useful to clarify the predictions of the alternative theories in light of the conclusion of the previous section that firms in our sample do not have attractive investment opportunities. Table 4 summarizes these predictions. The general prediction is that, if managers of these firms act in the interest of shareholders, they should return the cash windfall to them since these firms do not have good investment opportunities. Under both the perfect markets theory and the asymmetric information theory, investment should not change, dividends should rise and debt should fall. The asymmetric information theory might also predict a small increase in diversification to provide cash for possible future investments if opportunities improve, and an increase in divestitures. The agency, theory, in contrast, assumes that managers do not act in the interest of shareholders, and hence predicts that they will keep the money inside the firm even in the absence of attractive investment opportunities. Hence investment should rise only slightly since even selfish managers do not want to simply waste the money, but diversification (as well as divestiture) should rise a lot more. Dividends should not rise and long term debt should rise as managers use the collateral from the windfall to borrow and expand more. Finally, the agency theory predicts that managers should divert a substantial fraction of the cash windfall to themselves, unlike the managers in the two other models. The evidence presented below provides strong support for the agency theory relative to the other two theories.

Investment

Table 5 presents results on changes in gross investment after the award. Two interesting findings emerge. First, the median troubled firm spends about 0 percent of its award (and assets) on incremental new investment in the first two years after the settlement. Actually, 2 of the 4 firms in this group invest less after the award than in the two years prior to it. Second, the healthier firms spend only somewhat more on new investment. The median for this subsample is .12 of the award (Jamesbury which started the construction of a new plant for its new products

is an outlier). For the sample as a whole, the median fraction of the award spent on extra investment is .06. These results are broadly consistent with the Tobin's Q evidence that firms in this sample, whether classified as healthy or troubled, do not generally have attractive investment opportunities. The results do not distinguish between the three theories since, on all of them, firms should not be making very negative NPV investments.

Asset Changes

Table 6 presents the results on asset dispositions. Firms raise the pace of retirements and discontinuances of assets after the award compared to the previous two years. Before the award 7 out of 11 firms did not discontinue any assets; after the award only one firm did not. The median fraction of assets discontinued after the award is .04 for the sample, and .30 for troubled firms. Massive asset discontinuance plans include UNC's uranium, mining, offshore products and services segments representing over 65 percent of total assets (some of these companies were bought only 2 years before the award). Pennzoil's Intercorporate Restructuring included discontinuing almost 30% of total assets. Conrac started a restructuring program involving closing and consolidation of production with a cost equivalent to 96% of the net award. DASA and San-Bar also discontinued part of the production and manufacturing activities in the first two years. Award winners obviously undertake a house cleaning when they get the windfall.

The increase in asset discontinuances is broadly consistent with the dismal Tobin's Qs for these firms which should signal that they must disinvest. The puzzle is why these firms delayed the discontinuances until they received the award. The answer seems to be that discontinuing assets is extremely expensive, for several reasons. First, assets are often disposed at a loss. For example, UNC's loss on disposal in the award year (before loss from operations) is 1.02 of the amount of net award. Incurring such as loss without a windfall can lead to violation of debt covenants and more generally bankruptcy. Second, the out-of-pocket cost of asset dispositions is also very high. For example, by the end of the first year after the

award San Bar and Conrac fired 45 and 26 percent of their employees respectively in connection with the asset retirement programs. Doing so required large severance payments and other costs. UNC's costs of environmental cleanup associated with the closing of its mining and uranium operations represented close to 54 percent of the net award and 22 percent of the total assets. The award might have provided the cash to pay for asset retirements and discontinuances. As we suggested in section II, asset discontinuance might be a positive NPV investment for a firm that could not afford it before without going bankrupt.

A second result in Table 6 is a slight decrease in asset sales after the award for all firms, but more markedly for troubled firms which were previously selling assets to meet debt commitments and avoid liquidation. Median asset sales fall from .05 to .03. The results on asset sales and dispositions thus point against the perfect capital markets model, which predicts no change, although they do not distinguish between its alternatives.

The evidence on asset acquisitions in Table 7 sheds further light on these issues. Just as with asset dispositions, firms in this sample sharply raise the pace of asset acquisitions.

We can observe three types of behavior in this respect. A group of 3 companies do not acquire significant assets after the award. Surprisingly, all three of them (San-Bar, Conrac and Jamesbury) merge within 3 years after the award. The other two groups are the remaining troubled and healthy firms, which behave very differently.

Troubled firms make acquisitions only in new lines of business, with a median of .23 of total assets or more than the total amount of the award. These new lines include the "oil wells" and the credit collection business for DASA, formerly a manufacturer of telephone peripheral equipment. UNC acquired a communications carrier and started providing air services such as pilot training and turbine repairs. Berkey engaged in the business of sales promotion for suppliers of consumer goods and services while selling its traditional photofinishing stores.

In contrast, healthy firms acquire primarily in the old lines of business, with

the exception of Diversified Industries which actually diversified by investing in both old and new lines. If we separate out the firms that merged after the award, the other healthy companies acquired assets for between .9 and 4.88 of the net award. In this they matched the troubled firms, although they invested in old rather than new lines of business.

The fact that healthy firms invest in the old lines of business through acquisition might suggest that acquisition is the optimal investment strategy made possible by less severe credit rationing. We are extremely skeptical about this asymmetric information interpretation given the low Tobin's Qs of these "healthy" firms and their low reinvestment in their own business, both of which suggest that they probably should not expand in related businesses either. One could argue that these firms' Qs for related acquisitions are higher than their Q's for internal investment, although the market Tobin's Q should in principle measure the quality of best investments available to the firm. The more natural interpretation of the evidence is that these firms make acquisitions to keep growing even when the best strategy is to pay the cash out.

The diversification strategy of the troubled firms is even more difficult to explain using the asymmetric information model. It is possible that managers diversify solely to smooth earnings so that their firms do not face credit constraints in the future. But how likely is it that their investment opportunities will improve so much given their dismal Tobin's Qs and the fact that they are reinvesting virtually none of the cash windfall in their own business, and if anything are shutting that business down? The more likely value-maximizing strategy for these firms is to liquidate faster. But the managers' preference for the survival of the firm, however, would bring them to diversify simply to assure that the firm continues as an independent entity.

Consistent with this interpretation, the diversifying acquisitions do not appear to be very successful, and many of them are divested within a short time period. Thus DASA divested 2 of its 3 new businesses within 2 years and kept only the "oil wells" (and tried another diversification effort). Diversified made a major

acquisition within 2 years after the award, but put it on the block within 3 years. Pennzoil started two new lines of business after the litigation settlement, but discontinued the major one "Filtration Products," 2 years later at a large cost. Pennzoil's most important expenditure out of the award, the acquisition of shares of Chevron, was done largely for tax reasons, and should probably be viewed as a zero net present value investment if the stock market is efficient. In light of these examples, the agency model seems to us to describe the behavior of both troubled and healthy firms in the most convincing way without resort to second order arguments.

Capital Structure Changes

Table 8 presents some results on changes in long term debt of the firms in the sample. We focus on long term changes in leverage, specifically from the year before to 3 years after the award. Virtually all the firms in the sample have increased their long term debt relative to its level the year before the award. The median debt level increased by .15 of the award, and by .46 of its pre-award level. Since capitalization also increased, however, the median ratio of debt to total capitalization has fallen slightly. The point, however, is that firms borrowed more after getting the cash windfall, rather than return in to the debtholders. Most firms renegotiated their prior debt contracts and opened new lines of credit on more favorable terms. The only exception is Conrac, which continued its pre-award strategy of sharply cutting debt. The year before it was taken over, Conrac's debt fell to 3 percent of total capitalization.

We have argued in section II that the asymmetric information and the agency models can in principle predict the increase in long term debt. However, we also argued that the asymmetric information model would only predict such an increase if the firm has extremely attractive investment opportunities that it borrows more money to undertake. Since firms in our sample do not have such opportunities, according to the asymmetric information model, they should be returning money to investors rather than borrowing more. The agency model, in

contrast, predicts that debt might rise either because managers always will try to expand if they can, and the cash windfall increases their debt capacity, or because investors impose a higher debt on the now cash rich firm. The increase in the long term debt in the absence of attractive investment opportunities thus supports the agency interpretation of the data.

Dividends and Share Repurchases

The results on dividends are very striking as Table 9 shows. None of the troubled firms raised dividends or gave stock dividends connected to the award. This is in sharp contrast to the perfect capital markets model, which would argue that firms should pass on the cash windfall to the shareholders. This is also difficult to square with the asymmetric information model, given that we know from Tobin's Qs that these firms did not have attractive investment opportunities and should have tried to return the money to their shareholders. Nor does it appear that these firms were prevented from paying dividends by debt covenants.

The healthy firms raised dividends, but only by a median of 1 percent within the first four years. Of those that raised dividends, most declared a special dividend or raised dividends within a year of the award. Two firms, Howell and Jamesbury, paid out large percentages of the award to the shareholders. Both of these firms had very large management and family ownership, and hence a large chunk of the dividend payout went directly to controlling shareholders. This evidence suggests that managers do not like to distribute cash to shareholders unless they themselves are major shareholders -- consistent with the agency model.

Stock dividends were not used by troubled firms in this sample, and only 2 healthy firms used them. Conrac declared a 10 percent stock dividend 3 years after the award, which was related to the takeover of the company that year. Bio-Rad is the exception in this sample, with two 50 percent stock dividends within 2 years after the award. This company also had large management and family ownership of common stock, especially of the voting class B shares which are allowed to get dividends only if class A also receives them.

For income tax reasons, firms might want to return cash to the shareholders through share repurchases rather than cash dividends. The evidence in Table 9 suggests that some firms repurchased shares, although by no means the full amount of the award. The median fraction spent on repurchases is .29. However, if we compare repurchases before and after the award, the median incremental repurchases are only .15 of the award.

More interestingly, the repurchases were in general targeted rather than open market. In all the cases of repurchase save Pennzoil, management ownership exceeded 12 percent of the shares, with the median of over 20 percent. In 3 of the healthy firms, large shareholders other than managers were also present the year of the award. Three years later, most of them disappeared from the list of "over 5 percent" shareholders. Howell, for example, repurchased 21 percent of outstanding shares from the daughter and other members of the founder's family. The firm also bought out the 25 percent stake owned by Sharon Steel, the defendant in the litigation. Meanwhile, the CEO (son of the founder) raised his personal stock holdings from 30 to 53 percent of outstanding shares, and became the trustee of 14 percent block bought by ESOP. Some large shareholders of Pennzoil and Bio-Rad also stepped down while the management increased its percentage holding of the company.

Within 3 years of the award, two of the troubled firms also embarked on large stock repurchases, and again from large shareholders rather than in the market. UNC's management acquired Maxxam's 20 percent stake at close to market prices and warrants for another 15 percent of stock in exchange for a 10 year standstill agreement. UNC also bought back the 36 percent block of shares issued to Chevron (the defendant) in connection to its capital infusion accorded in the award. The repurchases were carried out at fixed above market prices. Also 3 years after the award, Berkey repurchased the 16 percent block from its largest shareholder, Nimslo, at above market price. Three months prior to this agreement Nimslo was planning to raise its stake in Berkey to 45 percent, but that plan was invalidated by Berkey's repurchase.

The evidence thus suggests that share repurchases are used not to distribute wealth to all the shareholders, but to eliminate potential competition for control from the large shareholders. This strategy supports the agency model over the asymmetric information model of selfless managers acting in the interest of all shareholders.

Executive Compensation

Perhaps the most striking evidence in this paper is presented in table 10. It shows that a median of 16 percent of the award is given to the top three executives in the form of extra cash compensation over the next 3 years. Some companies also revise their compensation plans and give more stock and option grants to the managers. In fact, the median management ownership rises from 14.5 percent to 16.5 percent after the award.

Consider some examples. DASA promised its CEO 2.5 percent of the award before filing the suit, but the actual cash bonus represented 6.8 percent of the company's share of the net award. Total compensation for the top 4 executives nearly quadrupled that year, but the main prize came as stock options for the group amounting to 25 percent of the outstanding shares before the award. Another firm in the sample, San Bar, was 30 percent owned by the two members of the Hallamore family, acting as the CEO and a Director, before the award. In the year of the settlement the company promised golden parachutes to these two executives, which were exercised the following year as the company merged. UNC's top three executives retired the year of the award and collected special bonuses amounting to 3 percent of the award. Pennzoil's President retired a year before the award, but the company "called him back" while delaying the retirement of the CEO and another director. Right after the award, the "old three" finally retired collecting over 20 million dollars or close to 1 percent of the large award. The conclusion is clear: managers benefit considerably when their firms win a litigation award.

It is hard to see how in an efficient compensation model the managers should receive any of this lump sum windfall. The estimates of their productivity should not change by much. They should also probably get a lower share of the

windfall than of regular profits in an efficient contract, since their efforts are more important for the regular profits. After all, lawyers win courtroom battles and managers win marketplace battles. More plausibly, managers face only limited pressure from shareholders, and hence can redistribute some though not all of the windfall to themselves. This evidence is one of the stronger findings we have in favor of agency model and against the asymmetric information and perfect capital markets models.

V. Conclusion.

This paper has presented a large number of facts about a small sample of firms receiving cash windfalls. This sample turned out to largely contain firms without attractive internal investment opportunities, as evidenced by their low Qs and low investment in their own businesses even after the windfall. Nevertheless, the managers of these firms preferred to keep the cash windfall inside the firm rather than distribute it to investors in the form of dividends, share repurchases or debt reduction. If anything, they typically even increased the debt after the windfall. The two exceptions to that were the increases in targeted share repurchases from blockholders and in executive compensation following the award. The managers used the money they kept inside the firm to discontinue some loss making businesses and then to acquire other firms in either related or an unrelated lines of business. The unrelated acquisitions in particular often failed and were divested in a few years. When managers did not make acquisitions and sat on cash instead, the firms themselves got acquired in a few years.

This evidence is broadly inconsistent with the perfect capital markets model, which predicts that cash flows should be paid out to investors when investment opportunities inside the firm are not attractive. The evidence needs to be stretched considerably to fit the asymmetric information model in which managers act in the interest of shareholders, since that model would also predict substantial payouts unless firms either have or anticipate to have in the near future, attractive investment

opportunities. Keeping cash inside a very low Q firm, using it to diversify, and paying out cash only to managers and large blockholders are hard to reconcile with the asymmetric information model. The evidence supports the agency model of managerial behavior, in which managers try to ensure the long run survival and independence of their firms with themselves at the helm by keeping the resources inside and investing them in unattractive projects just to avoid giving up cash or having an outsider lay a claim on it. The preference for independence explains the evidence most parsimoniously.

In fact, one finding that we did not at all anticipate offers an interesting angle on the agency model. That is the finding that firms which sat on the cash and did not waste it themselves were acquired within a few years. This finding suggests that the only equilibrium strategy for managerial firms is to waste the cash, for if they do not, another managerial firm will buy them and waste the cash for them. Diversification makes the firm less attractive to these acquirers than holding cash, and hence enables it to stay independent (see Shleifer and Vishny 1990 for a model along these lines). In a market where managerial firms make acquisitions, the right strategy is to avoid being attractive to them, even if that means wasting money yourself. This finding also bears on the traditional interpretation of takeovers (Jensen 1986), in which takeovers cure agency problems inside firms. Here takeovers by bad acquirers make agency problems worse, since fear of takeovers by acquirers who themselves will waste money prompts managers that might otherwise act in the interest of shareholders to themselves waste money. It remains to be seen how big a problem this fear of takeovers might present.

Finally, our results bear on the earlier event study evidence on interfirm litigation (Bhagat, Brickley and Coles 1991, Cutler and Summers 1987). That work showed that the announcement of a lawsuit brings about smaller gains in the market value of the plaintiff than losses in the market value of the defendant. In other words, there is a net leakage of value from the system. Our results suggest that a plausible reason for this leakage, also mentioned by Cutler and Summers, is that the market expects the plaintiff to waste some of the cash it wins.

References

Bhagat, Sanjai, James A. Brickley, and Jeffrey L. Coles, "The Wealth Effects of Interfirm Lawsuits: Evidence on the Costs of Legal Disputes and Financial Distress," University of Colorado Mimeo (1991).

Cutler, David and Lawrence H. Summers, "The Costs of Conflict Resolution and Financial Distress: Evidence from Texaco-Pennzoil Litigation," Rand Journal of Economics 17, 157-172.

Fama, Eugene F., "Agency Problems and the Theory of the Firm," Journal of Political Economy (1980), 288-307.

Fazzari, Steven, R. Glenn Hubbard, and Bruce Petersen, "Investment and Finance Reconsidered," Brookings Papers on Economic Activity (1988), 141-195.

Greenwald, Bruce, Joseph E. Stiglitz, and Andrei Weiss, "Informational Imperfections and Macroeconomic Fluctuations," AER Papers and Proceedings (1984), 194-199.

Hart, Oliver and John Moore, "Default and Renegotiation: a Dynamic Model of Debt," Mimeo, Massachussets Institute of Technology (1989).

Hoshi, Takeo, Anil Kashyap, and David S. Scharfstein, "Corporate Structure, Liquidity and Investment: Evidence from the Japanese Industrial Groups," Quarterly Journal of Economics (1991), 33-60.

Jensen, Michael C., "Agency Cost of Free Cash Flow, Corporate Finance and Takeovers," AER Papers and Proceedings (1986), 323-29.

Kaplan, Steven N. and Michael S. Weisbach, "The Success of Acquisitions: Evidence from Divestitures," Journal of Finance (1992), 107-138.

Morck, Randall, Andrei Shleifer and Robert W. Vishny, "Do Managerial Objectives Drive Bad Acquisitions?," Journal of Finance (1990).

Myers, Stewart and Nicholas Majluf, "Corporate Financing and Investment Decisions When Firms Have Information that Investors do not Have," Journal of Financial Economics (1984), 187-221.

Shleifer, Andrei and Robert W. Vishny, "Managerial Entrenchment: the Case for Manager-Specific Investments," Journal of Financial Economics (1990).

Stulz, Rene, "Managerial Discretion and Capital Structure," Journal of Financial Economics (1990), 3-29.

Table 1. The Nature of the Award

Company	Against	Filing / Decision dates	a. Nature of the suit b. Effect on current activities
Dasa	AT&T	1983 / 1984	Unfair market practices by AT&T in 1960/70's None: Discontinued products
UNC Resources	Gral Atomic/ Gulf Oil	1975 / 1984	Non-delivery of uranium by UNC in 1973 None: Uranium no longer extracted
San/Bar	AT&T	1983 / 1984	Unfair Market practices by AT&T in 1970's None: Discontinued products
Berkey Photo	AT&T	1973 / 1981	Unfair market practices by Kodak in 1972 None: Old product, market structure unchanged
Diversified	AT&T	1978 / 1984	Unfair market practices by AT&T in 1970's None: Discontinued line
Bio-Rad	Nicolet	1981 / 1984	Patent infringement Little: Small proportion of sales
Howell	Sharon Steel	1975 / 1985	Non delivery of steel by Sharon in 1970's None
Pennzoil	Texaco	1984 / 1988	Breach of agreement None
Conrac	AT&T	1982 / 1984	Unfair market practices by AT&T in 1970's None: AT&T already barred from such practices
Jamesbury	US. Govmt	1963 / 1980	Patent infringement None: Discontinued product
Dynamics	US. Govmt	1967 / 1985	Patent infringement None: Discontinued product

Table 2. The Size of the Award

Company	NPVA (millions of US$)	Income	NPVA/Sales	NPVA/Assets	Fees/GA
***Troubled:**					
Dasa	8.02	- 0.76	6.51	8.26	0.28
UNC Resources	171.67	-14.05	0.56	0.39	0.09
San/Bar	8.90	- 0.21	0.35	0.46	0.01
Berkey Photo	3.47	2.09	0.02	0.03	n.a.
***Healthy:**					
Diversified	10.65	- 1.39	0.07	0.22	0.30
Bio-Rad	1.60	0.61	0.03	0.03	0.16
Howell	5.58	1.01	0.16	0.42	0.05
Pennzoil	2310.00	56.30	1.23	0.69	0.14
Conrac	14.01	6.58	0.11	0.12	n.a.
Jamesbury	3.75	4.90	0.05	0.07	0.04
Dynamics	9.56	11.56	0.07	0.09	0.14
Median	8.90	1.01	0.11	0.22	0.14

NPVA" is the present value of the award, net of taxes and legal fees. "Income is Average Net Operating Income in years *t-2* and *t-1*. "Sales" and "Assets are average sales and average total assets for years *t-2* and *t-1*. "Fees/GA" is the ratio of legal fees related to the suit to the gross award (before taxes and fees).

Table 3. The Initial Position of the Firms

Company	Main Line	q	q(-)	Income/Sales	Inv/Assets	Debt/Assets
**Troubled:*						
Dasa	Telephone equipment	3.34	-3.31	-0.62	0.00	0.00
UNC Resources	Extraction	0.32	-0.09	-0.05	0.08	0.23
San/Bar	Telephone equipment	0.19	-0.27	-0.01	0.05	0.09
Berkey Photo	Photo equipment	0.28	-0.25	0.01	0.06	0.30
**Healthy:*						
Diversified	Metals trading	0.55	0.35	-0.01	0.02	0.13
Bio-Rad	High tech instruments	0.39	0.36	0.01	0.35	0.41
Howell	Auto components	0.37	-0.01	0.03	0.09	0.00
Pennzoil	Natural Resources	1.26	0.56	0.03	0.13	0.44
Conrac	Telecom. equipment	0.52	0.39	0.05	0.06	0.17
Jamesbury	Mechanical equipment	0.62	0.55	0.07	0.22	0.19
Dynamics	Electronic equipment	0.55	0.47	0.08	0.04	0.03
Median		0.52	0.35	0.01	0.06	0.17

"q" is the ratio of market to book value of assets. The market value is the market value of common stock, plus the book value of preferred stock, current net liabilities and long term debt. The book value is that reported in the annual report. Both book and market values are measured at the end of t-1, the fiscal year before the award date. "q(-)" is equal to q minus the ratio of the NPV of the award (NPVA) to the book value of assets. "Income/Sales" is the ratio of average net operating income to average sales for the years t-2 and t-1. "Inv/Assets" is the ratio of average gross investment in years t-2 and t-1 to total assets for year t-3. "Debt/Assets" is the ratio of average long term debt to average total assets in years t-2 and t-1.

Table 4. Different Theories and their Predictions for a Cash Windfall

Variables	Perfect Capital Markets	Asymmetric Information	Agency Models
Investment in own lines of business	0	0	UP (small)
Diversification	0	0 or UP (small)	UP
Divestiture	0	UP	UP
Dividends	UP	UP	0
Managerial Compensation	0	0	UP
Long Term Debt	0 or DOWN	0 or DOWN	UP

Table 5. Changes in Investment

Company	Total Assets (t-1) (thousands of US$)	ΔInv / Assets	ΔInv / NPVA
**Troubled:*			
Dasa	1,206	0.22	0.03
UNC Resources	420,669	-0.01	-0.02
San/Bar	19,359	-0.01	-0.03
Berkey Photo	100,221	0.01	0.19
**Healthy:*			
Diversified	53,939	0.04	0.18
Bio-Rad	62,637	0.00	0.06
Howell	15,738	0.10	0.27
Pennzoil	3,304,000	0.04	0.06
Conrac	109,821	0.02	0.12
Jamesbury	57,229	0.14	2.20
Dynamics	112,608	0.00	0.03
Median	62,637	0.02	0.06

"Total Assets" correspond to those reported in the annual report of the company at the end of the fiscal year before the award (t-1). ΔInv is defined as the average of gross investment in years t and $t+1$ minus the average of gross investment in years t-2 and t-1. "ΔInv / Assets" is then equal to ΔInv divided by total assets in year t-1. "ΔInv/NPVA" corresponds to ΔInv divided by the net present value of the award.

Table 6. Changes in Asset Dispositions

Company	Pre-award		Post Award		
	Sales/Assets	Discont/Assets	Sales/Assets	Discont/Assets	Discont/NPVA
**Troubled:*					
Dasa	0.50	0.00	0.00	0.39	0.06
UNC Resources	0.06	0.04	0.05	0.66	1.61
San/Bar	0.04	0.00	0.00	0.20	0.43
Berkey Photo	0.01	0.01	0.02	0.03	0.87
**Healthy:*					
Diversified	0.05	0.00	0.01	0.04	0.20
Bio-Rad	0.19	0.00	0.30	0.01	0.18
Howell	0.03	0.14	0.05	0.00	0.01
Pennzoil	0.00	0.11	0.03	0.29	0.41
Conrac	0.25	0.00	0.04	0.13	1.01
Jamesbury	0.00	0.00	0.00	0.00	0.00
Dynamics	0.28	0.00	0.03	0.01	0.09
Median	0.05	0.00	0.03	0.04	0.20

"Pre-award" corresponds to the average for years *t-2* and *t-1*. "Post award" corresponds to the average for years *t* and *t+1*. "Sales" correspond to sales at cost of assets; "Discont" corresponds to discontinued operations or asset retirements. Ratios to assets pre-award are to assets in year *t-3*. Ratios to assets post-award are to assets in year *t-1*. "Discont/NPVA" corresponds to the sum of discontinued operations or asset retirements for years *t* and *t+1* divided by the net present value of the award.

Table 7. Changes in Acquisitions

Company	Pre-award	Post award		
	Total Acq / Assets	Old Lines/Assets	New Lines/Assets	Total Acq / NPVA
Troubled:				
Dasa	0.10	0.00	8.36	1.25
UNC Resources	0.16	0.00	0.41	1.01
San/Bar (a)	0.13	0.00	0.00	0.00
Berkey Photo	0.00	0.00	0.05	1.50
Healthy:				
Diversified	0.00	0.07	0.11	0.90
Bio-Rad	0.06	0.03	0.00	1.12
Howell	0.00	0.00	0.00	0.00
Pennzoil	0.06	0.86	0.11	1.38
Conrac (b)	0.29	0.00	0.00	0.00
Jamesbury	0.13	0.00	0.00	0.00
Dynamics	0.34	0.41	0.00	4.88
Median Troubled	0.12	0.00	0.23	1.13
Median Healthy	0.06	0.03	0.00	0.90

"Total Acq/Assets" refers to the sum of all gross acquisitions between years *t-4* and *t-1* divided by total assets in year *t-5*. "Old lines" is the sum of gross acquisitions in any line of business existing prior to the award date between years *t* and *t+3*. "New lines" is the sum of gross acquisitions in new lines of business between years *t* and *t+3*. "Old lines/Assets" and "New lines/Assets" are ratios to total assets in year *t-1*. "Total Acq/NPVA" is the sum of acquisitions in old and new lines between years *t* and *t+3* divided by the net present value of the award.

(a) Company merged after 2 years; acquisitions over *t* and *t+1* only.
(b) Company merged after 3 years; acquisitions over *t*, *t+1* and *t+2*.

Table 8. Changes in Long Term Debt

Company	Pre-award		Post Award		
	Debt/Total Capitalization	ΔDebt / Debt	Δ(Debt/Total Capitalization)	ΔDebt / Debt	ΔDebt / NPVA
**Troubled:*					
Dasa	0.00	n.a.	0.67	n.a.	0.60
UNC Resources	0.39	0.15	0.26	0.96	0.50
San/Bar (a)	0.17	-0.12	-0.04	0.02	0.00
Berkey Photo	0.50	-0.18	-0.05	-0.00	-0.93
**Healthy:*					
Diversified	0.28	-0.14	0.14	2.65	1.38
Bio-Rad	0.55	0.88	-0.24	0.10	1.95
Howell	0.00	-1.00	0.03	n.a.	0.10
Pennzoil	0.69	0.13	-0.06	0.53	0.30
Conrac (b)	0.23	-0.50	-0.05	-0.53	-0.31
Jamesbury	0.27	0.09	-0.04	0.15	0.37
Dynamics	0.05	-0.54	0.13	4.90	1.64
Median	0.27	-0.12	-0.04	0.46	0.15

"Pre-award Debt/Total Capitalization" corresponds to the average of long term debt to total capitalization for years *t-2* and *t-1*. "Total Capitalization" is equivalent to long term debt plus the value of total shareholders' equity. "Pre-award ΔDebt/Debt" corresponds to the change in long term debt from *t-3* to *t-1*, divided by long term debt in year *t-3*. "Δ(Debt/Total Capitalizaiton)" corresponds to the long-term debt to total capitalization ratio for *t+3* minus the long-term debt to total capitalization ratio for *t-1*. "Post award ΔDebt/Debt" corresponds to the change in long term debt from *t-1* to *t+3*, divided by long term debt in year *t-1*. "Post award ΔDebt/NPVA" corresponds to the change in long term debt from *t-1* to *t+3*, divided by the net present value of the award. "n.a." corresponds to the case where initial debt is equal to zero, so that the ratio is not defined.

Table 9. Changes in Dividends, and Stock Repurchases

Company	ΔDividends / NPVA	Repurchases / NPVA	ΔRepurchases / NPVA
***Troubled:*			
Dasa	0.00	0.00	0.00
UNC Resources	0.00	0.29	0.29
San/Bar (a)	0.01	0.00	-0.00
Berkey Photo	0.00	1.58	1.58
***Healthy:*			
Diversified	0.00	0.50	0.44
Bio-Rad	0.00	0.00	-0.24
Howell	0.43	1.42	1.39
Pennzoil	0.05	0.17	-0.32
Conrac (b)	0.01	0.29	0.29
Jamesbury	0.56	0.25	0.10
Dynamics	0.00	0.81	0.15
Median	0.00	0.29	0.15

"ΔDividends / NPVA" corresponds to the sum of the change in total cash dividends from *t-1* to *t+3* on shares outstanding at *t-1*, divided by the net present value of the award. "Repurchases/NPVA" corresponds to the sum of stock repurchases in years *t* to *t+3*, divided by the net present value of the award. "ΔRepurchases/NPVA" corresponds to the difference between the sum of stock repurchases in years *t* to *t+3*, and the sum of stock repurchases in years *t-4* to *t-1*, divided by the net present value of the award.

(a) Company merged two years after the award; pre-award data considers years *t-2* and *t-1*, while post award data considers years *t* and *t+1*.
(b) Company merged three years after the award; pre-award data considers years from *t-3* to *t-1*, while post award data considers years from *t* to *t+2*.

Table 10. Changes in Management Compensation and Stock Ownership

Company	Δ Cash	ΔCash / NPVA	ΔStocks/Stocks	Management Stock Ownership	
				Pre-award	Post award
**Troubled:*					
Dasa (a)	1,487	0.19	0.17	0.063	0.165
UNC Resources	3,661	0.02	0.05	0.013	0.021
San/Bar (b)	1,584	0.18	0.00	0.375	0.400
Berkey Photo	787	0.23	-0.01	0.147	0.079
**Healthy:*					
Diversified	1,690	0.16	-0.02	0.145	0.184
Bio-Rad (c)	478	0.30	0.03	0.563 0.327	0.622 0.249
Howell	961	0.17	0.00	0.335	0.463
Pennzoil	20,227	0.01	0.00	0.043	0.035
Conrac (d)	343	0.03	-0.01	0.140	0.103
Jamesbury	-168	-0.04	0.01	0.269	0.298
Dynamics	1,496	0.16	0.00	0.125	0.110
Median	1,487	0.16	0.00	0.145	0.165

"ΔCash" corresponds to the difference between the sum of total cash compensation for the top 3 executives from *t-1* to *t+3*, and the sum of total cash compensation between years *t-4* and *t-1*. "ΔCash/NPVA" corresponds to the mentioned difference in total cash compensation divided by the net present value of the award. "ΔStocks/Stocks" corresponds to the difference between the number of stock options and common shares given to the 3 top executives over years *t* to *t+3*, and that over years *t-4* to *t-1*, divided by the number of shares outstanding at *t-1*. "Management Stock Ownership" corresponds to the average ownership of common stock of the whole management team reported each year. "Pre-award" numbers corresponds to the years between *t-4* and *t-1*, while "post award" data correspond to the years between *t* and *t+3*.

(a) For this company, the numbers for "ΔCash","ΔCash/NPVA" and "ΔStocks/Stocks" correspond to top 2 executives only.

(b) Company merged two years after the award; pre-award data considers years *t-2* and *t-1*, while post award data considers years *t* and *t+1*.

(c) Company has two classes of stock. The first line of management stock ownership data corresponds to class B shares with full voting power. The second line corresponds to management stock holdings of class A shares with limited voting power.

(d) Company merged three years after the award; pre-award data considers years from *t-3* to *t-1*, while post award data considers years from *t* to *t+2*.

APPENDIX

1) DASA CORPORATION vs. AT&T:

DASA began manufacturing telephone peripheral equipment in 1966. Between 1977 and 1981, as a result of a severe loss of market penetration, it discontinued all telephone dialers products. In 1981, it started producing of a new microcomputer-controlled telephone dialer and speaker-phone combination. DASA had a minimal amount of liquid assets and very limited cash resources. In 1982, a "Troubled Debt Restructure" took place trying to prevent bankruptcy. As a result, a non-recurring income gain of twice the value of total sales was registered that year. As a form of payment to some creditors, the debt restructure included the assignment of 17.5 % of the proceeds of a planned lawsuit against AT&T. In order to finance the litigation costs, an additional 25 % of the award was promised to the lawyers, and an extra 5.88 % to a newly created limited partnership (Automatic Dialers Partners). DASA would keep only 49.12% of the potential award since it also promised 2.5 % to its CEO.

During the next two years and in spite of the debt restructure, the company kept losing money and was completely cut from the credit market. Special loan arrangements required licensing of production. Dividends were stopped and debentures went in default. On June 1, 1983 DASA sued AT&T, Western Electric Co. and Bell Telephone Laboratories for violations of sections 1 & 2 of the Sherman Act (unfair market strategies). It sought treble damages in excess of $ 156 million for injury to its business and property during the late 60's and 70's. AT&T was alleged to have required users of DASA's discontinued products to buy an AT&T "protective coupling arrangement" before they could be attached to AT&T's telephone lines.

The suit was settled in 1984. The size of the Net Present Value of the Award (npva) represented more than 6 times average annual sales and above 8 times average total assets in the previous two years. The set of policies undertaken after the award differ markedly from those followed after the debt restructure. The year of the award, DASA basically tried to rearrange its business. It took its subordinated debentures out of default, made leasing arrangements on a yearly basis, and terminated contracts which allowed other companies to manufacture its product. Its access to credit was restored and its long-term debt substantially increased. An equivalent to 35% of total assets were discontinued that year. It even canceled a stock offering incurring costs equivalent to 4.3 % of npva.

The change in gross investment comparing the two-year period before and after the award increased an equivalent of 3.2 % of npva. During the post-award four-year period of our analysis, DASA started 3 different lines of business, dropping 2 of them 1 or 2 years later. In 1985, with the acquisition of 3 companies in England (Dazeplan Limited, MSD Computer Systems and MSD Limited) DASA started the sale, lease and service of business computers and communication systems. The total cost of these acquisitions represented 33% of npva. A year later, DASA entered into a 50 % joint venture with Northampton involving interests in 90 producing leases with 117 oil wells in several U.S. states (the required initial investment was 7 % of

npva). In 1986, the company engaged in the creation of a new generation of products in its original telephone-dialer line of business investing almost .25 of npva. But all this was sold the following year when the company underwent a Quasi-organization and completely changed business lines. It reported to shareholders that the measures "...were undertaken in recognition of the fundamental change in the nature of DASA's operations during fiscal 1987 due to the sale and disposal of substantially all the Company's businesses and the acquisition of the Credit and Collection business." DASA disposed or sold: its traditional line of design and marketing of electronic call processors; the 1985 acquisitions in Computers and Communication systems; and the subsidiaries engaged in computer systems of the newly acquired Corliss Inc. which was engaged in credit and collection. The cost of the new line was .73 of npva, while the sale price of its previous lines reached 1.3 times npva, with a considerable gain over book value.

Throughout the post-award years the company continued its path of net operating losses, but the top two executives alone managed to collect a change in cash compensation close to 19% of npva. An equivalent to 17% of total shares outstanding was distributed to the executive group in the form of common stock but mostly as options. Shareholders did not receive any cash or stock dividends and no share repurchases were conducted.

2) UNC RESOURCES INC. vs. GENERAL ATOMIC COMPANY:

UNC's lines of business before the award consisted of extractive operations (uranium, contract drilling, oil & gas exploration), and manufacturing & services (nuclear reactor cores, components for aerospace industry, plutonium reactors and heavy industrial machine tools). In 1975, disclosures made available showed that an uranium cartel had been manipulating prices. Therefore, UNC filed suit against General Atomic (GA) and its 2 constituent parties (Gulf Oil Corp. and Scallop Nuclear Inc.) seeking to be relieved from delivering uranium concentrate under several contracts. In 1978, the court entered a default judgement against GA because of its failure to comply with its discovery obligations and provided indemnification payments for UNC. In 1982, after years of dispute, UNC finally sued GA for not obeying the court orders of the prior suit.

Before the settlement, UNC described itself as undergoing a period of transition "trying to get away from the uranium sector and looking for diversification opportunities in other minerals, extractive operations and its manufacturing in the naval sector". During the four-year period before the award, UNC's acquisitions amounted to 16% of total assets. UNC faced some financial constraints which led to the cancellation of cash dividend payments in 1980 and the sale of some assets. The company also decided to suspend uranium operations (with the intention of reopening) and sold most of its mining assets. The company was incurring losses and its financial situation worsened with the 1982-83 recession. Special measures were undertaken to get cash. In May 1984, UNC entered an agreement with Gulf Oil and its parent Chevron Corp. for the final settlement of the suit. Gulf paid $130 m in cash and assumed one of UNC's uranium liabilities for $71.5 m. The settlement also

included an agreement with Chevron for the investment of $100 m. in newly issued common stock of UNC (shares were subject to restrictive provisions relating to voting rights, ownership and sale). The npva (without the Chevron investment) was equivalent to 56% of UNC's average sales or 39% of average total assets in the previous two years.

The award was followed by a negative change in gross investment equivalent to 2.4% of npva. Nonetheless, the settlement triggered a large restructure. In 1984, UNC discontinued its uranium, mining, and offshore products segments. These represented almost 60 % of total assets and included most of the companies UNC had acquired only 2 years before. In the following years, the company also discontinued its machine tools sector and its reactor operations leaving the small segment of aerospace components as the sole survivor. Total retired and discontinued assets over two years amounted to 1.6 of npva or 66 % of total assets in 1983. The second part of the reorganization involved acquisitions for an amount close to that of the npva or 41% of total assets. The company exclusively acquired in new (unrelated) lines of business. A communications carrier (TRT Communications) was bought for .33 of npva. The new "Air Services" sector included varied acquisitions reaching close to .62 of npva. This line consisted of turbine-engine service, commuter and regional airlines and helicopters, and the Burnside-Ott Aviation Training Center for simulator pilot training. Most of these acquisitions were paid in cash.

Part of the changes were also financed through the large increase in long-term debt which almost doubled its pre-award level. Other sources were the $100 million investment of Chevron in UNC shares according to the settlement, and asset sales for an equivalent to 13% of npva in 2 years. Another use of these funds were targeted stock repurchases. UNC's management reached a deal with Maxxam acquiring its 19.8% of common stock holdings in exchange for a 10-year "hands-off" agreement. The cost of this transaction was equivalent to 29% of npva. In 1986, the company started to buy back the shares issued to Chevron. The repurchases were carried out at a fixed price well above market at the time.

The old management team received wage increases and a special bonus reaching 4.2 % of the award. They retired right after the award. Shareholders did not receive any cash of stock dividends. Two preferred stock purchase rights per share were issued. They carried no cash value and were designed to assure shareholders of receiving fair value for their stock in case of a takeover.

3)SAN/BAR CORPORATION vs. AT&T:

San/Bar (SB) was formed in 1962 to engage in the repair and refurbishment of telephone equipment for independent telephone companies. In 1979 the company developed a multi-purpose lubricant for metal mechanisms known as BREAK-FREE. SB had 4 operating divisions: business telephone systems; transmission systems; telephone service center; and Break-Free operations. On August 18, 1983 SB sued AT&T, Western Electric and Bell Laboratories alleging violations of the Sherman Act. They were accused of restraining and monopolizing trade of repair

telecommunications equipment affecting SB's sales of its already discontinued line cards.

Prior to the award, problems ranging from product obsolescence to increased market competition reduced SB's profitability. SB stopped paying dividends in 1984 and faced financial constraints leading to the sale of some land. The award came in early fiscal 1985. The amount was equivalent to 35 % of average sales or 46 % of average total assets in the previous two years.

The award did not lead to any increase in gross investment, although the company announced that this extraordinary gain would "help provide a solid financial base to move forward with our products". The performance of SB worsened in the following years. The award triggered a reorganization and consolidation of operations, as announced by SB. The assets discontinued or put out for sale amounted to .43 of npva or 19.8 % of total assets prior to the award. The 1985-86 reorganization effort included the consolidation of two lines into a single segment (Business Telephone-Transmission Systems). Additional measures included: closing its two plants in Canada, withdrawing from operations in West Germany, putting for sale 2 owned plants (out of 3), closing half of the subsidiaries, and firing 45.5 % of employees within two years.

One year after the award, SB began merger negotiations with Resdel Corp. (which did not have any lines relating to SB's telephone equipment operations). Following a failed attempt, both corporations finally agreed to merge on April 10, 1987 with RESDEL as the surviving company. Each outstanding share of SB was converted into a right for one share of Resdel's Common Stock (Resdel was thus issuing 2,142,639 shares of common, close to a 50% increase). Before the Merger, all outstanding shares of the subsidiary Break-Free Corp, the most profitable branch of SB, were distributed to SB's shareholders. SB transferred to Break-Free sufficient assets, in order to assure that it had a net worth of $ 2.0 m. SB declared that the merger "greatly enhance diversification and growth prospects of the company while the spin-off of Break-Free allowed it to focus on its own line of business".

The year SB filed the AT&T suit, it also modified the "Salary continuation agreement" for top executives in order to include the case of a merger. Therefore, immediately prior to the merger, SB paid some top executives the amounts mentioned under the agreements. The total change in the top three executives cash compensation reached 18% of npva. An additional stock bonus equivalent to 1.1 % of outstanding shares was also distributed. Two members of the Hallamore Family, acting as the CEO and a director, owned together an average of 30.5 % of common shares throughout this period. Management ownership remained high increasing to 40.2% before merging. The merger and spin-off implied for executives not only the possession of shares of Resdel and Break-Free, but also keeping their jobs now as CEO and President of the independent Break-Free Corp.

The participation of another large shareholder (Reliance Insurance Company) considerably increased after the award going from 8.1 % in 1981 to 21.6 % in 1986. SB described paying cash dividends "only when the economic situation allowed it". Nonetheless, the award did not lead to any increase in dividends. The change in dividend payments amounted to 1.2% of npva and consisted of a special dividend declared just before to the merger with Resdel two years after the award. No share

repurchases followed the settlement.

4)BERKEY PHOTO INC vs. EASTMAN KODAK:

Berkey Photo's (B) activities before the award included: film processing; wholesale distribution of photographic equipment and supplies; retail camera outlets; selling, renting and leasing office copying equipment; and manufacturing photographic, graphic arts and lighting equipment. In 1973, Berkey filed suit against Eastman Kodak. B contended that in 1972 Kodak's simultaneous introduction of the pocket-size camera and its film, meant that Kodak's film-processing laboratories were alerted earlier to process the new film. Kodak was also accused of conspiring with lamp makers in the development of new camera-flash systems, putting B at a disadvantage.

Before the award, the operating results of the company were positive but high levels of current payments of long-term debt constrained growth. In 1981, a cash shortage forced to announce to shareholders that "debt stops growth chances unless more asset sales take place". The year of the award, B blamed increased retail competition for its losses forcing it to sell some of its assets in order to meet its financial commitments. Within a few months, a settlement was reached with Kodak. The award represented almost twice the value of average net income or 2.1% of average sales in the previous two years. Long-Term debt fell sharply right after the award and the company even declared long term debt prepayments.

During the first 2 years after the award, the company increased gross investment by an amount equivalent to 0.6% of total assets or .18 of the net award. A reorganization involving several stages took place. As a first step, it involved the disposition of the Machine Manufacturing operations accounting for an equivalent of .87 of npva or 3 % of total assets. Four years after the award, B had discontinued assets for an equivalent amount of 1.3 times npva. At first, no significant asset acquisitions were made while the reorganization of existing operations was in full swing. But in the third year, B engaged in a very different new line of business pertaining to the provision of "promotional services". B acquired Marden-Kane, a national sales promotion firm for suppliers of consumer goods and services for a price equivalent to 1.5 times npva. Part of the cost of this new acquisition was financed through the sale of some of the traditional segments of Berkey, like the photofinishing stores and a large manufacturing plant. Total asset sales during the first two years after the award were equivalent to .56 of npva.

B finally completed its restructure four years after the award (this is not considered in the data of the tables). The original film processing segment was sold for close to $ 40 m. (11 times npva), and the "B&E Sales Company" was acquired for $22 m. This company created advertising and merchandise promotions for more than 1,000 independent drugstores and chains nationwide. This new line became the main line of the renamed "Berkey Inc.".

B's founder and former CEO, Mr. Berkey, retired the year of the award selling his 10% holdings of common stock to Nimslo Corp. Nimslo became B's largest shareholder with 16 % of common. A year later, B and Nimslo signed a letter of

intent that would have taken Nimslo to own 45% of B's shares. Only two months later, B's management engaged in a costly repurchase from Nimslo invalidating the former letter. B bought back Nimslo's 16% holdings for a price above market value. The company incurred a loss equivalent to 27% of npva.

The increase in cash compensation for the top three executives reached a sum close to 23 % of npva. Shareholders did not receive any cash or stock dividends during the four-year period after the award. No open market share repurchases took place in the same period.

5)DIVERSIFIED INDUSTRIES INC. vs. AT&T:

Diversified's (D) main activity was trading metals, but it also produced brass strip, marketed structural steel, processed high temperature alloys, and reclaimed precious and semi-precious metals. In September 1978, D filed a $100 m lawsuit against AT&T, Western Electric Co., & Nassau Recycle Corporation (subsidiary of WE) seeking treble damages. It accused the defendants of conspiring to force D out of the wire chopping business by monopolizing interstate trade and commerce. As a result of these actions, D alleged to have discontinued operations of 3 metals processing plants.

The company's poor performance during the period prior to the award was blamed on a fall in the price of precious metals and on reduced demand due to the 1982-83 recession. The settlement of the AT&T litigation came in 1984 representing cash equivalent to 6.8 % of average sales or 21.5 % of average total assets in the 2 years prior to the award.

The settlement triggered a lot of action. In the first 2 years an expansionary movement took place. Change in gross investment represented 4% of total assets or .17 of npva. A modernization program of the brass strip sector which spanned over several years had a cost equivalent to .56 of npva. This program reflected a large increase in gross investment in the last 2 years of our period of analysis. Large asset acquisitions occurred on both related and new lines of business. The segment of brass strip production was enlarged into "Manufacturing of Metal Products" with the acquisition of Midwest Steel for a cash amount equivalent to .35 of npva. A year later, a new line of business named "Manufacture of Consumer Products" involved two new acquisitions: M&R Industries and Ramco Properties Inc. These companies manufactured exercise equipment. D paid a priced equivalent to .56 of npva (3/4ths. paid in cash).

The expansion led way to a restructure of operations involving disposition and asset sales. Discontinued assets in the first 2 years after the award represented 20% of npva. Other large dispositions (not included in 2-year data) took place in 1986 when Drachman Structurals, engaged in marketing of steel beams, shut down. The company was sold a year later for a price equivalent to nearly .25 of npva. The restructure of operations was further pursued in the following years with the disposition of the recently acquired line of "Manufacture of Consumer Products". All the subsidiaries engaged in this line were discontinued in 1989, only 3 years after their acquisition. A year later its assets had still not been sold, therefore D liquidated

them.

Long-term debt substantially increased during the years after the award, tripling its pre-award levels. Some of these resources were spent in a stock repurchase program which started immediately after the settlement in 1984. Three years later, 12.5 % of outstanding common stock had been bought back.

The Chairman & CEO of Diversified increased their holdings of common stock from 9.4% to 16.8% over this period. As a result of the award, a special bonus equivalent to 9 % of npva was distributed among executives. The change in total cash compensation for the top 3 executives alone totalled an amount equal to 16% of npva. Shareholders did not receive any cash or stock dividends throughout the post award period.

6)BIO-RAD LABORATORIES INC. vs. NICOLET INSTRUMENT CORP.:

Bio-Rad Laboratories (BR) is a maker of high-technology instruments to analyze and decompose chemical mixtures. It has several thousand products organized in three main divisions: research (chemical), diagnostic, and analytical instrumentation. In June 1981, BR sued Nicolet for patent infringement of a device which measured certain properties of semiconductor material. In December 1982, BR won in court but Nicolet appealed and it was not until late 1984 that BR received the payment. The npva was equivalent to 2.7 % of average sales or 1.5 times average net operating income in the previous 2 years.

In 1979 the government required BR to move to another location because the State was planning to build a highway. Therefore in 1983, before the actual award payment, BR embarked in a large project to relocate its headquarters and main plant. The company bought land for an amount which would be equivalent to 3.4 times npva. BR planned to develop a science park and to relocate its headquarters in the next five years incurring estimated expenses of an additional amount equal to 13 times npva. Although profits were low in 1982-83, the company continued expanding abroad acquiring Polaron Equipment Ltd. (.5 of npva) and opening new subsidiaries. In order to finance these operations, BR got a new credit line for up to $ 20 million (it used $13 m that year).

The period after the award was marked by a large expansion of operations and capital expenditure mainly directed to the new industrial park. It is hard to know whether the continued expansion after the award is solely caused by it. At least 3 other reasons could explain it: the significant gains on the property sold, improved sales, and the need to change location and thus to incur in large capital expenditure. It seems that the effect of the award provided a second momentum for continuing growth at the time the company was going through an income setback. BR kept high gross investment rates very similar to the ones prior to the award after the decision to relocate production. This explains the small change in gross investment of the first 2 years (6% of npva). BR continued opening new subsidiaries abroad and acquiring assets in related lines. Some of these involved: Oriombo S.A. (France); Bio-Rad Lasersharp (England), which started a new division of Microscience; and all the remaining shares of its affiliate Escogen.

Asset sales were an additional source of income reaching a level of 11.54 times npva or 29.6 % of total assets. These assets mainly consisted of land and property including the abandoned production site and a large part of the original acres bought for relocation and sold at a profitable margin. BR repeated constantly in its annual reports that "the Company's principal capital requirement is for working capital to fund its growth". Increased long-term debt continued being an additional source of cash. The largest jump in debt levels occurred in the year prior to the award. Resources close to 8.4 times npva were drawn from common stock offerings of the non-voting class of common shares.

Management cashed an amount close to 30% of npva in increased monetary compensations. It is nonetheless hard to attribute this to the sole effect of the award. The special bonus in the form of options in the year after the award (equivalent to 3% of outstanding shares) was clearly associated with the litigation settlement. Management, particularly the President, had large holdings of both classes of stock with full and partial voting rights. The only two large shareholders outside family or management, disappeared from the large stock owners list after the award. Meanwhile, the executive team increased their holdings of the full-voting shares and reduced those of the partial-voting class. Shareholders did not receive any cash dividends. Nonetheless, two 50 % stock dividends were announced within two years after the award.

7)HOWELL INDUSTRIES INC. vs. SHARON STEEL CORP.:

Howell Industries (H) is a Michigan corporation engaged in the original manufacture of structural components for the automotive industry. Its main products are steel automotive structural supports and other stamping (80% of sales), windshields and seat guides. H sued Sharon Steel Corp. (ShS) for breaching a contract to deliver steel for several years in the 1970's.

In 1984, a year before the award, Howell closed one of its 4 plants but relocated over 90 % of its production. Discontinued assets in connection to this plant closing alone represented about 8% of total assets. H's product sales followed closely the automobile cycle which showed an upward trend between 1982 and 1984.

The litigation award came in 1985 in the form of a cash payment equivalent to 6 times H's average annual net income or 16% average sales during the previous two years. The size of the award was also significant in terms of assets representing 42.2 % of average total assets in 1983-84.

The following two years after the award showed a change in gross investment equivalent to .26 of npva or almost 10% of total assets. The four-year period after the award does not show any significant asset acquisitions and only some asset sales, close to 5% if total assets. The immediate years following the settlement had high levels of short term investments. A large part of the award went directly to "cash and cash equivalents" which more than doubled in 1985. That year H started investing large amounts in "marketable securities", which in the 1987 annual report amounted to an equivalent of 89.7% of npva.

Some members of the founder's family and Mr. Freedland (CEO and son of the

founder) owned 54% of common stock of the company. Within a few months after the award, H agreed to repurchase 21 % of the firm's stock from the daughter of the founder and other family members. In 1986, Howell created an "Employee Stock Ownership Plan" through which the company bought nearly 14 % of shares. Another important repurchase agreement took place in 1987 involving the 25 % of common in possession of ShS (the defendant in the litigation). Targeted repurchases resulted in a 27 % reduction in total shares by the end of the period of analysis. Four years after the award no large shareholder besides management remained in the company.

The dividend policy of the company consisted in distributing cash dividends only when the economic situation allowed for it. Three months after the award, Howell declared a special dividend. In the following three years more dividends were announced making the change in dividend payments close to .43 of npva. The largest part of the dividend increase (.25 of npva) was declared after ShS's shares were repurchased two years after the settlement.

Change in top management cash compensation amounted to 17 % of npva. The data on H's stock ownership structure showed a large percentage of common stock in the hands of the founder's family and the management team. H's CEO in fact increased his participation from 30 to 53 % of common stock four years after the award. Therefore, some of the special dividends declared ended in the executives' pockets. We calculated that close to .20 of npva went back to the top managers through increased cash dividends in their role of shareholders.

8) PENNZOIL vs. TEXACO:

In 1983, Pennzoil (P) described itself as a natural resource company engaged in 3 main lines of business: oil and gas exploration and production; processing refining and marketing of oil, gas and refined petroleum products; and mining and processing of copper, molybdenum, silver, gold, sulphur and potash. On February 8, 1984, P filed suit against Texaco alleging that although Texaco knew about the existence of an agreement by which P would acquire 3/7ths. of Getty Oil's stock, it nonetheless procured the breach of this contract buying all of Getty's shares and agreeing to indemnify Getty against damages arising out of the earlier P agreement.

The first court ruling in favor of P came in November 1985, but a series of appeals and complications continued for 2 years. During this period, P increased long-term debt by 30% taking the long-term debt to total capitalization ratio from .54 to .70 between 1984 and 1987. An "Intercorporate Reorganization" in 1986 consolidated operations in larger subsidiaries. This meant the reduction of 24 % of employees and the closing of 5 subsidiaries. It is possible that the $ 11.12 b. favorable court judgement in late 1985 prompted some of these actions.

It was not until December 1987 that the final settlement was reached. The npva represented 1.23 times average annual sales and almost 70% of average total assets in the previous two years. This cash infusion allowed P to "review its operations" discontinuing and retiring assets for an amount equivalent to .38 of npva. P completed its Intercorporate Restructuring by consolidating its largest line of business, Oil & Gas Exploration. This meant the closing of 4 subsidiaries and a

provision for write-downs representing 23% of npva. Net Property, Plant & Equipment fell over $ 1 billion (45.6%) in one year.

In order to avoid the payment of capital gains taxes from the award (nearly 30 %), P had to invest it on similar assets to the ones it could not get a hold of (Getty Oil). Therefore, there was an external constraint biasing towards gross investment and asset acquisitions in old lines. Nevertheless, the change in gross investment in all lines of business only amounted to 5.4% of npva. P kept the award in the form of "Temporary Cash Investments" for several months before it finally decided to invest $2.16 b (.87 of npva) in CHEVRON shares. P was expecting to justify this as a "related acquisition" to avoid taxes (we classified this investment among its related acquisitions).

Expansion after the award covered both old and new lines. P acquired the remaining 51.3 % of Proven Properties Inc., which buys and operates oil & gas properties, for a total cost equivalent to .25 of npva. New lines of business included Facet Enterprises and its 10 subsidiaries which were engaged in filtration products (9.4% of npva). Only two years later, P decided that filtration products did not fit its future growth perspectives so it discontinued the line taking a write-down of $125 m. (half of the cost). In 1987, P started a partnership named "Veriquest" which bought $97 m. in buildings from commercial banks in downtown Houston. Finally, P acquired 80% of common stock of a retail chain for petroleum and other products, Jiffy Lube International (a former limited partnership). P included this company as a new segment called "Franchise Operations".

The company bought back 12.8 % of outstanding stock in the following 2 years after the award, but it issued almost the same amount in 1990 in connection to part of the payment for some asset acquisitions. There was an increase of over 50% in long-term debt between 1987-1990. Right after the award, P declared a dividend increase going from $0.55 to $0.75 per quarter. Nevertheless, the accumulated change in dividends in the post-award period accounts for less than 5% of npva.

The "old" 3 top executives cashed a special bonus of $ 20.5 m. (0.8% of npva). Once they collected the money they retired in 1988 and a new management team came in with lower compensation.

9) CONRAC vs. AT&T:

Conrac Corporation (C) was an electronics manufacturer primarily engaged in providing technically based products for telecommunications, video and computer-related information markets. In 1980 it had four business segments: information display and control, telecommunications and architecture, industrial, and aerospace products. In 1982, Conrac filed an antitrust suit against AT&T, Western Electric and Bell Laboratories claiming unfair and illegal business disadvantage. C alleged that in the 1970's, these companies prevented the Bell System operating companies from buying products until Western Electric could develop them.

Prior to the settlement, C's sales were expanding. The company embarked on a policy of long-term debt reduction. In 1982, the company sold (with a gain) its assets in the Avionic segment discontinuing the line. Conrac also expanded its

telecommunications sector with the acquisition of Ford Industries (renamed Code-A-Phone). Close to 75 % of the cost was financed through an 8-year term loan from a bank.

The settlement came in 1984 involving cash payments over 7 years and C immediately sold the collection rights for cash. The npva represented an amount over twice C's average annual net income (11% of average sales) and 12% of average total assets in the previous two years. In the same quarter of the award, C announced that the rapid changing conditions of the industry required a "complete restructuring of the Company's telecommunications business plan". The annual report stressed that "..the settlement of the AT&T antitrust provided a non-operating income item that more than offset the direct costs of this entire restructuring program" (.96 of npva). The measures in the plan included transferring some production overseas to related manufacturers, and consolidating other production processes in one location. Certain product lines and their related assets were discontinued, while a new marketing structure was designed. Restructuring costs also included inventory write-downs and provisions for layoffs. Labor reductions reached 37% by the end of 1986. Discontinued assets and associated costs added up to an amount equivalent to that of the whole npva.

Asset sales of almost 4% of total assets were carried out within two years of the award. They accounted for an additional source of income equivalent to .31 of npva. No important asset acquisitions took place, but the company created a new segment named "Retail of Consumer Products" out of the subsidiary acquired prior to the award. Changes in gross investment only explain .12 of npva or 1.5% of total assets. The company stated in all its reports that capital expenditures had the sole purpose of "covering depreciation".

A small stock repurchase program took place at the beginning of the post-award period. Close to 3.2% of outstanding shares were bought back. More important seems the change in capital structure, strongly emphasized by the managers, which continued the pre-award efforts of debt reduction. The long-term debt to total capitalization ratio reached .04 in 1986. Three years after the award, Mark IV Industries made a tender offer for Conrac. Management initially objected, but the merger was finally accepted. Conrac represented a new line of business for Mark IV and was described as a "good opportunity in the market".

Two years after the award, Conrac declared a 10 % stock dividend increase equivalent to .01 of npva. Although the 3 top executives saw their cash compensations increased by 25 % in nominal terms at the end of the period, the change in compensation represents only 1.6 % of npva. Apparently no significant golden parachute clauses benefitted management after the merger, but they all signed new employment contracts with Mark IV (at lower wages).

10)JAMESBURY CORP. vs. THE UNITED STATES GOVERNMENT:

Jamesbury (J) was a mechanical equipment producer. It manufactured valves, which accounted for 95% of sales, and tape readers. In 1963, J sued the United States Government because it used ball valves procured from commercial sources

which infringed J's patent. Eight years later, the court determined that the patent had been infringed, but the amount of the settlement was still to be determined, with the two parties holding very different expectations about the final outcome.

During the pre-award period, J's profits and sales were increasing. No significant asset sales or acquisitions were registered but there was an increase in gross investment close to 23 % of total assets in the two years prior to the award. This amount was connected to the creation of a new plant in J's main line of business.

In 1980, after a series of appeals, the court entered judgement in favor of J for a cash payment equivalent to 5.5 % of average annual sales or 7.7 % of average total assets in the previous two years. The outcome of the litigation did not affect J's activities since the valves in dispute had been discontinued several years before.

The year of the award, J announced the construction of a plant to establish a new generation of valves. Increased capital expenditure in the following years was mainly channeled to this plant. It amounted to an equivalent of 2.2 times npva during the two-year period after the award. This project also explains the large increase in long-term debt. Two months after receiving the award J got several credits to finance part of the construction. These credits included for example a 15-year Industrial Revenue Bond equivalent to 1.33 times npva. The plant was fully operational within two years after which capital expenditure sharply decreased.

In 1981, J began operating Decitek Corp., a new subsidiary acquired only a year before the final payment of the award. This company started producing floppy-disk drives. This segment was out of the main business of J and caused large losses to the corporation. The following year, Decitek's operations were reshaped without success. Only 2 years after its opening, Decitek and the whole segment were discontinued. One of J's partnerships, Lebanon Steel Foundry, had been on sale for several years. After the award, it was finally declared bankrupt and discontinued. This explains part of a large amount in discontinued assets equivalent to 1.47 times npva within four years of the award. In 1983, some of the floppy-disk assets were sold for an equivalent to .56 of npva. Employment levels decreased 28 % by the end of our period of analysis.

In the final two years of our analysis, J's sales were down 20 % and net operating income as a percentage of sales fell one-third. Merger talks with Combustion Engineering Inc. started. A tender offer took place and stock purchase agreements were signed with the large shareholders of J. The merger was concluded in July of 1984.

Throughout the post-award period we observed a small negative change in cash compensation for the top executive group. This could be related to the fact that most of management compensation was tied to the "Executive Compensation Fund" which was in turn based on the year's operating income. Following the award, a large number of stock options were distributed to the top 3 executives reaching an equivalent to 1.8 % of outstanding shares. Management exercised large amounts of these options in the year following the award. Three members of the Freeman Family owned an average of 25.8 % of common (among them the CEO with 10 %). Management ownership was also significant (close to 30 %). Large cash dividend increases amounting to .56 of npva were distributed during the post-award period.

11)DYNAMICS CORP. vs. THE UNITED STATES GOVERNMENT:

Dynamics (DY) is an electronic components producer. Before the award it had four main divisions which designed and manufactured various products including: equipment for air distribution, air conditioning, medical diagnosis, generators, quartz and crystal products, filters, portable electrical appliances, and farm products.

In 1967, DY sued the US Government for unauthorized use of its system for checking the validity of computer solutions in space-weapon development. The year before the award, DY's market kept growing which resulted in profitable results for the company. In 1982, DY increased its investment in shares of CTS Corporation to 21.7 % (which we showed as asset acquisition in our data). CTS operated mainly in electronic components and metal products and was considered an affiliate of DY. Two years before the award, DY more than halved its holdings of CTS registering a large gain on the sale of shares.

In 1985, the Appeals Court affirmed the award favorable to DY except in the use of the appropriate interest rate in order to calculate pre- and post-judgement damages (this issue was sent for further consideration). The award was no longer subject to legal challenge. Therefore, although the actual cash was only received in 1988, the company registered it as a non-recurring asset and worked with this amount in its asset structure. The npva was equivalent to 6.6% of average sales or 9% of average total assets in 1983-84.

The change in gross investment during the first two years after the award was only equivalent to 0.2% of total assets or 2.7% of npva. In fact this number became negative for the whole four-year period. On the other hand, DY set out to regain its large share ownership of CTS investing an amount equivalent to 4.87 times npva in four years. The year following the court's decision, DY made a tender offer for 1 million shares of CTS spending an equivalent to 45% of npva in this transaction. The company kept increasing its holdings and by 1990, DY held 35% of CTS's common stock.

Some asset sales and dispositions began in 1986. That year, DY sold its farm equipment operations for a stock interest in the newly created independent company. The rest of the farm division was discontinued within 2 years after the award with an estimated loss equivalent to 14.5% of npva. At the end of the four-year period of analysis, DY's consumer appliance sector was also restructured with a cost equivalent to 7% of npva.

There was a large increase in liabilities the year of the court's ruling. Long-term debt multiplied tenfold in 1986. The long-term debt to total capitalization ratio jumped from .03 to .20 that year and remained near those levels for the rest of our period of analysis.

No dividend increases were announced after the court's ruling or after the actual cash payment of the award. DY continued its pre-award policy of stock repurchases. When we compared pre vs. post award repurchases we found that the changed was reduced to .15 of npva. Another difference was that although in pre-award years most repurchases were from the open market, after the award close to 40% of the total amount were from executives pertaining to the "Stock Benefit Plan". The top three executives's change in cash compensation amounted to 16 % of npva.