



ELSEVIER

Journal of Financial Economics 36 (1994) 337–360

**JOURNAL OF
Financial
ECONOMICS**

What do firms do with cash windfalls?

Olivier Jean Blanchard^a, Florencio Lopez-de-Silanes^b, Andrei Shleifer^{*,b}

^a*Massachusetts Institute of Technology, Cambridge, MA 02139, USA*

^b*Department of Economics, Harvard University, Cambridge, MA 02138, USA*

(Received February 1993; final version received March 1994)

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 eleven 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.

Key words: Cash flow; Agency theory; Lawsuits

JEL classification: G32; D92

1. 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 does this

*Corresponding author.

We are grateful to Sanjay Baghat for some data, to Winston Lin for research assistance, to Joetta Forsyth, Paul Gompers, Michael Jensen (the editor), Anil Kashyap, and a referee for comments, and to the NSF for financial support.

firm do with the money? Does it invest it? If so, does it stay in its own line of business or diversify? Does it keep the money inside the firm as cash? Or does it return the money to investors by reducing debt, raising dividends, or repurchasing shares? Or, alternatively, does this firm try to raise even more cash by increasing debt or selling divisions? Does 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 are interesting from the descriptive viewpoint, but also shed some light on several theories of corporate financing and investment decisions.

In a perfect capital market, a firm should not increase investment when investment opportunities do not change. Absent taxes, it does not matter whether the firm retains the cash or returns it to investors by cutting debt or raising dividends, since there is no difference between money inside and outside the firm. To the extent that money inside the firm is tax-disadvantaged, the firm should return the windfall to investors by reducing debt or repurchasing shares. Even with taxes, this firm should not raise more funds. Finally, the firm should not give any of the windfall to the managers, since their marginal products do not change.

When capital markets are not perfect, cash inside and outside the firm are no longer equivalent. First, investors do 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. Because investors ration capital to the firm, it has to forego some positive net present value projects (Myers and Majluf, 1983; Greenwald, Stiglitz, and Weiss, 1984). Getting a cash windfall enables such a firm to do projects that it cannot do otherwise.

Second, managers may have their own objectives that do not coincide with those of shareholders, and consequently invest in negative net present value projects. To prevent such bad investments, investors ration capital to firms (Jensen, 1986; Stulz, 1990; Hart and Moore, 1989). With agency problems, a cash windfall presents managers with opportunities not available before.

We look at several decisions of the firms in our sample to examine both the perfect capital markets model and these two alternatives. We go beyond recent studies that focus only on investment. Fazzari, Hubbard, and Petersen (1988) find that investment of non-dividend-paying firms is more sensitive to cash flows than that of dividend-paying firms. Hoshi, Kashyap, and Scharfstein (1991) report that Japanese firms without a close relationship with a bank, which may therefore be more capital-rationed, exhibit greater sensitivity of investment to cash flows than firms with a close banking relationship. Our paper, like theirs, examines the null hypothesis of perfect capital markets. But we also look at variables other than investment to shed more light on the alternatives to the perfect capital markets model.

Section 2 presents our data and shows that, in our sample, the investment opportunity set indeed does not change when firms win their lawsuits. Section 3 summarizes the implications of the three theories for the data. Section 4 looks at what happens to the firms that win lawsuits. Section 5 concludes.

2. The data

The selection process that led us to the 11 firms examined in this paper was as follows. We started by checking the Wall Street Journal Index (1980–1986) under ‘Antitrust News’, ‘Patents’, and ‘Suits’, and the New York Times Index (1980–1986) under ‘Suits’, to find a sample of 110 companies that won or lost awards during this period.

We then narrowed this sample using four criteria. First and most important, we excluded cases where the award was potentially connected to the marginal Q of the firm. This judgment 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 products were still being produced (17 firms), the litigation opened new market opportunities (4 firms), the litigation restrained active competitors (8 firms), the litigation pertained to asset or royalties disputes (12 firms), the suit concerned share purchases or takeovers (15 firms), the settlements consisted of asset or equity awards rather than cash (4 firms), the settlement was undisclosed or details were not revealed in 10-K forms (16 firms). This narrowed the sample to 34 firms.

Second, we insisted that the award be quantitatively 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, expenses, payments due to other parties, and taxes. When the award took the form of installment payments over several years, we calculated the net present value of these amounts using the current prime rate at the time of the award. We restricted the sample to firms for which the award (or present value of payments) net of expenses and fees (net award) is 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. Third, we required the availability of 10-K forms and proxy statements for the period from five years before to five years after the award, which reduced the sample by two firms. Finally, we removed five firms that were award losers, since we are interested in cash flow increases. This gave us the final sample of 11 firms.

Table 1 summarizes the characteristics of the awards in this sample. The table also lists 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

Table 1

The nature of the award

The table shows the reason for the suit and the effect of the award on current activities of the plaintiff inferred from the analysis of the plaintiff's production.

Plaintiff	Defendant	Year of filing/ Year of decision	Reason for the suit/ Effect on current activities
DASA	AT&T	1983/1984	Unfair market practices by AT&T in 1960/70s None: Discontinued products
UNC Resources	Gral. Atomic/ Gulf Oil	1975/1984	Nondelivery of uranium by UNC in 1973 None: Uranium no longer extracted
San/Bar	AT&T	1983/1984	Unfair market practices by AT&T in 1970s 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 1970s None: Discontinued line
Bio-Rad	Nicolet	1981/1984	Patent infringement Little: Small proportion of sales
Howell	Sharon Steel	1975/1985	Nondelivery of steel by Sharon in 1970s None
Pennzoil	Texaco	1984/1988	Breach of agreement None
Conrac	AT&T	1982/1984	Unfair market practices by AT&T in 1970s None: AT&T already barred from such practices
Jamesbury	US government	1963/1980	Patent infringement None: Discontinued product
Dynamics	US government	1967/1985	Patent infringement None: Discontinued product

award. We have three types of cases: unmet contracts, antitrust suits, and patent violations. In three examples, 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 opportunities. Another five cases concerned unfair market practices that no longer continued at the time of the

award. These antitrust suits included accusations of monopolizing trade (Diversified and San/Bar) and unfair market strategies by the defendant toward the plaintiff (Conrac, DASA, and Berkey). In fact, four out of these five cases were against AT&T for monopolizing particular segments of the telecommunications market and preventing the plaintiff from competing in these segments. In three out of these five antitrust suits, the products were not made anymore, in another it was a minor fraction of the plaintiff's output, and in the fifth the plaintiff had already left the market segment. Finally, the last three 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 does 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 award exceeds average income over the past two years. The median ratio of the net award to sales is 0.11 and that to assets is 0.22. Table 2 also shows that, for the median firm, legal fees absorb only 14 percent of the gross award. The two largest percentages reflect arrangements made before the suit for a fixed percentage amount; in both cases, the law firm is 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 amount going to the lawyers. The two shortest lawsuits (one year) correspond to the largest and the smallest payments to the lawyers.

Table 2
The size of the award

The table reports the main characteristics of the award. 'Net award' is the present value of the award, net of taxes and legal fees. 'Income' is the 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/Gross award' is the ratio of plaintiff's legal fees related to the suit to the gross award (before taxes and fees).

Company	Net award (millions of US\$)	Income	Net award/ Sales	Net award/ Assets	Fees/ Gross award
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
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

Starting in Table 2, we roughly order the 11 firms from those that are in significant trouble to those that are not. This rough classification is based partly on the objective financial conditions of the firms, such as loss making, and partly on the self-reported status in annual reports. Except for Diversified, which is making losses but recovering and reporting adequate funds for its operations, the ordering is straightforward.

Table 3 provides information on the financial condition, investment opportunities, and actual pre-award investment of the sample firms. The table shows that firms in this sample are generally unprofitable, with the maximum ratio of income to sales of 0.08. The evidence on average Tobin's Q s for sample firms suggests that their investment opportunities are poor. With the exception of DASA, which has virtually no assets (see Table 2), firms in this sample have very low Q s, with a median of 0.52. All firms but DASA and Pennzoil (whose award is largely anticipated) have Q s well below 1, suggesting that they should not invest the awards but return them to shareholders if they act in these shareholders' interest. This assumes, of course, that the average Q reflects the marginal Q , which is a standard, but not necessarily safe, assumption.

Table 3

The initial position of the firms

The table reports characteristics of the winning firm at the time of the announcement of the award. The second column shows the main line of business of the company at the time of the award. 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, of current net liabilities, and of 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 net award 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 $t - 1$.

Company	Main line of business	Q	$Q(-)$	Income/ Sales	Inv/ Assets	Debt/ Assets
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
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

The evidence on low Q s is even stronger once we realize that the estimates of Q are upward-biased. 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 was 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 award to the book value of assets, which we call $Q(-)$ in Table 3. The median value of $Q(-)$ in the sample is only 0.35, pointing to substantially less attractive investment opportunities than even those indicated by raw Tobin's Q . Not a single $Q(-)$ is above 0.6. 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 its book value.

The pre-award gross investment numbers in Table 3 are consistent with the Tobin's Q s. The median investment rate is a low 0.06 of assets. The fact that firms in our sample do not have attractive investment opportunities, and invest very little in their own lines of business, enables us to come up with more accurate predictions based on the three theories.

3. Theoretical issues

In this section, we discuss the implications of the asymmetric information and agency models for firms that do not have attractive internal investment opportunities, such as the firms in our sample. Rather than focus just on investment, we also examine the implications of these models for acquisitions and divestitures, dividend policy, capital structure, and managerial compensation.

3.1. Asymmetric information

In the asymmetric information model of Myers and Majluf (1983) and of Greenwald, Stiglitz, and Weiss (1984), managers act in the interest of shareholders, but firms are rationed in the capital market because investors are unsure of the quality of these firms' investment projects. To examine the implications of this model for cash windfalls, we distinguish three types of investment: investment in the firm's own line of business, diversification, and investment in restructuring. Traditionally, the asymmetric information models are applied to young, growing firms with attractive opportunities for investment in their own lines of business. The firms in our sample, however, appear to lack such opportunities. For such firms, the asymmetric information model, like the

perfect capital markets model, predicts that firms should not invest in their own lines of business.

In contrast to investment in a firm's own line of business, diversification is unlikely to be a positive net present value investment. There is indeed strong evidence that diversification was at best a zero, and more probably a negative, net present value investment in the 1980s, which is the period of our data (see Morck, Shleifer, and Vishny, 1990; Kaplan and Weisbach, 1992). This implies that, as the first-order effect, managers of our firms should not diversify if they act in the interest of shareholders. It is possible that firms lacking investment opportunities now but expecting to get them in the future diversify as a mechanism for storing cash for the future so as to avoid being capital rationed then. Presumably, firms with higher Q s are more likely to have good opportunities in the future, and hence to have this reason for diversification in the asymmetric information model. Also, it is not clear that diversification is superior to holding cash as a means of storing capital.

The final 'investment' decision we focus on is closures and divestitures, which can be somewhat speculatively viewed as an investment in restructuring the firm's operations. As our (and much other) evidence indicates, such restructuring 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 may be unable to afford divestitures for two reasons. First, it may 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 may keep the firm from taking an accounting hit. When a firm gets a cash windfall, it may become able to make this investment in restructuring, both because it has the necessary cash and because it can afford some accounting losses. We view divestitures and plant closings as potentially positive NPV investments for capital-rationed firms.

This analysis suggests that firms lacking attractive internal investment opportunities, such as those in our sample, should not invest the windfall in their own lines of business, should diversify only in exceptional circumstances, and should restructure through divestitures and closures. The money left over should be distributed back to investors as dividends, share repurchases, or debt reductions. For our firms, the predictions of the asymmetric information model are similar to those of the perfect capital markets model, except for expensive closures and divestitures.

Finally, what should happen to executive compensation after the windfall? On a literal interpretation of the asymmetric information model, 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 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 plaintiff managers should get much of the lawsuit winnings implausible, since lawsuits are fought and won by lawyers, not by managers. However, some readers will undoubtedly find this *ex post* settling-up argument compelling.

3.2. *The agency model*

Any model in which managers have objectives different from those of shareholders is an agency model. Because most formal agency models do not deal with all the variables we examine in this paper, we use informal analysis along the lines of Jensen (1986). We 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 (Jensen, 1993).

Agency models exhibit credit rationing (Hart and Moore, 1989; Stulz, 1990) because investors limit the funds they make available to the managers to prevent their investment in negative NPV projects. As a result, managers spend the windfall on the projects they like rather than distribute the cash to investors, even if these projects do not serve shareholders. If the internal opportunities are poor, the firm invests the windfall in diversification, which reduces the likelihood of future liquidation or, more generally, managerial risk. By diversifying, rather than holding cash, managers can make the firm a less attractive target to potential acquirers and liquidators, since divisions are much less liquid or manageable by those acquirers than cash in hand. 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, and preferred to holding cash only under some 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 does not accomplish this objective as effectively.

With respect to financial policy, the agency model predicts that even firms with no attractive investment opportunities do not spend the windfall on

dividends or share repurchases. The share repurchases that do take place should be targeted at large shareholders or the management, rather than small shareholders. Because the management responds to threats to its control, it placates or buys out core investors while doing nothing for shareholders in general. In contrast, the asymmetric information model predicts open market 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, thus reducing the likelihood of future interference by the lenders in the case of 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 to expand the domain of their control. Despite these ambiguities, 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 unambiguously predicts that debt should not rise, whereas in the latter debt may 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 offered incentives to act in the interest of shareholders, including ex post settling up (Fama, 1980), whereby managers get a prize if the firm, say, wins a lawsuit. Another agency view of compensation is that managers grab whatever profits they can get away with, and winning a lawsuit allows them to get a lot of money without being taken over or sued by the shareholders for violations of fiduciary duty. As a result, managers get

Table 4

The predictions of different theories for changes following a cash windfall

The table shows the main predictions of the perfect capital markets, asymmetric information, and agency theories for changes following a cash windfall, including those in: (1) investment in own lines of business, (2) diversification (investment in other lines of business not present before the award), (3) divestiture of existing lines of business or assets, (4) dividends and share repurchases, (5) managerial compensation, and (6) long-term debt of the company. The predictions are for firms with no attractive internal investment opportunities, such as the firms in our sample.

Variables	Perfect capital markets	Asymmetric information	Agency
Investment in own lines of business	0	0	0 or up (small)
Diversification	0	0 or up (small)	Up
Divestiture	0	Up	Up
Dividends or open market share repurchases	Up	Up	0
Managerial compensation	0	0	Up
Long-term debt	0 or down	0 or down	Ambiguous

a large part of the windfall. This prediction differs from that of the asymmetric information model, in which managers already act in the interest of shareholders, and hence should not get much if any of the cash windfall.

The predictions of the perfect capital market model, the asymmetric information model, and the agency model that we discussed above are summarized in Table 4.

4. Analysis of the changes

4.1. Event study

Table 5 shows the change in the winning firm's value relative to the net award around the date of the announcement of the award. In the three-day window around the event date, the median change in the market value of the winning firm is 0.151 of the award. The median rises to about 0.3 if we look at a 10- or a 100-day window. The market value of the winning firm rises by substantially less than the net award.

Table 5
Event study

The table shows the plaintiff's cumulative abnormal excess returns as a percentage of the net award. This variable is defined as the cumulative abnormal excess return (in dollars) on the stock of the company multiplied by the share price and the number of shares outstanding, divided by the net award. The last three columns report the corresponding values for the windows of 100, 10, and 3 days around the event of the announcement of the award.

Company	Date of announcement of litigation award	Plaintiff's cumulative abnormal excess returns as a percentage of the net award		
		Window around announcement of award		
		100 days	10 days	3 days
DASA	July 1984	– 0.007	0.003	0.002
UNC Resources	May 1984	0.545	0.375	0.151
San Bar	July 1984	1.075	1.108	0.754
Berkey Photo	September 1984	0.105	0.328	0.660
Diversified	May 1984	1.353	– 0.078	– 0.182
Bio-Rad	September 1984	– 0.125	– 0.032	0.007
Howell	May 1985	0.255	0.446	0.967
Pennzoil	April 1988	0.318	– 0.173	– 0.056
Conrac	July 1984	– 0.621	0.498	0.681
Jamesbury	August 1984	0.572	1.260	1.227
Dynamics	June 1985	0.439	– 0.476	0.038
Median		0.318	0.328	0.151

These results have several interpretations. In most cases, the litigation has lasted for several years, and some of the award is anticipated. Alternatively, the low change in the market value of the winning firm is consistent with the agency interpretation of the data, which says that the share price increase is lower than the value of the award because the firm will waste the money. The event study evidence thus does not credibly distinguish between the alternative hypotheses. Interestingly, the event study evidence is very similar to that of Lang, Poulsen, and Stulz (1994), who show that the stock market discounts the proceeds of asset sales retained by selling firms, particularly in the case of poorly performing firms (like the ones in our sample).

4.2. Investment

Table 6 presents the results on changes in gross investment after the award. For the sample as a whole, the median fraction of the net award spent on investment above historical levels is 0.06, consistent with the extremely low Q_s for the sample. This fraction is lower for the more-troubled than for the less-troubled firms, again consistent with their Q_s . An interesting firm is Jamesbury, which starts the construction of a new plant for its new products after the award. In Table 5, Jamesbury is the sole firm whose market value rises

Table 6
Changes in investment

The table reports the changes in plaintiff's investment following the announcement of the award. 'Total assets' are from the annual report at the end of the fiscal year before the award ($t - 1$). ' ΔInv ' is the average of gross investment in years t and $t + 1$ minus the average of gross investment in years $t - 2$ and $t - 1$. ' $\Delta \text{Inv} / \text{Assets}$ ' is ΔInv divided by total assets in year $t - 1$. ' $\Delta \text{Inv} / \text{Net award}$ ' is ΔInv divided by the net award.

Company	Total assets (millions of US\$)	$\Delta \text{Inv} / \text{Assets}$	$\Delta \text{Inv} / \text{Net award}$
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
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

by more than the net award on the announcement, suggesting that it might indeed have been unable to undertake this positive NPV investment prior to the award. These data for Jamesbury are consistent with Myers and Majluf (1983). For other firms, the results do not distinguish between the three theories since all of them predict that firms should not be making very negative NPV investments.

4.3. Asset changes

Table 7 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, seven out of 11 firms do not discontinue any assets; after the award, only one firm does not. The median fraction of assets discontinued after the award is 0.04 for the sample; for the top four most-troubled firms, the median is 0.30. 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 two years before the award). Pennzoil's intercorporate restructuring includes discontinuing almost 30 percent of total assets. Conrac starts a restructuring program involving closing and consolidation of production with a cost equivalent to 96

Table 7
Asset dispositions before and after the award

The table reports the average asset dispositions two years before and two years after the announcement of the award. 'Sales' is sales of assets. 'Discontinued' is value of 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 $t - 1$.

Company	Average of 2 years before the award		Average of 2 years after the award	
	Sales/ Assets	Discontinued/ Assets	Sales/ Assets	Discontinued/ Assets
DASA	0.50	0.00	0.00	0.39
UNC Resources	0.06	0.04	0.05	0.66
San/Bar	0.04	0.00	0.00	0.20
Berkey Photo	0.01	0.01	0.02	0.03
Diversified	0.05	0.00	0.01	0.04
Bio-Rad	0.19	0.00	0.30	0.01
Howell	0.03	0.14	0.05	0.00
Pennzoil	0.00	0.11	0.03	0.29
Conrac	0.25	0.00	0.04	0.13
Jamesbury	0.00	0.00	0.00	0.00
Dynamics	0.28	0.00	0.03	0.01
Median	0.05	0.00	0.03	0.04

percent of the net award. DASA and San/Bar also discontinue part of their production and manufacturing activities in the first two years.

The increase in asset discontinuances is broadly consistent with the low Tobin's Q s for these firms, which signal that they must disinvest. We noted in Section 3 that firms might delay discontinuances until receiving the award because they are so expensive. The data support this conjecture. First, assets are often disposed of at a loss. For example, UNC's loss on disposal in the award year (before loss from operations) is 1.02 of the net award. Incurring such a 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 very high. For example, by the end of the first year after the award, San/Bar and Conrac fire 45 and 26 percent of their employees, respectively, in connection with their asset retirement programs. Doing so requires large severance payments and other costs. UNC's costs of environmental cleanup associated with the closing of its mining and uranium operations represent close to 54 percent of the net award and 22 percent of the total assets. For these firms, the award provides the cash to pay for asset retirements and discontinuances. A second result shown in Table 7 is a slight decrease in asset sales (as a percentage of assets) after the award, from the median of 0.05 to 0.03. The results on asset sales and dispositions point against the perfect capital markets model, which predicts no change. However, the results do not distinguish between its alternatives.

Table 8 shows a sharp rise in asset acquisitions after the award. We observe three types of behavior. A group of three companies do not acquire significant assets after the award. Curiously, all three of them (San/Bar, Conrac, and Jamesbury) merge within three years after the award. The other two groups can be divided into more troubled (DASA, UNC, Berkey) and less troubled (Diversified, Bio-Rad, Howell, Pennzoil, Dynamics), and they behave very differently. The more-troubled firms acquire only in new lines of business, with a median of 0.23 of total assets or more than the total amount of the award. DASA, the former manufacturer of telephone peripheral equipment, buys oil wells and a credit collection business. UNC acquires a communications carrier and starts providing air services such as pilot training and turbine repairs. Berkey engages in the business of sales promotion for suppliers of consumer goods and services while selling its traditional photofinishing stores. In contrast, the less-troubled firms acquire primarily in the old lines of business, with the exception of Diversified Industries, which actually diversifies by investing in both old and new lines. If we exclude the three firms that merged after the award, the five less-troubled companies acquire assets for between 0.9 and 4.88 of the net award.

The fact that the less-troubled 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 skeptical about this interpretation, given the low Tobin's Q s of these less-troubled firms and low investment in their own business, both of which suggest that they should not

Table 8

Acquisitions before and after the award

The table reports acquisitions before and after the award. 'Total acq/Assets' is 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 between years t and $t + 3$ in any line of business existing prior to the award. 'New lines' is the sum of gross acquisitions between years t and $t + 3$ in new lines of business. 'Old lines/Assets' and 'New lines/Assets' are ratios to total assets in year $t - 1$. 'Total acq/Net award' is the sum of acquisitions in old and new lines between years t and $t + 3$ divided by the net award.

Company	Pre-award	Post-award		
	Total acq/ Assets	Old lines/ Assets	New lines/ Assets	Total acq/ Net award
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
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	0.10	0.00	0.00	1.01

^aCompany merged after two years; acquisitions over t and $t + 1$ only.

^bCompany merged after three years; acquisitions over t , $t + 1$, and $t + 2$.

expand in related businesses, either. One could argue that these firms' Q s for related acquisitions are higher than their Q s for internal investment, although in principle the market Tobin's Q should measure the quality of best investments available to the firm. The more natural interpretation 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 more-troubled firms is even harder to reconcile with the asymmetric information model. One could argue that managers diversify solely to smooth earnings, thus avoiding facing credit constraints in the future. But how likely are their investment opportunities to improve so much, given their low Tobin's Q s, absence of reinvestment in own business, and substantial closures and divestitures? The more likely value-maximizing strategy for these firms is to liquidate faster. One can also argue that these firms diversify to take advantage of tax loss carry-forwards, but these appear to be too small to justify the magnitude of diversification. Most plausibly, the managers' preference for the survival of the firm brings them to diversify, assuring that the firm continues as an independent entity.

Consistent with this interpretation, diversifying acquisitions turn out not to be successful, and many of them are divested within a short time. DASA divests two of its three new businesses within two years, and keeps only the oil wells (and tries another diversification effort). Diversified makes a major acquisition within two years after the award, but puts it on the block within three years. Pennzoil starts two new lines of business after the litigation settlement, but discontinues the major one, 'Filtration Products', two years later at a large cost. These examples are most easily understood in terms of the agency model.

4.4. Capital structure changes

Table 9 presents some results on changes in long-term debt. We focus on long-term changes in leverage, specifically from the year before to three years after the award. Virtually all the firms in the sample raise their long-term debt relative to its level the year before the award. The median debt level rises by 0.15 of the net award, and by 0.46 of its pre-award level. Since capitalization also rises, however, the median ratio of debt to total capitalization falls slightly. Still, firms borrow more after getting the cash windfall, rather than return it to the debtholders. Most firms renegotiate their prior debt contracts and open new lines of credit on more favorable terms. The only exception is Conrac, which continues its pre-award strategy of sharply cutting debt. The year before it is taken over, Conrac's debt falls to 3 percent of total capitalization.

Both the asymmetric information and the agency models can in principle predict the increase in long-term debt. However, the asymmetric information model only predicts 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 return money to investors rather than borrow more. The agency model, in contrast, predicts that debt might rise either because managers expand when 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 long-term debt in the absence of attractive investment opportunities supports the agency interpretation of the data.

4.5. Dividends and share repurchases

The results on dividends are presented in Table 10. The median increase in dividends as a fraction of the net award is zero. This result is inconsistent with the perfect capital markets model, which argues that firms without attractive investment opportunities should pass on the cash windfall to shareholders. For the same reason, it is also inconsistent with the asymmetric information model. It does not appear that these firms are prevented from paying dividends by debt covenants.

Table 9

Changes in long-term debt before and after the award

This table reports the change in long-term debt of the plaintiff during comparable length periods before and after the award. 'Pre-award Debt/Total capitalization' is the average of long-term debt to total capitalization for years $t - 2$ and $t - 1$. 'Total capitalization' is long-term debt plus the value of shareholders' equity. 'Pre-award Δ Debt/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 capitalization)' 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 Δ Debt/Debt' is the change in long-term debt from $t - 1$ to $t + 3$, divided by long-term debt in year $t - 1$. 'Post-award Δ Debt/Net award' is the change in long-term debt from $t - 1$ to $t + 3$, divided by the net award.

Company	Pre-award		Post-award		
	Debt/Total capitalization	Δ Debt/Debt	Δ (Debt/Total capitalization)	Δ Debt/Debt	Δ Debt/Net award
DASA	0.00	n.a. ^c	0.67	n.a. ^c	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
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. ^c	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

^aCompany merged two years after the award; pre-award data includes years $t - 2$ and $t - 1$, while post-award data includes years t and $t + 1$.

^bCompany merged three years after the award; pre-award data includes years $t - 3$ to $t - 1$, while post-award data includes years from t to $t + 2$.

^c'n.a.' is the case where initial debt is equal to zero, so that the ratio is not defined.

Of the firms that raise dividends, primarily the less-troubled ones, most declare a special dividend or raise dividends within a year of the award. Two firms, Howell and Jamesbury, pay out large percentages of the award to the shareholders. Both of these firms have very large management and family ownership, and hence a substantial fraction of the dividend payout goes directly to controlling shareholders.

For income tax reasons, firms may want to return cash to the shareholders through share repurchases rather than cash dividends. The evidence in Table 10 suggests that some firms repurchase shares, although by no means in the full amount of the net award. Within three years of the award, the median fraction

Table 10

Changes in dividends and stock repurchases

The table reports the changes in cash dividends and stock repurchases before and after the award. ' Δ Dividends/Net award' is 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 award. 'Repurchases/Net award' is the sum of stock repurchases in years t to $t + 3$, divided by the net award. ' Δ Repurchases/Net award' is 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 award.

Company	Δ Dividends/ Net award	Repurchases/ Net award	Δ Repurchases/ Net award
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
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

^aCompany merged two years after the award; pre-award data includes years $t - 2$ and $t - 1$, while post-award data includes years t and $t + 1$.

^bCompany merged three years after the award; pre-award data includes years from $t - 3$ to $t - 1$, while post-award data includes years from t to $t + 2$.

spent on repurchases is 0.29. However, if we compare repurchases before and after the award, the median incremental repurchases are only 0.15 of the net award.

More interestingly, repurchases are generally not open-market, but targeted at large outside shareholders of the firm. In all the cases of repurchase save Pennzoil, initial management ownership exceeds 12 percent of the shares, with the median of over 20 percent. The share repurchase often eliminates large shareholders other than the management. Howell, for example, repurchases 21 percent of outstanding shares from the daughter and other members of the founder's family. The firm also buys out the 25 percent stake owned by Sharon Steel, the defendant in the litigation. Meanwhile, the CEO (son of the founder) raises his personal stock holdings from 30 to 53 percent of outstanding shares, and becomes the trustee of the 14 percent block bought by the ESOP. Some large shareholders of Pennzoil and Bio-Rad also sell, while the management raises its percentage holding of the company. UNC's management buys Maxxam's 20 percent stake at close to market prices, and warrants for another 15 percent of stock in exchange for a ten-year standstill agreement. UNC also

buys back at above-market-price the 36 percent block of shares issued to Chevron (the defendant) as part of the award. Also three years after the award, Berkey repurchases 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 is canceled by Berkey's repurchase.

The evidence suggests that dividends are used mainly when managers stand to collect a lot themselves, and share repurchases are used to eliminate potential challenge to insiders' control from large shareholders. This evidence supports the agency model over the asymmetric information model of selfless managers acting in the interest of all shareholders.

4.6. Executive compensation

Table 11 shows that a median of 16 percent of the net award is given to the top three executives in the form of extra cash compensation over three years following the award. As a result, the median cash compensation in the three years after the award is 84 percent higher than in the three years before. Some companies also 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 represents 6.8 percent of the company's share of the net award. Total compensation for the top four executives nearly quadruples that year, not counting the stock options they received, which amounted 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 promises golden parachutes to these two executives, which are exercised the following year as the company merges. UNC's top three executives retire the year of the award and collect special bonuses amounting to 3 percent of the net award. Pennzoil's president retired a year before the award, but the company rehired him and delayed the retirement of the CEO and another director. Right after the award, the 'old three' retire, collecting over 20 million dollars, close to 1 percent of the large net award. In all these cases, 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 much of the windfall. The estimates of their productivity do not change by much. They should 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, plaintiff lawyers win courtroom battles and managers win marketplace battles. More plausibly, managers face only limited pressure from shareholders, and so can redistribute some, though not all, of the windfall to themselves, consistent with the agency model.

Table 11

Changes in management compensation and stock ownership

The table reports changes in management compensation and stock ownership before and after the award. ' Δ Cash' is the difference in millions of US\$ between the sum of total cash compensation for the top three executives from t to $t + 3$ and the sum of total cash compensation between years $t - 4$ and $t - 1$. ' Δ Cash/Cash' is Δ Cash divided by the sum of total cash compensation for the top three executives from $t - 4$ to $t - 1$. ' Δ Cash/Net award' is Δ Cash divided by the net award. ' Δ Stocks/Stocks' is the difference between the number of stock options and common shares given to the three 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' is the average ownership of common stock of the whole management team reported each year. 'Pre-award' numbers average the years between $t - 4$ and $t - 1$, while 'post-award' data average the years between t and $t + 3$.

Company	Δ Cash (in millions of US\$)	Δ Cash/ Cash	Δ Cash/ Net award	Δ Stocks/ Stocks	Management stock ownership	
					Pre-award	Post-award
DASA ^a	1.487	2.92	0.19	0.17	0.063	0.165
UNC Resources	4.607	1.35	0.03	0.05	0.013	0.021
San/Bar ^b	1.584	0.93	0.18	0.00	0.375	0.400
Berkey Photo	0.787	0.41	0.23	– 0.01	0.147	0.079
Diversified	1.690	0.84	0.16	– 0.02	0.145	0.184
Bio-Rad ^c	0.478	0.35	0.30	0.03	0.563/0.327	0.622/0.249
Howell	0.961	0.90	0.17	0.00	0.335	0.463
Pennzoil	20.227	3.17	0.01	0.00	0.043	0.035
Conrac ^d	0.343	0.24	0.03	– 0.01	0.140	0.103
Jamesbury	– 0.168	– 0.11	– 0.04	0.01	0.269	0.298
Dynamics	1.496	0.57	0.16	0.00	0.125	0.110
Median	1.487	0.84	0.16	0.00	0.145	0.165

^aFor this company, the numbers for ' Δ Cash', ' Δ Cash/Cash', ' Δ Cash/Net award', and ' Δ Stocks/Stocks' include the top two executives only.

^bCompany merged two years after the award; pre-award data includes years $t - 3$, $t - 2$, and $t - 1$, while post-award data includes years t , $t + 1$, and $t + 2$.

^cCompany has two classes of stock. The first number of management stock ownership data is class B shares with full voting power; the second number is management stock holdings of class A shares with limited voting power.

^dCompany merged three years after the award; pre-award data includes years from $t - 3$ to $t - 1$, while post-award data includes years from t to $t + 2$.

4.7. Evaluation of performance

We use Jensen's (1993) approach to evaluate investment performance of companies in our sample, namely to compare market value of each firm three years after the award to a hypothetical value that would obtain if instead of investing in R&D, physical plant, and diversification the company put the

money into a comparable risk bank account. Table 12 presents the three performance measures, calculated according to Jensen (1993) and described in the appendix to his paper. The three measures make different assumptions as to what investment is needed to maintain the market value of the firm. A negative performance measure suggests that a company wasted money through its active investment strategy relative to the more passive alternative.

The results suggest that most companies in the sample lose value from their R&D, investment, and diversification strategies. Under measure 1, which has the most straightforward interpretation of comparing the final value of the company to the alternative which would obtain if all R&D, investment, and diversification money was invested at 10 percent, the median company is worth \$31

Table 12

Analysis of corporate R&D and investment programs

The table provides a measure of the effectiveness of corporation decisions during three years after the award by measuring the productivity of corporate R&D, capital expenditures, and acquisitions. The difference in value between a benchmark strategy for investing R&D and net capital expenditures (including acquisitions) in a comparable-risk bank account and the actual strategy followed by the company after the cash windfall under three different assumptions. 'R&D & Net cap. exp.' is the aggregate value of research and development expenditure plus the net capital expenditure (capital expenditure less depreciation) for the years $t + 1$, $t + 2$, and $t + 3$. The three measures are obtained by subtracting from the actual total value of the company at the end of $t + 3$ the total value of the benchmark strategy under three different assumptions, and assuming $r = 10$ percent. 'Measure 1' assumes the beginning value of equity is maintained; 'Measure 2' assumes the ending equity value is zero; 'Measure 3' assumes the ending equity value equals the beginning value, and intermediate cash flows are smaller by the amount paid to equity under the company's strategy. For exact expressions of these measures see the appendix in Jensen (1993).

Company	R&D & Net cap. exp. (millions of US\$)	Performance measures		
		Measure 1	Measure 2	Measure 3
DASA	1.885	– 2.610	– 0.055	– 2.455
UNC Resources	216.054	– 337.797	– 135.462	– 208.103
San/Bar ^a	1.832	4.463	12.431	– 3.144
Berkey Photo	7.244	– 6.802	9.742	15.384
Diversified	26.359	– 31.123	– 0.091	– 43.587
Bio-Rad	69.805	– 61.025	– 46.803	– 55.615
Howell	3.809	6.279	21.437	19.670
Pennzoil	3,941.247	– 4,859.524	– 2,239.429	– 4,073.749
Conrac ^b	24.188	– 35.101	60.570	– 20.394
Jamesbury	24.180	– 27.309	– 25.542	– 4.419
Dynamics	49.028	– 86.726	33.943	– 70.625
Median	24.188	– 31.423	– 0.055	– 20.394

^aCompany merged after two years; acquisitions over t and $t + 1$ only.

^bCompany merged after three years; acquisitions over t , $t + 1$, and $t + 2$.

million less at the end of three years than it would be under the passive investment strategy. Other measures show similar patterns. Interestingly, even Jamesbury, which on some measures looks like a Myers–Majluf company, is destroying value by investing.

One company that stands out in this calculation is Pennzoil, which, according to the various measures, has destroyed 2 to 4 billion dollars of value relative to a more passive investment strategy in the three years after the award. This evidence solves the puzzle raised by Cutler and Summers (1988) in their provocative study of the Texaco–Pennzoil litigation (and generalized by Baghat, Brickley, and Coles, 1994, for other firms). Cutler and Summers notice that the combined value of Texaco and Pennzoil declined as a result of the litigation. They find this fact puzzling, since the award from Texaco to Pennzoil is just a transfer, and should not affect the combined value of the two firms. The evidence in Table 12 suggests that the reason that the combined value of the two firms declined is that the market rationally anticipated that management of Pennzoil would spend the award on negative NPV projects, which it proceeded to do.

The evidence in Table 12, consistent with that from event studies, diversification, dividends and executive pay, favors the agency model relative to the asymmetric information model.

5. Conclusion

This paper presents a large number of facts about a small sample of firms receiving cash windfalls. This sample contains firms without attractive internal investment opportunities, as evidenced by their low Q s and low investment in their own businesses even after the windfall. Nevertheless, the managers of these firms choose 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 borrow more after the windfall. The two exceptions to that are the increases in targeted share repurchases from blockholders and in executive compensation following the award. The managers use the money they keep inside the firm to discontinue some loss-making businesses and then to acquire other firms in either related or unrelated lines of business. The unrelated acquisitions in particular often fail and are digested within a few years. When managers do not make acquisitions and instead hold cash, the firms themselves are acquired in a few years. An evaluation of the investment and diversification strategies of these firms suggested that a median firm does not use the award to create value.

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 also predicts substantial payouts by firms with poor 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 strategies hard to reconcile with the asymmetric information model. The evidence supports the agency model of managerial behavior, in which managers strive to ensure the long-run survival and independence of their firms with themselves at the helm. They do this 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. While our sample is too small to reach definitive conclusions, the preference for independence explains the evidence most parsimoniously.

In fact, one finding that we did not anticipate at all offers an interesting angle on the agency model. We find that firms that hold the cash and do not waste it are themselves acquired within a few years. This finding suggests that the only equilibrium strategy for a managerial firm is to waste the cash, for otherwise another managerial firm will buy it and waste the cash itself. Diversification makes the firm less attractive to these acquirers than holding cash, and hence enables the firm 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. Consistent with Jensen (1986), takeovers by bad acquirers make agency problems worse, since fear of takeovers by money-wasting acquirers prompts managers who might otherwise act in the interest of shareholders to waste money themselves.

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