



American Finance Association

Asset Sales, Investment Opportunities, and the Use of Proceeds

Author(s): Thomas W. Bates

Source: *The Journal of Finance*, Vol. 60, No. 1 (Feb., 2005), pp. 105-135

Published by: Blackwell Publishing for the American Finance Association

Stable URL: <http://www.jstor.org/stable/3694835>

Accessed: 23/11/2009 12:35

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=black>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Blackwell Publishing and American Finance Association are collaborating with JSTOR to digitize, preserve and extend access to *The Journal of Finance*.

<http://www.jstor.org>

Asset Sales, Investment Opportunities, and the Use of Proceeds

THOMAS W. BATES*

ABSTRACT

This study examines the allocation of cash proceeds following 400 subsidiary sales between 1990 and 1998. Retention probabilities are increasing in the divesting firm's contemporaneous growth opportunities and expected investment. Retaining firms, however, also systematically overinvest relative to an industry benchmark. Shareholder returns to retention decisions are positively correlated with growth opportunities and benchmarked investment, but negatively correlated with benchmarked investment for firms with poor growth opportunities. Shareholder returns to debt distributions are increasing in industry-benchmarked leverage. Overall, the results of this study cohere with the hypothesized trade-off between the investment efficiencies associated with retained proceeds and the agency costs of managerial discretion and debt.

SALES OF LARGE CORPORATE SUBSIDIARIES became an increasingly common form of business restructuring by U.S. corporations through the decade of the 1990s. The Securities Data Corporation (SDC) reports that the number of large subsidiary sales, valued at \$75 million or more, increased steadily from 127 transactions completed in 1990, to 535 transactions completed in 1998. Unlike other divestiture methods, such as asset spinoffs and carveouts involving the distribution of proceeds to a subsidiary, a divesting firm typically receives remuneration at the effective date of a sale. Often this compensation includes a substantial cash component. For example, average cash compensation was consistently in excess of 80% of transaction value in large subsidiary sales completed between 1990 and 1998. In this sense, asset sales rarely result in an immediate reduction in assets, but often substantially increase liquidity for the divesting firm. This observation is significant from a shareholder's perspective because, similar to free cash flow from operations, cash proceeds from a sale can be reallocated to the unfunded projects of the divesting firm, albeit at the discretion of management.

The extant literature cites countervailing costs and benefits associated with the retention of sale proceeds for subsequent investment by a divesting firm. On the one hand, capital market frictions make raising external capital costly

*Thomas W. Bates is at the Department of Finance, Alfred Lerner College of Business and Economics, University of Delaware, Newark, DE 19716. This paper has benefited from comments provided by Jeffrey Allen, Craig Dunbar, Rick Green (the editor), Kathleen Kahle, Kenneth Lehn, Michael Lemmon, Erik Lie, Gershon Mandelker, and an anonymous referee. I also thank Natasha Apollovna and Maura Dietz for their valuable research assistance.

for firms. Hite, Owers, and Rogers (1987) posit that from an efficiency perspective a portion of the value realized from an asset sale can include gains from the application of proceeds to the remaining unfunded but positive net present value (NPV) projects of the firm. On the other hand, managerial incentives to retain proceeds may extend primarily to the financing of projects that benefit managers themselves rather than shareholders. The lack of explicit constraints over management's application of retained proceeds has led others, including Lang, Poulsen, and Stulz (1995), to argue that any potential financing benefits are likely offset by the agency costs of managerial discretion.

This paper provides evidence on the role of efficiency and agency incentives on management's allocation of sale proceeds between the firm and its claimants. To examine these countervailing incentives this study considers the association between the investment opportunities and post-sale capital expenditures of divesting firms, and their allocation of sale proceeds. In addition, this investigation empirically tests whether the investment behavior of retaining firms can explain the cross-sectional variation in returns to shareholders of firms retaining proceeds, and specifically, whether investment can account for the past empirical finding that retention decisions, on average, reduce an otherwise positive shareholder reaction to the announcement of an asset sale.

This research examines the revealed payout and retention decisions of divesting firms following 400 large cash-for-asset sales between the years 1990 and 1998. Unlike other empirical studies of corporate payout policy, this investigation identifies how firms respond to sudden and significant changes in cash flow, rather than the distribution of excess cash per se. This perspective allows the analysis to incorporate observed null or retention decisions, as well as decisions to repay debt and/or equity, thus providing a more complete specification for the allocation of cash between the firm and its claimants.

The evidence reported here highlights a significant role played by investment opportunities and capital expenditures on the decision to retain sale proceeds. In keeping with the efficiency perspective, the likelihood of a retention decision is increasing in the divesting firm's growth opportunities and a proxy for management's expectation regarding post-sale capital expenditure. Retaining firms, however, consistently invest at rates in excess of their industry peers. Excess investment cannot be attributed to pre-sale financial constraints on retaining firms; in fact, positive net-of-industry investment is most prevalent in the subset of retaining firms that are financially unconstrained. These latter findings are consistent with an agency-based motive for the retention of sale proceeds.

Beyond financing immediate investment, the decision to retain cash may also be efficient for shareholders if proceeds improve financial flexibility for firms facing uncertain or constrained access to internal capital. The empirical analysis does not support a flexibility motive for retention decisions; however, as measures of prior dividend activity, income volatility, cash stock, and cash flow fail to provide explanatory power in regressions predicting retention decisions by divesting firms. Finally, the likelihood of a distribution of sale proceeds to either debt or equity is increasing in the equity ownership of officers and

directors. This finding is consistent with the perception that incentive alignment deters retention decisions that might otherwise be costly for shareholders.

To consider the trade-off between the efficiency benefits and managerial agency costs of retained proceeds this paper examines the shareholder wealth responses to retention decisions, delineated by a firm's growth opportunities and post-sale investment activity. Announcement period abnormal returns to retention decisions are increasing in industry-benchmarked investment for the subset of divesting firms with superior contemporaneous growth opportunities. Shareholder returns are, however, decreasing in net-of-industry investment for the subsample of firms with relatively poor growth opportunities. These findings imply that efficiency benefits accrue to the shareholders of firms that utilize proceeds to fund remaining positive NPV projects, but also support the contention that lower returns to retention decisions can be attributed, in part, to the investment activities of some retaining firms. Abnormal stock returns over a 24-month interval following the announcement month of a sale are positive for a portfolio of retaining firms, but insignificantly different from zero for portfolios formed on the distribution of proceeds to debt or equity. These results suggest that the benefits associated with retained proceeds are only partially incorporated into share prices around the announcement date of a sale.

Capital structure considerations and debt constraints undoubtedly play a confounding role in determining the relation between investment policies, payout decisions, and transaction returns. A substantial component of this analysis is dedicated to identifying and controlling for these effects. Lang et al. (1995) note that substantial debt overhang can contractually obligate the disbursement of proceeds to debt. In the absence of explicit obligations, however, debt payouts can also be motivated by the agency costs of leverage. Thus, the value associated with a distribution to debt may not be attributable solely to the avoidance of any agency costs of managerial discretion, but can also be tied to a reduction in the agency costs of leverage. Empirically, the likelihood of a payout to debt is found to be negatively correlated with the divesting firm's interest coverage ratio, but increasing in its industry-benchmarked debt-to-assets ratio. Controlling for coverage, the latter result implies that even in the absence of an explicit constraint, divesting managers systematically allocate sale proceeds to debtholders in order to adjust suboptimal debt levels.

An analysis of the shareholder returns to payout decisions provides additional evidence on the trade-off between the efficiency benefits of retained proceeds and the agency cost of debt. Debt allocations are associated with significantly higher announcement period returns when compared to retention decisions. Returns to equity distributions, however, are not significantly different from the returns to retention decisions. These results suggest that the benefits of payout decisions accrue asymmetrically between debt and equity allocations and imply that a portion of the value associated with a debt payout obtains from a reduction in the agency costs of debt, rather than from the distribution of proceeds per se. This conclusion is reinforced by a cross-sectional analysis of shareholder returns that are increasing in net-of-industry debt for firms

distributing proceeds to debtholders, but decreasing in net-of-industry debt for firms retaining proceeds or distributing proceeds to equity.

The remainder of the paper is organized as follows. Section I motivates the analysis and summarizes the prior empirical literature concerning asset sales, pay out decisions, and corporate cash holdings. Section II describes the data collection and sample. Section III presents an empirical analysis of the distribution of sale proceeds. Section IV examines the shareholder returns to sales delineated by the allocation of proceeds, and Section V provides concluding remarks.

I. Motivation and Prior Empirical Research

A. Proceeds Retention, Investment Efficiencies, and Financial Flexibility

Management's decision regarding the disposition of cash proceeds from an asset sale is inextricably linked to the determination of an optimal level of cash reserves. In equilibrium, a firm's cash holdings are set at a level where the expected benefit of holding cash balances is just offset by the expected cost. As outlined in Harford (1999) and Opler et al. (1999), the benefits associated with cash holdings accrue on several dimensions, particularly the provision of internal capital for subsequent investment. Asymmetric information between managers and capital providers suggests that corporate cash holdings, in the absence of agency conflicts, provide a lower cost substitute for capital raised in external markets (e.g., Myers and Majluf (1984)). In this context, maintaining and adding to cash reserves through the retention of sale proceeds can be efficient if it allows a firm to finance positive NPV projects even when internally generated free cash flow is insufficient.

Investment efficiencies associated with retained sale proceeds have been cited in prior research, although to date there is little direct evidence to support these claims. For example, Hite et al. (1987) propose that shareholder gains to asset sales can include the present value of applying proceeds to finance any remaining positive, but unfunded, NPV projects of the firm. Similarly, Slovin, Sushka, and Ferraro (1995) note that an asset sale allows a divesting firm to privately negotiate a cash inflow, thereby avoiding a subsequent public security offering. Shleifer and Vishny (1992) observe that the value of the option to fund projects using retained proceeds is far greater for firms in financial distress that face relatively substantial costs in issuing public securities. Finally, Brown, James, and Mooradian (1994) find that debtholders often acquiesce to the retention decisions of divesting firms in financial distress, and they infer that these decisions signal positive information about the value of remaining investment opportunities.

From an efficiency perspective, if sale proceeds provide a less costly substitute for the private or public placement of new securities, a firm's retention decision will be positively correlated with its remaining growth opportunities and need for additional financial flexibility. To the extent that post-sale investment proxies for management's expectation regarding investment at the time of the sale,

an efficiency motive also suggests a positive relation between post-sale capital investment and the likelihood of retention. If retention decisions are partially unanticipated and enable firms to subsequently engage unfunded positive NPV projects, shareholder returns to asset sales and retention decisions should be increasing in the firm's growth opportunities and post-sale capital investment, but decreasing in the firm's access to alternative sources of internal capital.

B. Agency Costs and Payout Decisions

While sale proceeds can be applied to a firm's remaining projects, managerial discretion imposes an offsetting cost that can make the disbursement of sale proceeds optimal for shareholders. The use of retained capital is generally unconstrained; thus Lang et al. (1995) and Stulz (1990) have noted that self-interested managers will, all else equal, be inclined to retain sale proceeds. Manager-specific benefits associated with the internal allocation of proceeds can accrue on several dimensions. Retained proceeds maintain firm size—a benefit to managers where firm size imparts a greater degree of power and prestige (e.g., Jensen (1986)) and is positively correlated with compensation (e.g., Murphy (1985)). Proceeds can also be allocated to manager-specific projects (e.g., Shleifer and Vishny (1989)) and can insulate managers from monitoring imposed by repeated trips to capital markets (e.g., Easterbrook (1984)). Finally, managers can use proceeds to diversify the firm and reduce the risk of their undiversifiable human capital (e.g., Amihud and Lev (1981)).

Under the managerial agency hypothesis, managers prefer to retain and redirect proceeds toward projects that benefit themselves rather than shareholders. From this perspective, absent an explicit debt constraint or measures to align the incentives of managers and shareholders, retention decisions can be expected to bear little if any relation to the firm's growth opportunities. Furthermore, given the personal benefits of proceeds reallocation, and those associated with firm size and diversification generally, retention decisions will be positively associated with benchmarked investment activity around the date of the sale. Given management's predisposition for liquidity, retention decisions may also be positively correlated with the firm's cash reserves and free cash flow prior to the sale. Management's private incentives are largely unmitigated under the managerial agency hypothesis. From this perspective, shareholder wealth will be negatively correlated with retention, especially for firms having poor contemporaneous growth opportunities and engaging in substantial capital investment.

A distribution to debt can also reduce agency costs associated with leverage. Jensen and Meckling (1976) note that firms levered in excess of an optimum level face higher required yields and increasingly restrictive covenants on subsequent debt issues because of management's incentive to engage in asset substitution. In addition, overlevered firms face the underinvestment problem discussed by Myers (1977), namely that the benefits of incremental investment accrue primarily to debt holders, reducing equity's incentive to invest in marginally positive NPV projects. Hennessy (2003) demonstrates that debt

overhang is related to substantial distortions in both the level and composition of corporate investment. If payout decisions following asset sales are sensitive to the agency costs of debt, the likelihood of a debt payout relative to either an equity distribution or retention decision will be increasing in the benchmarked leverage of the firm. From a shareholder perspective, a distribution of proceeds to debt will be optimal if it reduces debt in an overlevered firm, even in the absence of interest coverage or covenant constraints. Symmetrically, excess leverage may make unanticipated retention decisions or distributions to equity costly for shareholders because they forego a reduction in the agency costs of debt.

C. Prior Empirical Research

The prior empirical literature has established a beneficial shareholder wealth effect associated with payout decisions following monetizing asset divestitures. Slovin et al. (1995) find that for a sample of large asset sales, proceeds retention is associated with a 2-day announcement period average excess return of 1.29%, significantly below the 2.77% excess return of firms that pay out proceeds. Lang et al. (1995) report a positive 3-day average abnormal return of 3.9% for a sample of firms that publicly announce their intention to distribute sale proceeds, but find that returns are not different from zero for firms that reinvest proceeds. Given that firms are more likely to pay out proceeds when they are unable to service their debt, Lang et al. emphasize the role of leverage in containing the agency costs of managerial discretion. Allen and McConnell (1998) examine payout decisions following subsidiary carveouts and find that carveout announcement abnormal returns are positive for the subsample of firms that pay out proceeds and zero for firms that announced proceeds retention or do not report a use of proceeds.

In a case study of the Times Mirror Corporation's sale of its cable business in 1994, DeAngelo and DeAngelo (2000) highlight the interaction between payout policy, investment opportunities, and the shareholder returns to large asset sales. Financial markets initially reacted quite positively to the \$1.3 billion sale announcement by Times Mirror, with a single day equity return of 11.7%. Times Mirror's stock plummeted by 8.4% on the next business day, however, following the pronouncement of a divesting manager that a substantial portion of the sale proceeds would be reinvested in new information technology businesses.

In addition to the literature focused on asset divestitures, empirical models have examined the relation between growth opportunities, investment, and a firm's cash reserves. Consistent with hypothesized investment efficiencies Opler et al. (1999) find that cash reserves are positively correlated with a firm's growth opportunities, capital expenditures, research and development expense, and cash flow variance, but inversely correlated with the cost of external financing and cash flow. Similarly, Harford (1999) finds that cash holdings are increasing in growth opportunities, the volatility and level of cash flow, and firm leverage. Fenn and Liang (2001) also show that corporate payout decisions are inversely correlated with the value of a firm's investment opportunities.

Despite the evidence for an optimal level of corporate cash holdings, agency costs associated with maintaining and adding to cash reserves appear to be significant for shareholders. Harford (1999) finds that firms holding excess cash are more likely to undertake acquisitions that destroy value when compared to acquisitions made by firms with normal levels of cash. Opler et al. (1999) show that corporate cash reserves tend to be somewhat sticky over time, suggesting that managers maintain a precautionary motive for the retention of cash flow in excess of that predicted by a static trade-off model. Opler et al. also find that firms with excess cash tend to engage in higher levels of investment spending regardless of the value of the firm's growth opportunities. Fenn and Liang (2001) find that payout probabilities increase in managerial share ownership for companies with few positive NPV investment opportunities, highlighting the role of incentive alignment in moderating the relation between payout decisions and investment.

This paper is most directly related to the works of Blanchard et al. (1994) and Harford and Haushalter (2003). Blanchard et al. consider the investment decisions of 11 firms that received large cash litigation awards. They find that firms with poor investment opportunities (as defined by Tobin's q) are more likely to retain awards. In addition, Blanchard et al. document that retaining firms used proceeds to make diversifying acquisitions and frequently increased managerial compensation. Harford and Haushalter examine the allocation of cash flow shocks to 34 firms in the oil and gas industry during the Persian Gulf Crisis. Consistent with an efficiency motive for retaining proceeds, they document that a sudden increase in cash flow coincided with a significant increase in investment activity for firms in this industry, a relation most pronounced for those firms that experienced prior financial constraint.

II. Data and Descriptive Statistics

The 400 transactions examined in this study were identified using the mergers and acquisitions database maintained by SDC. Selected transactions were subsidiary sales completed between 1990 and the end of 1998, entailing a cash distribution of \$75 million or more to the divesting parent. Divesting firms and acquirers were restricted to include only publicly traded firms on U.S. exchanges yielding a total of 791 transactions. The sample was further constrained to 415 transactions by excluding sales by divesting firms from the financial industries (two-digit SIC codes 60–64) and transactions where a use of proceeds could not be identified. Eight additional transactions were excluded because the divesting parent could not be located in the CRSP name structure, and seven were excluded because of missing total assets data on Compustat.

News and wire reports on *LexisNexis* and the *Wall Street Journal* were used to identify divesting management's statements regarding the use of sale proceeds. Following Lang et al. (1995), a transaction is classified as a distribution to debt if it is reported that the proceeds will be used to retire debt (196 observations). An equity payout indicates that management intends to use the proceeds to repurchase equity (36 observations) or pay a special dividend

(6 observations). An observation is coded as a retention decision if management states that proceeds will be retained for any corporate purpose (162 observations). If more than one use of proceeds is reported, the analysis incorporates the first stated use.¹

A. Transaction Data

Table I provides a summary of the transactions in the sample delineated by the stated use of proceeds. The average (median) transaction value is \$502.06 (\$218.75) million, with no significant difference in mean or median between the retention and either the debt or equity payout subsamples. Remuneration is primarily cash and constitutes a significant shock to the divesting firm's cash flow where the average (median) transaction value is approximately 525% (96%) of free cash flow in the year before the sale. The average (median) book value of assets for the retaining firms is \$19.31 (\$5.63) billion and is higher than the averages (medians) of \$10.71 (\$4.26) and \$7.63 (\$3.93) billion for the debt and equity payout samples, respectively. Relative transaction size is also significantly larger for firms distributing proceeds. The average (median) transaction for retaining firms is 13.0% (5.0%) of total assets compared to 43.0% (8.0%) and 21.0% (10.0%) for the debt and equity payout subsamples, respectively.

B. The Disbursement of Sale Proceeds

The data in Panel A of Table II summarize the change in debt holdings for the sample firms from the fiscal year before, to the fiscal year after the effective date of the sale. Consistent with management's stated use of proceeds, the average (median) firm in the debt payout sample reduces total debt by \$211.15 (\$99.29) million. Debt payout firms also lower debt as a proportion of total assets by 4.7% (3.0%). Firms that distribute proceeds to equity coincidentally reduce debt over the 3-year interval, although total debt capitalization and the debt-to-assets ratio for these firms falls by relatively less than that observed in the debt payout sample. The average (median) firm retaining proceeds raises \$1.16 billion (\$9.55 million) in debt capital between fiscal years $t - 1$ and $t + 1$ relative to the sale. While this increase in debt is large in an absolute sense, a corollary increase in total assets over the same interval results in an average increase in debt capital of just 6% of total assets for retaining firms. This substantial increase in capitalization is consistent with the notion that retention decisions are clustered in a set of rapidly growing firms.

Panel B of Table II illustrates the repurchase and dividend activity of the sample firms around the date of the sale. The data is obtained from a divesting firm's statement of cash flows and is normalized by the book value of assets in

¹ Similar analyses to those shown in Tables VI and VIII of this paper have been performed using an alternative specification where any mention of retention, regardless of order, is categorized as a retention decision. While this categorization increases the number of retention decisions by 24 observations, the results are qualitatively similar to those shown in the paper.

Table I
Sample Transaction Statistics

The sample is comprised of subsidiary sales between 1990 and 1998 by public nonfinancial corporations where the transaction entails a minimum payment of \$75 million in cash to the divesting firm. Transactions include only those where the parent can be identified on CRSP and Compustat, and where the use of sale proceeds is made public. Transaction characteristics are from SDC; total assets and cash flow data are from Compustat. Fraction paid in cash measures cash payable at the effective date of the sale divided by the transaction value. Free cash flow is measured in the fiscal year preceding the sale as the sum of operating income before depreciation minus interest expense, dividends, and taxes paid. Total assets reflect the book value of assets for the divesting firm in the fiscal year before the sale. Relative transaction size is the market value of the transaction divided by the divesting firm's pre-sale total assets. Asterisks indicate the significance of mean (median) difference tests comparing transaction features between the retention sample and the debt and equity payout samples independently. The symbols ** , * indicate that the mean or median difference is significantly different from zero at the 1, 5, and 10% levels, respectively.

	All Transactions (n = 400)		Proceeds Retention (n = 162)		Distributions to Debt (n = 196)		Distributions to Equity (n = 42)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Transaction value (\$ millions)	502.06	218.75	501.46	201.00	478.03	243.75	616.52	223.00
Fraction paid in cash	0.95	1.00	0.95	1.00	0.94	1.00	0.95	1.00
Transaction value to free cash flow	5.26	0.96	1.28	0.74	8.98***	1.06**	2.87*	1.41**
Total assets (\$ millions)	13869.40	4809.50	19306.58	5632.72	10711.91***	4264.51**	7632.36*	3934.25*
Relative transaction size	0.28	0.07	0.13	0.05	0.43*	0.08***	0.21*	0.10*

Table II
The Disbursement of Sale Proceeds

This table summarizes the mean (median) change in debt, as well as the equity repurchase and dividend payout activity for the divesting firms in the sample. Payout samples are classified using the primary stated use of cash proceeds. Data are presented relative to the fiscal year of the effective date of the sale (t) and delineated by the primary stated use of sale proceeds. Debt is calculated using the book value of short and long-term debt. Repurchases and dividends paid are obtained from the divesting firm's statement of cash flows and are normalized by the book value of assets in the fiscal year of the sale.

Panel A: Change in Relative and Total Debt (Year ($t + 1$) – Year ($t - 1$))			
	Retention Sample	Debt Payout Sample	Equity Payout Sample
Change in book value of debt	1155.141 (9.551)	–211.150 (–99.29)	–160.097 (–63.128)
Debt to total assets	0.007 (–0.007)	–0.047 (–0.030)	–0.006 (–0.022)
Panel B: Repurchase and Dividend Activity by Year			
	Year ($t - 1$)	Year (t)	Year ($t + 1$)
Repurchase activity			
Retention sample	0.015 (0.000)	0.025 (0.003)	0.030 (0.007)
Debt payout sample	0.007 (0.000)	0.016 (0.000)	0.011 (0.000)
Equity payout sample (share repurchases)	0.014 (0.005)	0.081 (0.041)	0.046 (0.037)
Equity payout sample (dividends)	0.015 (0.007)	0.005 (0.000)	0.002 (0.000)
Dividends paid			
Retention sample	0.020 (0.017)	0.021 (0.016)	0.024 (0.019)
Debt payout sample	0.015 (0.010)	0.021 (0.009)	0.016 (0.009)
Equity payout sample (share repurchases)	0.017 (0.015)	0.020 (0.016)	0.019 (0.014)
Equity payout sample (dividends)	0.023 (0.014)	0.266 (0.214)	0.059 (0.020)

the fiscal year of the sale to allow for comparison across firms and time. Firms in the share repurchase sample increase their mean (median) repurchase activity from 1.4% (0.5%) of assets in the year before the sale to 8.1% (4.1%) and 4.6% (3.7%) of assets in the fiscal years of and following the sale, respectively. This increase in repurchase activity outpaces, both in level and percentage change, that of firms in the other subsamples. Proceeds are distributed as a dividend in six transactions and, in each case, the dividend is paid as a special one-time distribution. Firms in the dividend payout sample increase the average (median) dividend paid from 2.3% (1.4%) of assets in the year prior to 26.6%

(21.4%) in the effective year of the sale—a rate roughly 12 times that observed in the other subsamples. In sum, the data in Table II suggest that the measure of a divesting firm's distribution of proceeds is well specified.

C. Financial, Operating, and Ownership Characteristics

Table III presents the variables that control for the financial and operating characteristics of divesting firms in the sample. Accounting data is from Compustat, and ownership data is from Compact Disclosure. The results of mean and median difference tests between the retention sample and each payout sample independently are provided. To avoid the confounding effects associated with the transaction itself, data is collected in the fiscal year prior to the effective date of the sale.

Table III
Financial, Operating, and Ownership Characteristics
of Divesting Firms

This table summarizes mean (median) firm level data for the divesting firms included in the sample. All data with the exception of income volatility is reported for the fiscal year prior to the transaction. Payout decisions are classified using the primary stated use of sale proceeds. Interest coverage is calculated as operating income before depreciation, divided by interest expense. Total debt includes both short and long term. The dividend indicator is equal to one for firms that paid a dividend to common shareholders, and zero otherwise. Cash is the level of cash and marketable securities held by the firm normalized by total assets. Cash flow is estimated as operating income before depreciation minus interest expense, dividends, and taxes paid, divided by total assets. Income volatility is measured as the standard deviation in operating income to total assets over the five fiscal years preceding the divestiture. The results of difference tests between the retention and respective payout samples are provided as asterisks in the payout sample columns. The symbols ***, **, * indicate that the difference between the retention and respective payout sample is significantly different from zero at the 1, 5, and 10% levels, respectively.

	Retention Sample (<i>n</i> = 162)	Debt Payout Sample (<i>n</i> = 196)	Equity Payout Sample (<i>n</i> = 42)
Interest coverage	13.347 (6.969)	4.913*** (3.775)***	11.116 (6.621)
Number > 1.0 % of subsample	156 96.30	175 89.29	41 97.62
Total debt/Assets	0.274 (0.268)	0.405*** (0.369)***	0.283 (0.307)
Common dividend indicator			
Number > 0 % of subsample	129 79.63	151 77.04	36 85.71
Cash flow	0.071 (0.074)	0.036*** (0.039)***	0.077 (0.072)
Cash	0.068 (0.041)	0.048*** (0.022)***	0.052 (0.024)*
Prior income volatility	0.028 (0.023)	0.031 (0.022)	0.023* (0.016)**
Inside ownership	0.055 (0.011)	0.085* (0.012)	0.068* (0.018)

Consistent with the disciplinary role of debt, firms in the debt payout sample have significantly lower interest coverage and higher debt levels compared to the firms in the retention sample. Average (median) interest coverage in this sample is 4.913 (3.775), and debt comprises 40.5% (36.9%) of the book value of total assets. Firms in the retention sample report a significantly higher mean interest coverage of 13.347 (6.969) and a lower debt capitalization of 27.4% (26.8%) of total assets. Coverage and debt-to-assets for firms in the equity payout sample are not statistically different from that of firms in the retention sample. Approximately 80% of the sample firms paid a dividend in the fiscal year prior to the sale, with the proportion of firms paying out a dividend being indistinguishable between the two payout groups independently and the retention sample.

While the average distribution to debt does not appear to be a response to impending financial distress, financial constraints clearly drive a large proportion of debt payout activity. Approximately 11% of the firms in this sample report interest coverage ratios below one before the sale, compared to 4 and 2% for the retention and equity payout samples, respectively. In the absence of financial distress, a distribution to equity would seem to be an optimal distribution from a shareholder's perspective; however, distributions to debt are the most commonly observed use of proceeds following a sale. One explanation is that the distribution of proceeds may be constrained by debt covenants.² Voluntary distributions to debt can also be motivated by the agency costs of debt. These possibilities are considered in the analyses that follow.

Table III also describes the cash flow and cash holdings of divesting firms before the sale. From an efficiency standpoint, the value of retained proceeds in preserving financial flexibility is inversely related to the divesting firm's ability to generate free cash flow, as well as to its existing cash reserve. Alternatively, if retention is a byproduct of a poorly constrained agency conflict, retaining firms may concurrently generate substantial free cash flow and/or hold large cash stockpiles. Cash flow is computed as operating income before depreciation minus interest expense, dividends, and taxes paid, weighted by the firm's total assets. Cash includes marketable securities and is scaled by total assets. Within the retention sample mean (median) cash flow is 7.1% (7.4%) of assets. This is greater than the 3.6% (3.9%) cash flow-to-assets reported for the average (median) firm in the debt payout sample, but insignificantly different from that of the equity payout sample. The average (median) firm retaining proceeds maintains cash holdings of 6.8% (4.1%) of assets prior to the sale, while cash averages 4.8% (2.2%) of assets for firms distributing proceed to debt. Mean (median) cash is 5.2% (2.4%) of assets for the equity payout sample; however, only median cash holdings are significantly different from those of the retention sample.

² As noted by Smith and Warner (1979), the distribution of sale proceeds is likely to be constrained by debt covenants pertaining to the maintenance of minimum interest coverage and debt-to-asset ratios for the divesting firm following the sale. I control for both features in the multivariate analyses that follow.

Evidence in Opler et al. (1999) suggests that firms hold cash reserves as a hedge against cash flow volatility. Similarly, Lie (2003) finds that corporate payout decisions are positively correlated with income shocks, but negatively correlated with prior income volatility. In this study, income volatility is estimated for divesting firms as the standard deviation of operating income to total assets over the five fiscal years preceding the divestiture announcement. The average (median) equity payout firm reports an income volatility of 0.023 (0.016), significantly below the average volatility of 0.028 (0.023) for retaining firms. No statistical difference in income volatility is observed between the retention and debt payout subsamples.

Insider ownership data in Table III reflects the proportional shareholdings of officers and directors of the divesting firms in the year prior to the divestiture. Similar to Fenn and Liang (2001), inside ownership is higher for firms in the payout subsamples. Mean (median) holdings are 5.5% (1.1%) of total equity for firms in the retention sample, but 8.5% (1.2%) and 6.8% (1.8%) of total shares for the debt and equity payout samples, respectively. Only differences in mean between the payout samples and the retention sample are statistically significant. To the extent that ownership aligns the incentives of managers and shareholders, lower relative shareholdings for the retention sample is consistent with the hypothesis that retention decisions are symptomatic of partially unmitigated agency conflicts.

III. Growth Opportunities, Investment Activity, and the Allocation of Sale Proceeds

A. Univariate Evidence

Data on the investment opportunity set and capital outlays of divesting firms in the sample are summarized in Table IV. Following Smith and Watts (1992) and, more recently, Fenn and Liang (2001), the market-to-book assets ratio of the divesting firm proxies for the extent and quality of investment opportunities. Investment intensity is estimated using the capital expenditures of the divesting firm following the sale—a measure that under rational expectations provides an ex post proxy for anticipated investment (e.g., Denis (1994) and Pilotte (1992)). Benchmarked investment is calculated as the difference between the net capital investment of a sample firm and that of the median firm in the same industry, defined by the divesting firm's four-digit SIC code.³

Consistent with the efficiency motive for retaining sale proceeds, the evidence in Table IV indicates that growth opportunities of retaining firms are significantly better than those of firms paying out to debt, and marginally better than those of equity payout firms. In the fiscal year of a sale the average (median) market-to-book ratio of firms retaining proceeds is 1.753 (1.504), compared to 1.462 (1.292) and 1.694 (1.615) for firms in the debt and equity payout

³ Industry-adjusted capital expenditure benchmarks have been utilized in a number of prior studies including Healy, Palepu, and Ruback (1992), Servaes (1994), Denis, Denis, and Sarin (1994), and Hendershott (1996).

Table IV

Investment Opportunities and Investment Activity of Divesting Firms

This table summarizes the mean (median) market-to-book and capital investment for the divesting firms in the sample. Data are reported for the fiscal year indicated in the top row relative to the effective year of the asset sale (t). Market-to-book value is calculated as the ratio of the market-to-book value of assets for the divesting firm. Capital investment is measured as capital expenditures net of sales of property plant and equipment, and scaled by the firm's total assets. Net-of-industry investment is the difference between investment of the sample firm and the contemporaneous investment of the median firm in the same industry as defined by the sample firm's primary SIC code. The results of difference tests between the retention and respective payout samples are provided as asterisks in the payout sample rows. The symbols ***, **, * indicate that the difference in market-to-book or capital investment between the payout and retention sample is significantly different from zero at the 1, 5, and 10% levels, respectively.

	Year ($t - 1$)	Year (t)	Year ($t + 1$)
Market-to-book			
Retention sample	1.679 (1.499)	1.753 (1.504)	2.00 (1.531)
Debt payout sample	1.439*** (1.270)***	1.462*** (1.292)***	1.592*** (1.356)**
Equity payout sample	1.565* (1.463)	1.694* (1.615)	1.781* (1.637)
Capital investment			
Retention sample	0.088 (0.071)	0.081 (0.066)	0.080 (0.063)
Debt payout sample	0.058*** (0.051)***	0.062*** (0.050)***	0.062** (0.047)***
Equity payout sample	0.059** (0.046)***	0.053** (0.046)***	0.048*** (0.036)***
Net-of-industry capital investment			
Retention sample	0.023 (0.011)	0.015 (0.003)	0.016 (0.003)
Debt payout sample	0.001*** (0.002)***	0.007** (0.000)**	0.007* (-0.001)**
Equity payout sample	0.010 (0.004)	0.000* (-0.002)*	0.001* (0.000)*

samples, respectively. Mean and median differences between the retention and debt payout samples are significantly different from zero at a 1% level, while only the mean difference between the retention and equity payout samples is significant. Similar differences in market-to-book between the retention and payout samples obtain in the years before and after the sale.

Capital investment by firms retaining proceeds exceeds that of firms in the debt and equity payout samples in each of the years ($t - 1$) through ($t + 1$). In the year following a sale, mean (median) investment of retaining firms is 8.0% (6.3%) of assets, significantly greater than the 6.2% (4.7%) and 4.8% (3.6%) investment rates of firms that distribute proceeds to debt or equity, respectively. This result is consistent with the efficiency hypothesis where divesting firms utilize proceeds to fund contemporaneous and post-sale investment. Firms

retaining proceeds also consistently invest at rates in excess of the median firm in their industry, although a substantial increase in raw or benchmarked investment in the year following the sale is not observed. Mean (median) net-of-industry capital expenditure for firms that retain proceeds is 1.6% (0.3%) of assets following the sale, significantly higher than the average net-of-industry expenditure of 0.7% (−0.1%) and −0.1% (0.0%) for firms distributing proceeds to debt and equity, respectively. Similar differences in excess investment between the retention and payout samples obtain in the year of and before the sale.

Excess investment by retaining firms following a sale can potentially be attributed to a pre-sale financial constraint. Fazzari, Hubbard, and Petersen (1988), among others, have shown a positive time series sensitivity of investment to cash flow for firms that are financially constrained, suggesting that capital market frictions impede optimal investment. Proceeds provide a shock to cash flow that managers may use to engage unfunded positive NPV projects. Prior research suggests that cash constraints may contribute to underinvestment by divesting firms. For example, Schlingemann, Stulz, and Walkling (2002) note that divesting firms tend to underinvest an industry benchmark prior to the divestiture. They attribute this result to either systematic financing constraints or, alternatively, a set of poorer investment opportunities. To examine whether pre-sale financial constraints can explain the post-sale investment activity of retaining firms, Table V summarizes the investment activity of firms retaining proceeds, delineated by a firm's degree of financial constraint prior to the sale. Following Fazzari et al., financial constraint is defined by interest expense. Firms reporting an interest coverage ratio in the top third of retaining firms are considered financially unconstrained and firms in the lowest third are constrained.⁴

Throughout the sample period, the median constrained firm in the retention sample invests at a rate below that of the median unconstrained firm. As a fraction of assets, unconstrained investment is 1.6, 1.9, and 1.5% higher than investment by constrained firms measured in the fiscal year before through the year following the sale respectively. Differences in investment between constrained and unconstrained firms are statistically significant at the 10% level in the fiscal year of and following the sale. Positive and significant net-of-industry investment by retaining firms is clustered in the set of firms that are unconstrained. As a fraction of assets, net-of-industry investment is 1.5, 2.3, and 1.3% in the unconstrained sample the year prior to, the year of, and the year following the sale, respectively. Significant net-of-industry investment is not observed in the sample of constrained firms. Overall, the evidence in Table V indicates that financial constraints do not contribute to underinvestment in this sample of divesting firms. Furthermore, excess investment by retaining firms following a sale cannot be attributed to pre-sale financial constraint, but is in fact clustered in the set of financially unconstrained firms.

⁴ Average (median) interest coverage of firms in the lowest third of retaining firms is 2.769 (2.990) and 30.122 (17.743) for firms in the highest third of the sample.

Table V
Investment by Retaining Firms Delineated by the Degree of Pre-Sale Financial Constraint

This table reports the median investment and industry investment benchmark for sample firms that elect to retain sale proceeds, delineated by the degree of financial constraint. Sample firms are designated as interest constrained if they report interest coverage in the lowest third of the sample of retaining firms in the fiscal year prior to the sale, and unconstrained if interest coverage is in the highest third. Capital investment is measured as capital expenditures net of sales of property plant and equipment, and is scaled by the firm's total assets. Industry investment is the contemporaneous investment of the median firm in the same industry as the sample firm as defined by the sample firm's primary SIC code. Retaining firms are designated as interest constrained if they report interest coverage in the lowest quintile of the full sample in the year prior to the sale, and unconstrained if interest coverage is in the highest third. *p*-Values based on rank-sum difference tests between sample and industry median investment, as well as investment between the constrained and unconstrained sample firms, are provided in parentheses.

	Year (<i>t</i> - 1)	Year (<i>t</i>)	Year (<i>t</i> + 1)
Constrained			
Sample firm investment (median)	0.051	0.053	0.046
Industry investment (median)	<u>0.048</u>	<u>0.048</u>	<u>0.048</u>
Difference: Sample firm - industry	0.003	0.005	-0.002
<i>p</i> -Value for difference	(0.185)	(0.208)	(0.134)
Unconstrained			
Sample firm investment (median)	0.067	0.072	0.061
Industry investment (median)	<u>0.052</u>	<u>0.049</u>	<u>0.048</u>
Difference: Sample firm - industry	0.015	0.023	0.013
<i>p</i> -Value for difference	(0.004)	(0.001)	(0.009)
Difference			
Constrained - unconstrained investment of sample firms	-0.016	-0.019	-0.015
<i>p</i> -Value for difference	(0.179)	(0.082)	(0.088)

B. Multivariate Analysis

Table VI summarizes the coefficients from multinomial logistic regressions modeling the allocation of sale proceeds between the firm and its claimants. Coefficients are estimated using a Theil normalization described in Kmenta (1986), where reported coefficients in each model relate the probabilities of a distribution to debt or equity relative to the omitted choice of proceeds retention. Positive (negative) coefficients in the equity or debt equations indicate that the explanatory variable is associated with a higher (lower) probability of an equity or debt distribution, respectively, relative to a retention decision. Coefficients can also be used for comparisons across the payout categories. For example, a positive (negative) coefficient that is larger (more negative) in the debt equation when compared to an equity equation suggests that the variable in question increases (decreases) the probability of a debt payout relative to both an equity payout and retention decision.

Model 1 of Table VI examines the impact of a divesting firm's growth opportunities (proxied by contemporaneous market-to-book) and post-sale capital investment on the distribution of proceeds. Growth opportunities yield

Table VI
Multinomial Logistic Regressions Modeling the Distribution of Sale Proceeds

This table presents the results of multinomial logistic regressions explaining the distribution of sale proceeds to debt and equity holders relative to a retention decision: the model default. The dependent variable is zero for firms that retained proceeds, one for firms that distributed proceeds to debt, and two for firms that distributed proceeds to equity. Relative transaction size is computed as reported value of the sale transaction divided by the book value of assets of the divesting firm 1 year prior to the sale. Market-to-book is calculated as the ratio of the market-to-book value of assets for the divesting firm in the fiscal year of the sale. Capital investment is measured in the fiscal year following the sale as capital expenditures net of sales of property plant and equipment, and is scaled by the firm's total assets. Net-of-industry investment is the difference between capital investment of the sample firm in the year following the sale and the contemporaneous investment of the median firm in the same industry as defined by the sample firm's primary SIC code. Interest coverage is calculated the fiscal year prior to the sale as operating income before depreciation divided by interest expense. Net-of-industry debt is equal to the difference between total debt for the sample firm in the fiscal year before the sale, and that of the median firm in the same industry defined by the divesting firm's primary SIC code. The dividend indicator is equal to one for firms that paid a dividend to common shareholders in the fiscal year before the sale, and zero otherwise. Income volatility is the standard deviation of operating income to total assets over the 5 fiscal years preceding the sale. Cash flow is estimated 1 year prior to the sale as the sum of operating income before depreciation minus interest expense, dividends, and taxes paid; and it is divided by total assets. Net-of-industry cash is equal to the difference between the cash and marketable securities held by the sample firm in the year prior to the sale (scaled by total assets), and that of the median firm in the same industry defined by the divesting firm's primary SIC code. Inside ownership is the fractional stock ownership of officers and directors in the divesting firm in the fiscal year prior to the sale. Coefficient *p*-values are provided in parentheses. Models 1–3 are estimated using the full sample of 400 observations. Model 4 is estimated using 337 observations.

	Distribution to Debt				Distribution to Equity			
	Model 1 ^a	Model 2 ^b	Model 3 ^c	Model 4 ^d	Model 1 ^a	Model 2 ^b	Model 3 ^c	Model 4 ^d
Intercept	1.559 (<0.001)	1.001 (0.052)	0.961 (0.024)	1.220 (0.051)	-0.580 (0.241)	-1.238 (0.162)	-1.264 (0.122)	-1.476 (0.105)
Market-to-book	-0.714 (0.001)	-0.427 (0.109)	-0.458 (0.049)	-0.496 (0.081)	-0.173 (0.090)	-0.177 (0.090)	-0.310 (0.068)	-0.348 (0.110)
Capital investment	-4.233 (0.027)	-3.306 (0.129)			-9.934 (0.034)	-8.954 (0.076)		

(continued)

Table VI—Continued

	Distribution to Debt			Distribution to Equity				
	Model 1 ^a	Model 2 ^b	Model 3 ^c	Model 4 ^d	Model 1 ^a	Model 2 ^b	Model 3 ^c	Model 4 ^d
Net-of-industry capital investment			−4.311 (0.026)	−5.050 (0.050)			−3.000 (0.078)	−2.875 (0.095)
Interest coverage		−0.051 (0.015)	−0.058 (0.021)	−0.060 (0.028)		−0.003 (0.800)	−0.004 (0.751)	−0.002 (0.900)
Net-of-industry debt		2.426 (0.004)	2.224 (0.003)	2.401 (0.005)		0.075 (0.902)	−0.079 (0.941)	−0.008 (0.976)
Dividend indicator		0.377 (0.141)	0.309 (0.561)	0.208 (0.552)		0.510 (0.414)	0.201 (0.885)	0.229 (0.803)
Income volatility		0.285 (0.190)	0.209 (0.205)	0.275 (0.191)		0.318 (0.227)	0.262 (0.283)	0.251 (0.409)
Cash flow		−0.365 (0.851)	−1.177 (0.621)	0.100 (0.889)		3.680 (0.410)	3.001 (0.365)	3.902 (0.286)
Net-of-industry cash		−1.704 (0.582)	−1.866 (0.322)	−1.363 (0.411)		−5.250 (0.150)	−1.578 (0.568)	−1.165 (0.776)
Relative transaction size		4.105 (0.025)	4.322 (0.015)	3.090 (0.044)		1.022 (0.133)	1.252 (0.084)	0.747 (0.189)
Inside ownership				0.741 (0.082)				0.050 (0.090)

^aModel 1 has a χ^2 statistic of 62.221 and yields a McFadden pseudo- R^2 of 0.052.

^bModel 2 has a χ^2 of 72.087 and yields a McFadden pseudo- R^2 of 0.154.

^cModel 3 has a χ^2 of 85.003 and yields a McFadden pseudo- R^2 of 0.142.

^dModel 4 has a χ^2 of 75.290 and yields a McFadden pseudo- R^2 of 0.120.

negative and significant coefficients in both the equity and debt equations. Consistent with the efficiency hypothesis, this indicates that the likelihood of a retention decision, relative to either payout option, is increasing in the divesting firm's contemporaneous growth opportunities. Post-sale capital investment also has a negative and significant effect on the probability of observing either an equity or debt payout relative to a retention decision. While this result also suggests an efficiency motive underlying retention decisions, this conclusion is tempered by the fact that capital expenditures in this model are unbenchmarked.

Model 2 of Table VI extends Model 1 by introducing control variables for capital structure and covenant constraints (net-of-industry debt and interest coverage); prior payout activity (a dividend indicator variable equal to one if the firm paid a dividend in the fiscal year before the sale); and financial flexibility (variation in operating income, cash flow, and net-of-industry cash). It is possible that relatively small proceeds receipts do not warrant the attention associated with an external distribution. To control for this possibility, the ratio of transaction size to book value of assets for a divesting firm is also incorporated into the model. Accounting data for each control variable is estimated for the divesting firm in the fiscal year preceding the sale.

Pre-sale interest coverage plays a positive and highly significant role in predicting the probability of a debt payout relative to a retention decision in Model 2. Coefficients on interest coverage and net-of-industry debt are insignificant in the equity payout equation, indicating that coverage and capital structure considerations also play a role in differentiating between distributions to debt and equity. The persistence of a positive and significant coefficient on net-of-industry leverage in the debt payout equation, after controlling for interest coverage, implies that distributions to debt may in some cases be a response to a suboptimal capital structure, rather than solely a function of a liquidity constraint. This result is consistent with the notion that agency costs of debt motivate some proceeds distributions.

Prior dividend activity and income volatility do not increase the probability of observing retention decisions relative to either form of payout activity, nor do variables associated with the divesting firm's cash flow or industry-benchmarked cash holdings. These results conflict with the hypothesis that management's desire to hedge cash flow volatility or improve financial flexibility systematically motivates the retention of sale proceeds. Coefficients of similar sign and significance obtain for these variables across the remaining specifications provided in Table VI. Finally, the likelihood of a payout decision, particularly a distribution to debt, is increasing in the relative size of the transaction. Coefficients on relative transaction size are also positive in the equity payout equation, but are statistically significant only in Model 3. These results suggest that relatively small cash receipts generally do not warrant the attention associated with a special distribution. Furthermore, coefficient differences between the debt and equity equations are consistent with the premise that only relatively large distributions to debt are likely to have a material impact on the divesting firm's capital structure.

The specification in Model 3 of Table VI replicates that of Model 2, but incorporates the industry-benchmarked investment of sample firms. In this specification, the likelihood of observing a retention decision relative to either a debt or equity payout continues to be positively correlated with contemporaneous growth opportunities. Negative and significant coefficients on net-of-industry investment in both the debt and equity payout equations suggest that distributions of either form are less likely when a divesting firm invests at a rate in excess of its industry benchmark following the sale. Given the systematic relation between excess investment and retention decisions, the hypothesis that retention decisions are, in part, a byproduct of poorly constrained managerial agency problems cannot be rejected. Despite the strong positive correlation between net-of-industry investment and the likelihood of proceeds retention, it is unclear whether overinvestment is driven by the retention decision or, alternatively, whether the divestiture and retention decisions are motivated by management's desire for free cash flow. In identical regressions to those reported in Model 3 of Table VI, lagged and contemporaneous net-of-industry investment also yield negative and economically similar associations in debt and equity payout equations, thereby providing evidence consistent with both alternatives.

Model 4 of Table VI considers the role of director and officer equity ownership on the decision to retain rather than pay out sale proceeds. Data on inside ownership in the fiscal year prior to the asset sale is missing for 63 observations; therefore, this relation is examined in an independent specification. Consistent with Fenn and Liang (2001), the probability of a retention decision relative to either a debt or equity payout is increasing in the proportional ownership of insiders. Given the incentive alignment associated with inside ownership, this result provides additional indirect support for the agency-based hypothesis that proceeds retention is, on average, costly for the shareholders of divesting firms. The probability of a debt payout relative to an equity payout is also increasing in management's own equity stake. One potential explanation for this seemingly counterintuitive result is that debt payouts resolve investment distortions associated with debt overhang, thereby maximizing the value of the manager's own claim.

IV. Shareholder Returns and the Allocation of Sale Proceeds

The efficiency and managerial discretion hypotheses suggest disparate conclusions regarding shareholder welfare in firms electing to retain rather than pay out proceeds. From an efficiency perspective, retention decisions can enhance shareholder value if they enable firms to engage positive NPV projects without resorting to more costly external financing. Similarly, a retention decision may incrementally add value if proceeds enhance financial flexibility in firms with poor or variable access to internally generated cash flow. Alternatively, managerial self-interest may influence the allocation of retained sale proceeds. From this perspective, retention decisions generally, and retention decisions of firms with poor contemporaneous growth opportunities and excess

investment, specifically, can be expected to reduce the shareholder wealth gains associated with a divestiture decision. While a disbursement of proceeds is associated with higher shareholder returns to asset sales under the managerial agency hypothesis, the agency cost of debt implies that the incremental benefits of payout decisions may accrue asymmetrically between debt and equity distributions. If distributions to debt relieve incentives for asset substitution or underinvestment, shareholder returns in firms with excess leverage will be increasing in debt payout decisions, but decreasing in retention or equity payout decisions.

A. Announcement Period Abnormal Returns

Announcement period abnormal returns to asset sales are estimated using a conventional one-factor market model following the event-study methodology described in Brown and Warner (1985).⁵ Average announcement period *CARs* to firms in the sample are summarized in Panel A of Table VII with differences in returns between the payout and retention subsamples evaluated in Panel B. The average *CAR* for the sample is 1.2% over a 3-day interval around the day of the sale announcement.⁶ As in Lang et al. (1995) and Slovin et al. (1995), abnormal returns to sales vary significantly with the reported use of proceeds.⁷ Average 3-day *CARs* to firms retaining proceeds are 0.9%, significantly lower than the 1.6% return to firms announcing a distribution of proceeds to debt. Abnormal returns to retention decisions are, however, statistically indistinguishable from

⁵ A one-factor market model is assumed to represent the returns generating process:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad (1)$$

where R_{it} is the return of security i on day t , R_{mt} is the return of the value-weighted market index on day t , and ε_{it} is a random error term. For each security, the market model is computed over days -251 and -50 relative to the announcement date of the sale. A minimum of 25 trading days is required to compute model parameters, reducing the number of sample firms with abnormal return data to 372. Abnormal returns for each security i on day t are calculated as:

$$AR_i = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}), \quad (2)$$

where the estimates $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the OLS estimates of security i 's market model parameters. Shareholder returns are evaluated around the announcement date of a sale using cumulative abnormal returns (*CARs*) over a daily interval from days -1 to $+1$ relative to the sale announcement date.

⁶ Comparable abnormal returns to asset sale announcements of between 0.5% and 1.66% are observed by Alexander, Bensen, and Kampmeyer (1984), Hite, Owers, and Rogers (1987), and Jain (1985).

⁷ News reports are used to identify the use of proceeds; however, in most cases it is impossible to identify whether an observed use of proceeds announcement is the first. An analysis of announcement period returns associated with the sale is, therefore, predicated on a rational expectations hypothesis that, at the time of the sale, investors have a rational expectation about the disposition of sale proceeds. If the probability of the expected outcome equaling the actual disposition is less than one, tests performed using shorter intervals around the announcement period are less powerful. Increasing the returns interval, however, introduces the possibility that confounding events occur within the return window.

Table VII
Average CARs to Asset Sale Announcements and the Stated Use of Proceeds

Panel A of this table summarizes the mean *CARs* realized at the announcement date for 372 large asset sales completed between 1990 and 1998. Transactions are delineated by the primary stated use of sale proceeds. Abnormal returns are calculated using a standard market model methodology, the parameters of which are estimated over days -251 and -50 relative to the announcement date. Abnormal returns are cumulated over days -1 to $+1$ relative to the announcement day of the sale. Mean differences in *CARs* between the retention and payout subsamples are reported in Panel B. *p*-Values relating the statistical significance of the mean sample *CARs* in Panel A and *CAR* differences between the subsamples in Panel B are provided in parentheses.

Panel A: <i>CARs</i> from Days -1 to $+1$ Relative to Announcement				
	All Sales ($n = 372$)	Retention Sample ($n = 156$)	Debt Payout Sample ($n = 176$)	Equity Payout Sample ($n = 40$)
Mean	0.012	0.009	0.016	0.007
(<i>p</i> -value)	(0.010)	(0.029)	(0.067)	(0.459)
Panel B: Mean <i>CAR</i> ($-1, +1$) Differences Between Payout and Retention Subsamples				
		Retention minus Debt Payout	Retention minus Equity Payout	Debt Payout minus Equity Payout
Difference in means		-0.007	0.002	0.009
(<i>p</i> -value)		(0.079)	(0.499)	(0.072)

the average 0.7% *CAR* observed for sale announcements and equity distributions. The difference in the average announcement return to debt and equity distributions is 0.9% and is statistically significant at the 10% level indicating that, on average, stockholders react more favorably to a distribution of proceeds to debt. The asymmetric reaction to equity and debt distributions has an economic significance as it suggests that the returns to payout decisions observed in prior studies cannot be solely attributable to a reduction in managerial discretion, but may also be associated with factors unique to debt payouts such as an improvement in financial slack and/or a reduction in the expected cost of financial distress. It is also possible that shareholders regard managerial commitments to pay out to equity as less credible than the contractual constraint imposed by debt.

B. Multivariate Evidence on Announcement CARs

Table VIII summarizes the results of multivariate regressions of 3-day announcement period *CARs* on measures of the contemporaneous growth opportunities and post-sale industry-benchmarked capital expenditures of divesting firms. Model coefficients are estimated independently for the retention sample (Models 1–3), debt payout sample (Models 4 and 5), and equity payout sample (Models 6 and 7). To evaluate the degree to which shareholder wealth

Table VIII
OLS Regressions Explaining Announcement CARs to Divesting Firms Delineated by the Stated Use of Proceeds

This table presents the results of ordinary least squares regressions of 3-day CARs to asset sale announcements. Subsamples are delineated based on divesting management's stated use of proceeds. Abnormal returns are calculated using a standard market model methodology, the parameters of which are estimated over days -251 and -50 relative to the announcement date. Abnormal returns are cumulated over days -1 to +1 relative to the announcement day of the sale. Relative transaction size is computed as reported value of the sale transaction divided by the book value of assets of the divesting firm 1 year prior to the sale. Low growth is an indicator variable equal to one for firms reporting a market-to-book assets ratio below that of the median firm in their respective subsample, and is zero otherwise. Net-of-industry investment is the difference between capital investment of the sample firm in the fiscal year following the sale and the contemporaneous investment of the median firm in the same industry defined by the sample firm's SIC code. Net-of-industry debt is equal to the difference between total debt for the sample firm in the fiscal year prior to the sale and total debt for the median firm in the same industry defined by the divesting firm's primary SIC code. Net-of-industry cash is equal to the difference between the cash and marketable securities held by the sample firm in the year prior to the sale (scaled by total assets) and that of the median firm in the same industry defined by the divesting firm's primary SIC code. Inside ownership is the fractional stock ownership of officers and directors in the divesting firm in the fiscal year prior to the sale. *p*-Values for the coefficients are provided in parentheses.

Subsample	Retention Model 1 156	Retention Model 2 156	Retention Model 3 135	Debt Payout Model 4 176	Debt Payout Model 5 160	Equity Payout Model 6 40	Equity Payout Model 7 36
Number of Observations							
Intercept	0.002 (0.759)	-0.003 (0.686)	-0.003 (0.693)	0.034 (0.028)	0.033 (0.041)	-0.005 (0.769)	-0.009 (0.586)
Relative transaction size	0.003 (0.908)	0.009 (0.699)	0.014 (0.678)	-0.001 (0.921)	-0.001 (0.979)	0.127 (0.056)	0.195 (0.005)
Low growth indicator	-0.005 (0.083)	-0.014 (0.068)	-0.013 (0.219)	-0.023 (0.157)	-0.020 (0.245)	0.012 (0.071)	0.012 (0.079)
Net-of-industry investment	0.242 (0.056)	0.312 (0.015)	0.300 (0.023)	-0.270 (0.125)	-0.249 (0.172)	0.211 (0.695)	0.105 (0.846)
Low growth indicator * net-of-industry investment	-0.288 (0.062)	-0.347 (0.043)	-0.334 (0.056)	0.700 (0.002)	0.691 (0.003)	-0.046 (0.958)	-0.334 (0.709)
Net-of-industry debt		-0.067 (0.047)	-0.064 (0.069)	0.117 (0.067)	0.097 (0.093)	-0.194 (0.083)	-0.236 (0.043)
Net-of-industry cash		-0.086 (0.103)	-0.081 (0.124)	-0.076 (0.077)	-0.060 (0.346)	0.124 (0.600)	-0.101 (0.659)
Inside ownership			-0.008 (0.878)		-0.015 (0.773)		-0.063 (0.662)
Adjusted R ²	0.012	0.030	0.022	0.044	0.033	0.128	0.149

is adversely (positively) affected by retention (payout) decisions in firms with poor growth opportunities, each regression includes an indicator variable “low growth” equal to one if market-to-book for an observation is below the median firm in the subsample and zero if it is above or equal to the median firm. Industry-benchmarked capital investment is also included in each regression as a proxy for the market’s expectation about the post-sale investment of a divesting firm. To account for the moderating effect of growth opportunities on the returns to investment, an interaction term combines the low market-to-book indicator and net-of-industry investment.⁸ The interaction term captures the incremental impact of benchmarked investment on abnormal returns for the subset of firms with poor contemporaneous growth opportunities over those with above median growth opportunities. To incorporate capital structure and financial flexibility considerations, expanded specifications in Table VIII include deviations from industry medians in debt-to-assets and cash holdings measured for the divesting firm in the fiscal year preceding the sale. Additional specifications with data on the stock ownership of insiders are also provided. Finally, each specification in Table VIII controls for relative transaction size, which is defined as the market value of the transaction divided by the book value of assets in the fiscal year prior to the sale.

Models 1–3 of Table VIII summarize regressions of 3-day *CARs* to the shareholders of firms electing to retain sale proceeds. Coefficients on the low-growth indicator variable are negative and significantly different from zero in Models 1 and 2 suggesting that, consistent with the efficiency hypothesis, shareholders react more favorably to the retention decisions of firms with above median growth opportunities. The regressions also indicate that benchmarked investment is significantly positively related to the returns to sales in the retention sample. The interaction term between industry-benchmarked investment and the low-growth indicator variable, however, is consistently negative. For example, in Model 1 the coefficient on net-of-industry investment, which relates the effect of benchmarked investment in firms with good growth opportunities, is 0.242. The coefficient on the interaction term, which captures the marginal impact of benchmarked investment in low growth firms, is -0.288 . Consistent with the efficiency hypothesis, these results imply that returns to sales and coincident retention decisions are higher for firms when expected capital expenditures are high and growth opportunities are significant. Consistent with the agency costs of managerial discretion, the results also indicate that shareholders of firms with relatively poor growth opportunities are made worse off by retentions decisions when post-sale excess investment is substantial.

The coefficient on net-of-industry debt in Model 2 of Table VIII is negative and significant, indicating that asset sale *CARs* to shareholders of firms retaining proceeds are declining in the benchmarked debt-to-assets ratio of the

⁸ Hendershott (1996) notes that industry investment benchmarks are only appropriate to the extent that the investment opportunities of the sample firms are not significantly better than those of the median firm in the industry.

firm. This result supports the hypothesis that shareholders discount retention decisions when a debt allocation might otherwise reduce the agency costs of debt in overlevered firms. Variation in shareholder announcement returns to payout decisions and net-of-industry debt are considered in Models 4–7 to examine the robustness of this conclusion. Model 2 also includes industry-benchmarked cash of the divesting firm. The sign on the cash coefficient is negative, suggesting that the flexibility benefits associated with retained proceeds are declining in the existing normalized cash holdings of the firm. This coefficient is only marginally significant, however, and in fact becomes statistically insignificant in the reduced sample specification in Model 3. The proportional share ownership of insiders is included in Model 3; however, the coefficient is insignificantly different from zero. This result implies that the incremental wealth effects associated with asset sales and retention decisions are largely invariant to the ownership stake of insiders, despite the perceived benefits of incentive alignment on the subsequent use of retain cash proceeds. The results summarized in Models 1 and 2 are qualitatively similar to those in the reduced sample in Model 3.

Models 4 and 5 of Table VIII summarize *CAR* regressions for the subsample of firms distributing proceeds to debt. Negative coefficients on the low-growth indicator variable indicate that returns to the debt payout subsample are also increasing in the firm's growth opportunities, although this result is marginally insignificant. The observed lower incremental returns to debt payout decisions for low market-to-book firms is consistent with Brown et al. (1994), who suggest that payouts in distress provide a negative signal about the value of remaining growth opportunities. In addition, while a debt payout may reduce immediate liquidity for firms with remaining growth opportunities, these distributions likely also lower required yields and contractual constraints on subsequent financing. A positive and significant relation between excess investment and the returns to debt distributions for the subsample of firms with poor growth opportunities is also observed. This finding coheres with the managerial discretion hypothesis, which suggests that a portion of the benefits attributable to debt allocations obtain from the divestiture of capital in firms with few growth opportunities and anticipated excess investment.

Positive and significant coefficients on net-of-industry debt in Models 4 and 5 of Table VIII indicate that the returns to sales are increasing in the debt payout decisions of firms levered in excess of an industry median. This result is consistent with the notion that distributions to debt are efficient for the shareholders of firms with excessive leverage either because such payments mitigate the agency costs of debt, or similarly, because they resolve uncertainty regarding financial distress or default. Models 4 and 5 also indicate that shareholder *CARs* to debt payout decisions are less positive for firms with cash holdings above the median same industry firm, although this result is not statistically significant for the reduced sample in Model 5. The coefficient on inside ownership is insignificantly different from zero in Model 5, suggesting that share ownership by insiders does not otherwise affect the returns observed in the subsample of firms paying out proceeds to debt.

Models 6 and 7 of Table VIII summarize 3-day *CAR* regressions for the subsample of asset sales events that are followed by a distribution of proceeds to equity. Positive and significant coefficients on the “low growth” indicator variable suggest that payout decisions create value, in part, by reducing managerial discretion in firms with few remaining growth opportunities. In keeping with the results in Models 1–3, announcement period returns to equity payout decisions are also decreasing in the industry-benchmarked debt capitalization of the divesting firm prior to the sale. This reinforces the prior conclusion that distributions to debt may be optimal for shareholders in overlevered firms, even when the alternative is a distribution to equity. As in the prior regressions, the results of Model 7 indicate that insider shareholdings do not significantly alter announcement period *CARs* in cases where proceeds are distributed to equity.

C. Long-Run Equity Returns and the Allocation of Sale Proceeds

As with most corporate events, it is likely that the full impact of management’s decision regarding the distribution of sale proceeds, or the reallocation of retained cash, is only partially incorporated into security prices around a sale announcement date. In the context of a payout decision following a sale, voluntary commitments to distribute proceeds may not be fully priced by investors until disbursement. Partial price adjustments are also likely if investors remain uncertain about the returns to projects available to managers retaining proceeds, or if managerial statements regarding the disbursement of proceeds are systematically inaccurate. Shareholder returns over an extended interval can also provide additional insight into the extent to which divesting firms are characterized by pervasive managerial agency problems. Lang et al. (1995) and Allen and McConnell (1998) posit that poor performance preceding asset sales generally is symptomatic of a broader unconstrained agency problem in divesting firms. This, in turn, suggests that divesting firms, particularly those retaining discretionary proceeds, might be expected to continue to underperform a risk-adjusted benchmark.

Table IX lists the parameter estimates of factor model regressions for 24-month rolling event time portfolios formed on the asset sale observations used in this sample. Results are provided for independent event portfolios delineated by the stated use of sale proceeds. Given significant changes in the underlying asset base and capitalizations of the divesting firms, asset prices are modeled using the factor specification employed in Eckbo, Masulis, and Norli (2000). These authors find that issuer underperformance following primary seasoned equity offerings can be explained by a lower systematic risk exposure for issuing firms relative to a sample of non-issuing match firms. They reason that as issuers reduce leverage, their exposure to unexpected inflation and default risk decreases, thus lowering the stock’s expected return. In each calendar month of this sample, a portfolio is formed that includes those firms that completed an asset sale between 1 month and 24 months following the calendar month of the sale announcement. Independent portfolios are formed

Table IX
Alphas and Factor Loadings of Portfolios Formed on Asset Sale Events and the Stated Use of Sale Proceeds

The sample consists of 400 asset sale events completed between 1990 and 1998. Portfolios are formed in event time by including in month t firms from a subsample, formed on the stated use of proceeds, that completed a sale between 1 month and 24 months following the calendar month of the sale announcement. The zero-investment portfolio is a portfolio that is long in retaining firms and short in debt and equity payout firms. The following time series regression is estimated using monthly observations beginning in January 1990 and ending December 2000:

$$R_{pt} = \alpha_p + \beta_1 RM_t + \beta_2 \Delta RPC_t + \beta_3 (BAA - AAA)_t + \beta_4 UI_t + \beta_5 (20y - 1y)_t + \beta_6 TBILLSpr_t + \varepsilon,$$

where R_{pt} is the return on a portfolio in month t formed by subtracting the 1-month Treasury-bill rate from the equally-weighted market return, ΔRPC is the percent change in the real per-capita consumption of nondurable goods, $BAA - AAA$ is the difference in the monthly yield changes on bonds rated BAA and AAA by Moody's, UI is a measure of unanticipated inflation, $20y - 1y$ is the return difference between Treasury bonds with 20 and 1 years to maturity, respectively, and $TBILLSpr$ is the return difference between 90-day and 30-day Treasury bills. Coefficients are estimated using ordinary least squares, and p -values for each coefficient are provided in parentheses.

Factor	Proceeds Retained	Proceeds Distributed to Debt	Proceeds Distributed to Equity	Zero Investment
α	0.007 (0.089)	0.001 (0.807)	-0.004 (0.502)	0.004 (0.377)
RM	0.936 (<0.001)	0.901 (<0.001)	0.897 (<0.001)	0.895 (<0.001)
ΔRPC	0.005 (0.588)	0.0139 (0.277)	-0.019 (0.118)	0.006 (0.534)
$BAA - AAA$	0.022 (<0.001)	0.009 (0.300)	0.014 (0.094)	0.014 (0.282)
UI	-0.018 (0.208)	0.009 (0.685)	-0.018 (0.417)	-0.001 (0.929)
$20y - 1y$	-0.037 (0.779)	-0.194 (0.326)	-0.275 (0.176)	-0.168 (0.221)
$TBILLSpr$	-8.245 (0.286)	-4.634 (0.689)	12.038 (0.298)	-1.076 (0.891)
R^2	0.632	0.421	0.414	0.573

on the stated use of sale proceeds. The calendar time returns to portfolios are then used to estimate the following specification:

$$R_{pt} = \alpha_p + \beta_1 RM_t + \beta_2 \Delta RPC_t + \beta_3 (BAA - AAA)_t + \beta_4 UI_t + \beta_5 (20y - 1y)_t + \beta_6 TBILLSpr_t + \varepsilon, \quad (3)$$

where R_{pt} is the return on a portfolio in month t formed by subtracting the 1-month Treasury-bill rate from the equally-weighted portfolio return, RM is the excess return on the market, ΔRPC is the percent change in real per-capita consumption of nondurable goods, $BAA - AAA$ is the difference in the monthly yield changes on bonds rated BAA and AAA by Moody's, UI is a measure of unanticipated inflation, $20y - 1y$ is the return difference between Treasury bonds with 20 years to maturity and 1 year to maturity, and $TBILLSpr$ is the return difference between 90-day and 30-day Treasury bills.⁹ In the context of

⁹ I thank Espen Eckbo, Ron Masulis, and Oyvind Norli for generously providing me with the updated factor data used to conduct this analysis.

the above model, the estimate of the intercept term (α_p) provides a measure of the mean monthly portfolio abnormal return.

The results in Table IX model the returns to four portfolios formed on: (i) firms retaining proceeds, (ii) firms distributing proceeds to debt, (iii) firms distributing proceeds to equity, and (iv) a zero-investment portfolio that is long in firms electing to retain proceeds and short in firms opting to distribute proceeds to either debt or equity. For the subsample of retaining firms, the intercept is 0.007 ($p = 0.089$), suggesting that these firms tend to outperform by over one half of one percent per month. Compounding this return over the 2-year period results in an economically significant risk-adjusted return of 18.22%. Significant risk-adjusted abnormal performance is not observed in portfolios formed on debt or equity distributions, and the returns difference between the payout and retention samples, measured by the zero-investment portfolio, is not statistically different from zero. Overall, the results of the analysis indicate that shareholders respond relatively efficiently to the distribution of sale proceeds. The positive and significant long-run returns to retaining firms suggest that, if anything, uncertainty regarding future investment results in a significant discount to the announcement returns to sales that coincide with retention decisions. These findings are also generally inconsistent with the notion that the shareholders of firms retaining proceeds, and those of divesting firms more generally, are exposed to substantial agency conflict over a prolonged period following an asset sale.

V. Conclusion

Asset sales are common corporate events that frequently result in a substantial increase in the level of discretionary funds at the disposal of divesting managers. From a shareholder perspective, the existing literature suggests countervailing costs and benefits associated with the retention of sale proceeds for subsequent investment. From an efficiency perspective, retained proceeds allow the firm to bypass external capital markets in financing any remaining positive NPV projects. Alternatively, if management's personal incentives are unconstrained, any financing benefits are likely to be subsumed by the agency costs of managerial discretion. Utilizing data from 400 large cash transactions between 1990 and 1998, this study examines the role of growth opportunities and capital expenditures on the allocation of sale proceeds between the firm and its claimants, as well as the cross-sectional variation in shareholder returns to these allocation decisions.

In keeping with posited investment efficiencies, proceeds retention, relative to either a debt or equity distribution, is positively correlated with a divesting firm's growth opportunities and post-sale capital investment. Empirical evidence, however, also supports an agency-based motive for the retention of proceeds. For example, firms retaining proceeds consistently invest at rates above their industry peers, and this excess investment is not attributable to a pre-sale financial constraint. In addition, the likelihood of a distribution of sale proceeds to either debt or equity is positively correlated with the ownership of

officers and directors of the divesting firm. Financial flexibility provides additional incentive for the retention of sale proceeds by firms facing uncertain or constrained access to internal capital. The empirical analysis here does not support a flexibility motive; however, as measures of prior dividend activity, income volatility, cash stock, and cash flow for divesting firms fail to provide additional explanatory power in regressions predicting retention decisions.

While management's choice regarding the use of proceeds is revealing, announcement period stock price reactions to these decisions provide additional insight into the trade-off between the hypothesized benefits of investment efficiencies and the agency costs of retained proceeds. Consistent with the efficiency benefits, announcement returns to retention decisions are marginally higher for firms with above median contemporaneous growth opportunities, and are increasing in industry-benchmarked investment for a subset of firms with superior growth opportunities. However, lower returns to retaining firms obtain for the subset of firms that invest at a rate in excess of their industry peers but have poor growth opportunities—a finding that conforms with the contention that lower returns to retention decisions can be attributed to managerial discretion. Abnormal returns to shareholders over a 24-month interval following a sale announcement are positive for retaining firms and insignificantly different from zero for firms distributing proceeds to either debt or equity. These results suggest that the investment benefits associated with sale proceeds are only partially incorporated into share prices around the announcement date of a sale. Furthermore, these findings are inconsistent with the notion that, on average, shareholders of firms retaining proceeds, and those of divesting firms more generally, are exposed to continued unresolved agency conflict.

Capital structure considerations also play an important role in the allocation of sale proceeds between the firm and its claimants. The likelihood of a distribution to debt, relative to either a retention or equity payout decision, is decreasing in a divesting firm's interest coverage and increasing in industry-benchmarked debt. Controlling for interest coverage, the latter result is consistent with the notion that some debt disbursements are used to adjust suboptimal debt capitalizations. In keeping with this implication, the abnormal stock returns of divesting firms around sale announcements are declining in net-of-industry debt for subsamples of firms that retain or pay out proceeds to equity, but are increasing in benchmarked leverage for firms distributing proceeds to debt. Overall these results suggest that the agency cost of debt also plays a role in determining the likelihood and structure of payout activity, as well as the returns to divesting shareholders around asset sale events.

REFERENCES

- Alexander, Gordon J., George P. Bensen, and Joan M. Kampmeyer, 1984, Investigating the valuation effects of announcements of voluntary corporate selloffs, *Journal of Finance* 39, 502–517.
- Allen, Jeffrey W., and John J. McConnell, 1998, Equity carve-outs and managerial discretion, *Journal of Finance* 53, 163–186.
- Amihud, Yakov, and Baruch Lev, 1981, Risk reduction as a motive for conglomerate mergers, *Bell Journal of Economics* 12, 605–617.

- Blanchard, Oliver J., Florencio Lopez-de-Silanes, and Andrei Shleifer, 1994, What do firms do with cash windfalls? *Journal of Financial Economics* 36, 337–360.
- Brown, David J., Christopher M. James, and Robert M. Mooradian, 1994, Asset sales by financially distressed firms, *Journal of Corporate Finance* 1, 233–257.
- Brown, Stephen J., and Jerold B. Warner, 1985, Using daily stock returns: The case of event studies, *Journal of Financial Economics* 14, 3–31.
- DeAngelo, Harry, and Linda DeAngelo, 2000, Controlling stockholders and the disciplinary role of corporate payout policy: A study of the Times Mirror Company, *Journal of Financial Economics* 56, 153–208.
- Denis, David J., 1994, Investment opportunities and the market reaction to equity offerings, *Journal of Financial and Quantitative Analysis* 29, 159–177.
- Denis, David J., Diane K. Denis, and Atulya Sarin, 1994, The information content of dividend changes: Cash flow signaling, overinvestment, and dividend clienteles, *Journal of Financial and Quantitative Analysis* 29, 567–587.
- Easterbrook, Frank, 1984, Two agency-cost explanations of dividends, *American Economic Review* 74, 650–659.
- Eckbo, B. Espen, Ronald W. Masulis, and Oyvind Norli, 2000, Seasoned public offerings: Resolution of the ‘new issues puzzle’, *Journal of Financial Economics* 56, 251–292.
- Fazzari, Steven M., Robert G. Hubbard, and Bruce C. Petersen, 1988, Financing constraints and corporate investment, *Brookings Papers on Economic Activity*, pp. 141–195.
- Fenn, George W., and Nellie Liang, 2001, Corporate payout policy and managerial stock incentives, *Journal of Financial Economics* 60, 45–72.
- Harford, Jarrad, 1999, Corporate cash reserves and acquisitions, *Journal of Finance* 54, 1969–1997.
- Harford, Jarrad, and David Haushalter, 2003, Cash-flow shocks, investment, and financial constraint: Evidence from a natural experiment, University of Washington.
- Healy, Paul, Krishna Palepu, and Richard Ruback, 1992, Does corporate performance improve after mergers? *Journal of Financial Economics* 31, 135–175.
- Hendershott, Robert J., 1996, Which takeover targets overinvest? *Journal of Financial and Quantitative Analysis* 31, 563–580.
- Hennessey, Christopher A., 2004, Tobin’s Q, debt overhang, and investment, *Journal of Finance* 59, 1717–1742.
- Hite, Gailen, James Owers, and Ronald Rogers, 1987, The market for interfirm asset sales: Partial sell-offs and total liquidations, *Journal of Financial Economics* 18, 229–252.
- Jain, Prem C., 1985, The effect of voluntary sell-off announcements on shareholder wealth, *Journal of Finance* 40, 209–224.
- Jensen, Michael C., 1986, Agency costs of free cash flow, corporate finance, and takeovers, *American Economic Review* 76, 323–329.
- Jensen, Michael C., and William H. Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 3, 305–360.
- Kmenta, Jan, 1986, *Elements of Econometrics* (Macmillan Publishing Company, New York, NY).
- Lang, Larry H. P., Annette B. Poulsen, and Rene M. Stulz, 1995, Asset sales, firm performance, and the agency costs of managerial discretion, *Journal of Financial Economics* 37, 3–37.
- Lie, Erik, Financial flexibility, performance, and the corporate payout choice, *Journal of Business* (forthcoming).
- Murphy, Kevin, 1985, Corporate performance and managerial remuneration: An empirical analysis, *Journal of Accounting and Economics* 7, 11–42.
- Myers, Stewart, 1977, The determinants of corporate borrowing, *Journal of Financial Economics* 5, 147–175.
- Myers, Stewart, and Nicolas Majluf, 1984, Corporate financing decisions when firms have investment information that investors do not, *Journal of Financial Economics* 13, 187–220.
- Opler, Tim, Lee Pinkowitz, Rene M. Stulz, and Rohan Williamson, 1999, The determinants and implications of corporate cash holdings, *Journal of Financial Economics* 52, 3–46.
- Pilotte, Eugene, 1992, Growth opportunities and the stock price response to new financing, *Journal of Business* 65, 371–394.

- Schlingemann, Frederik P., Rene M. Stulz, and Ralph A. Walkling, 2002, Divestitures and the liquidity of the market for corporate assets, *Journal of Financial Economics* 64, 117–144.
- Servaes, Henri, 1994, Do takeover targets overinvest? *Review of Financial Studies* 7, 253–277.
- Shleifer, Andrei, and Robert W. Vishny, 1992, Liquidity values and debt capacity: A market equilibrium approach, *Journal of Finance* 47, 1343–1367.
- Shleifer, Andrei, and Robert W. Vishny, 1989, Management entrenchment: The case of manager-specific investments, *Journal of Financial Economics* 25, 123–140.
- Slovin, Myron, Marie E. Sushka, and Steven R. Ferraro, 1995, A comparison of the information conveyed by equity carve-outs, spin-offs and asset sell-offs, *Journal of Financial Economics* 37, 89–104.
- Smith, Clifford W., and Jerold B. Warner, 1979, On financial contracting: An analysis of bond covenants, *Journal of Financial Economics* 7, 117–161.
- Smith, Clifford W., and Ross L. Watts, 1992, The investment opportunity set and corporate financing, dividend and compensation policies, *Journal of Financial Economics* 32, 263–292.
- Stulz, Rene M., 1990, Managerial discretion and optimal financing policies, *Journal of Financial Economics* 26, 3–28.