

Block Share Purchases and Corporate Performance

JENNIFER E. BETHEL, JULIA PORTER LIEBESKIND, and TIM OPLER*

ABSTRACT

This paper investigates the causes and consequences of activist block share purchases in the 1980s. We find that activist investors were most likely to purchase large blocks of shares in highly diversified firms with poor profitability. Activists were not less likely to purchase blocks in firms with shark repellents and employee stock ownership plans. Activist block purchases were followed by increases in asset divestitures, decreases in mergers and acquisitions, and abnormal share price appreciation. Industry-adjusted operating profitability also rose. This evidence supports the view that the market for partial corporate control plays an important role in limiting agency costs in U.S. corporations.

IT IS NOW WELL UNDERSTOOD that the hostile takeovers and leveraged buyouts of the 1980s were typically followed by improvements in shareholder value and profitability.¹ Less well understood, but even more frequent, were attempts by activist minority investors to influence corporate policy and performance. By our count, 33 percent of the firms on the 1980 *Fortune* 500 list experienced an attempt by an activist minority investor to influence policy in the 1980s, whereas only 9 percent experienced a leveraged buyout and 8 percent experienced a hostile takeover. The decade of the 1990s has seen hostile takeover and leveraged buyout activity subside. Activist investors, however, continue their efforts to influence corporate policy. In recent years, activist investors such as Carl Icahn, Kirk Kerkorian, Bennett LeBow, and Bob Monks have purchased significant blocks of stock and have lobbied for

*Bethel is at Babson College and the U.S. Securities and Exchange Commission, Liebeskind is at the University of Southern California, and Opler is with Deutsche Morgan Grenfell and Ohio State University. Michael Avin, Gareth Hosford, Ming Lee, and Karen Liebowitz provided superb research assistance. We thank an anonymous referee, John Bizjac, Larry Dann, Charles Hadlock, Clifford Holderness, David Ikenberry, Chris James, Scott Lee, David Mayers, Wayne Mikkelsen, Megan Partch, Michael Ryngaert, Jonathan Sokobin, René Stulz (the editor), Sheridan Titman, and seminar participants at Babson College, Boston College, Queens University, Rice University, Texas A&M, the University of Florida, and the University of Oregon for helpful comments and suggestions. The views expressed in this paper are those of the authors and do not reflect those of the Securities and Exchange Commission or Commission staff.

¹ See Bhagat, Shleifer, and Vishny (1990), Kaplan (1989), Kaplan and Stein (1993), and Muscarella and Vetsuypens (1990).

improvements in large corporations including Chrysler, RJR/Nabisco, and Sears. What is not clear, however, is whether the purchase of partial control blocks with the intent to influence corporate policy improves firm performance and creates shareholder value.

We investigate this issue by documenting the causes and consequences of significant purchases of shares of large U.S. corporations in the 1980s. We ask three questions. First, what types of firms do activist investors target? Second, what types of operational and corporate governance changes do activist investors pursue? And third, does performance improve after large share block purchases by activist investors? Our inquiry extends previous research that documents the impact of block share purchases on corporate performance. Holderness and Sheehan (1985) and Barclay and Holderness (1991), for example, find that block purchases are typically followed by increases in share value and abnormally high rates of top management turnover. Similarly, Mikkelsen and Ruback (1985) document an increase in share price following 13D filings of 5 percent ownership, and Shome and Singh (1995) show that 96 block purchases made between 1984 and 1986 were followed by share price appreciation and modest improvements in accounting returns. We add to the literature by building a more complete picture of the effectiveness of the market for partial corporate control. We document both the causes and consequences of block purchases by activist, financial, and strategic investors with a comprehensive sample spanning the period from 1980 to 1989. We examine not only the performance implications of block share purchases, but also operational and governance changes that take place afterward.

We find that all three classes of investors targeted the stock of firms that were performing poorly and that these investors did not appear to be deterred by standard antitakeover defenses. In addition, activist investors were likely to purchase blocks of stock in more, rather than less, diversified firms. These results are consistent with the view that the market for partial corporate control helped reverse inefficient diversification (see Bhagat et al. (1990) and Comment and Jarrell (1995)). We also find that block purchases by activist investors were followed by increases in the rate of asset divestitures and share repurchases and by a decline in the rate of mergers and acquisitions. Moreover, activist block share purchases were followed by increases in operating profitability and abnormal stock price appreciation. Taken as a whole, this evidence suggests that the market for partial corporate control has played an important role in limiting agency costs due to the separation of ownership and control in large U.S. corporations.

The remainder of this paper is organized as follows. Section I discusses the relationship between block share purchases, defensive mechanisms, and the market for corporate control. Section II describes the sample selection procedure and data used in the study. The empirical evidence on the causes of block share purchases is presented in Section III, and the consequences of block share purchases are documented in Section IV. Section V summarizes our findings and concludes the paper.

I. Blockholders and the Market for Partial Corporate Control

Investors have incentives to purchase blocks of stock when the expected benefits of doing so outweigh the expected costs (Demsetz and Lehn (1985)). The potential benefits of buying a large block of stock in a firm, which include the payment of dividends and capital gains, may be especially significant if a block purchaser can influence policy so as to improve firm performance. The costs of influencing corporate performance through the purchase of a large block of stock include the loss of portfolio diversification and the expenditure of resources to monitor management, fight potential legal challenges, mount proxy contests, and the like. In this section, we develop hypotheses as to when investors are likely to purchase blocks of stock; that is, when investors are likely to incur the above-mentioned expenses in an effort to create value by influencing firm policy. Specifically, we discuss the impact of diversification on corporate value and examine a variety of defenses such as dual-class share structures, employee stock ownership plans (ESOPs), and incorporation in states with antitakeover statutes, which can raise the costs of corporate activism. In later sections we test these hypotheses to better understand the effectiveness and limits of the market for partial corporate control.

A. Target Firm Performance and Block Share Purchases

It is widely recognized that firm performance may suffer if the interests of managers diverge from those of stockholders. The market for corporate control, however, moderates the degree to which managers can pursue their own interests at shareholders' expense. Specifically, managers who fail to create shareholder value may be disciplined by investors who own large blocks of stock, or by their representatives on the board of directors (Butz (1994), Morck, Shleifer, and Vishny (1989)). This discipline can take several forms, including taking the firm over, putting it in play, mounting a proxy contest, replacing management, and initiating adverse publicity (Butz (1994), Manne (1965), Morck et al. (1989), Shleifer and Vishny (1986)). Such actions may pressure managers to change corporate policy; on average, such changes should lead to improvements in firm performance and create shareholder wealth. Thus, we would expect poorly performing firms to be among those most likely to be targeted by activists, and such firms would have strong incentives to alter their operating, financial, and governance policies to improve performance and thereby deter shareholder discipline.

One specific cause of poor firm performance in the 1980s appears to have been excessive levels of business diversification (Bhagat et al. (1990), Comment and Jarrell (1995), Lang and Stulz (1994)). Several explanations appear in the literature as to why firms that were highly diversified may have allocated resources less efficiently than focused firms in the 1980s. Many firms diversified in the 1960s and 1970s to create self-sustainable sources of financing to avoid having to rely on what were thought to be relatively costly

and inefficient external sources of capital. Although these firms were perhaps appropriately diversified for those eras, enhanced efficiency in external capital markets in the 1980s may have caused their business structures to become relatively less effective at allocating capital (Bhide (1990), Shin and Stulz (1996)). Second, diversified firms may have performed less well than more focused firms because diversification may have been undertaken to protect managerial rather than shareholders' wealth. Specifically, some managers may have diversified into unrelated lines of business to protect the value of their firm-specific human capital against bankruptcy risk (Amihud and Lev (1981) and Morck, Shleifer, and Vishny (1990)). Consistent with this argument, Denis, Denis, and Sarin (1997) find a strong negative relation between the level of diversification and the fractional equity ownership of officers and directors.

One implication of these arguments is that activist investors may have had an opportunity to improve firm performance by refocusing operations. In contrast to existing management, external investors may be particularly suited to this type of performance improvement because they typically are emotionally removed from the decision to divest lines of business. On the other hand, external investors may be somewhat less well suited to direct other types of performance improvement strategies such as those that require complex and specific knowledge. Thus we expect to observe outside investors preferentially targeting excessively diversified firms whose performance is suffering.

B. Defensive Mechanisms and Block Share Purchases

Realizing that activist investors want to refocus and perhaps downsize operations, self-interested managers will have incentives to raise the cost of takeover and outside investor intervention, by adopting defensive mechanisms. Some of these mechanisms, including dual-class share structures and ESOPs, repel activist investors by diminishing blockholders' voting power, thereby preventing large investors from using proxy contests or otherwise exercising their voting power to pressure managers to change corporate policy. Others, including antitakeover charter amendments and reincorporating in a state with antitakeover statutes, create legal obstacles to takeover, thereby raising the cost of launching takeovers or putting firms "in play" (Butz (1994), DeAngelo and Rice (1983), Shleifer and Vishny (1986)). In either case, defensive mechanisms raise the cost and, hence, lower the net benefit of purchasing blocks of stock and influencing corporate policies. The question then arises as to whether defensive mechanisms deter block purchases altogether. In this section we discuss several defensive mechanisms and review the empirical evidence regarding their effectiveness.

As discussed above, some defensive mechanisms diminish outside investor voting control, thereby raising the amount of stock necessary to control the firm. Dual-class share structures, for example, preferentially accord voting rights to certain shareholders: shareholders-at-large have less than their pro

rata voting share to influence corporate policy. The consequence is that voting control may be disproportionately concentrated in the hands of managers and other insiders, which can be problematic if insiders' voting power is used to protect their private consumption streams rather than shareholders' wealth (Ruback (1988)). Empirical evidence suggests that dual-class share structures raise the costs of disciplining managers. Jarrell and Poulsen (1988), for example, find that announcements of dual-class recapitalizations are accompanied by negative share price effects, especially for firms with high insider stock ownership.²

Like dual-class share structures, ESOPs dilute the voting power of outsider investors. Specifically, ESOPs transfer the control of shares to trustees who typically are elected by insiders. Although ESOPs may serve several purposes, including providing performance incentives to employees and tax benefits to firms, critics contend that they entrench incumbent management and are detrimental to shareholder interests. Consistent with this argument, Gordon and Pound (1990) find that ESOPs established in the presence of takeover activity and ESOPs that transfer control from outside shareholders to insiders reduce firm value. Similarly, Chang and Mayers (1992) find that ESOPs reduce firm value when the fraction of shares held by employees is large, and Mikkelsen and Partch (1994) find that operating profitability declines in the four years following ESOP adoption.

Whereas dual-class share structures and ESOPs diminish the voting power of blockholders, antitakeover charter amendments impose costs on investors of gaining control of target firms or winning management approval of corporate changes. These provisions, which include supermajority provisions, classified board provisions, fair price and redemption rights provisions, poison pills, and preferred stock authorizations, have often been cited as protecting managers' and insiders' interests at the expense of shareholders. Consistent with the argument that shark repellents are detrimental to shareholders' interests, Jarrell and Poulsen (1987) find negative stock price reactions to announcements of antitakeover charter amendments, and Ryngaert (1988) and Malatesta and Walkling (1988) find negative stock price reactions to poison pill announcements. Despite this evidence, the effectiveness of antitakeover charter amendments in deterring takeovers is unclear. Comment and Schwert (1995) find that poison pills do not reduce the likelihood of takeover. Similarly, Ambrose and Megginson (1992) find that antitakeover charter amendments and poison pills do not reduce the likelihood of takeover, although preferred stock authorizations appear to reduce takeover frequency.

Finally, second-generation state antitakeover statutes raise the costs of outside investors influencing firm policy and taking over companies by restricting large shareholders' voting rights and delaying mergers for periods

² Jarrell and Poulsen (1988) find an average one-day announcement return of -0.82 percent for a sample of 88 dual-class recapitalizations between 1976 and 1987. In contrast, Partch (1987) finds no significant stock price effects when dual-class stock structures are announced.

of three to five years for companies in their jurisdictions.³ Critics of these statutes argue that they limit shareholders' power to discipline managers. Karpoff and Malatesta (1989) and Szewczyk and Tsetsekos (1992) document empirical evidence consistent with this argument: firms affected by state antitakeover statutes experience negative average returns.

C. Other Deterrents to Block Share Purchases

In addition to the above-mentioned deterrents to large block purchases of stock, insider ownership may reduce the likelihood that activist investors purchase stock. On one hand, activist investors may have less incentive to purchase blocks of stock if managers own enough shares to align their interests with those of other shareholders. In this instance, there should be little opportunity for outside investors to improve firm performance. On the other hand, however, large insider stakes may lessen the ability of activist block purchasers to influence firm policy because it is unlikely that they can take the firm over or replace management (Stulz (1988)). Consequently, managers and other insiders may be able to pursue policies that are detrimental to other shareholders without incurring capital market discipline. Regardless of whether insider ownership is good or bad for shareholders, we hypothesize the firms with high insider ownership will be less likely to experience activist block share purchases. Consistent with this hypothesis, Morck, Shleifer, and Vishny (1988), and McConnell and Servaes (1990) find high levels of insider share ownership to be negatively related to measures of firm performance. In related work, Dann and DeAngelo (1988) and Denis (1990) find that changes in corporate financial structure that increase insiders' voting power reduce firm value.

Activist investors may also be less likely to purchase blocks in large firms due to wealth constraints (Demsetz and Lehn (1985)). Consistent with this theory, Ambrose and Megginson (1992) and Comment and Schwert (1995) find that large firms are less likely to become takeover targets than smaller firms.

II. Sample Selection and Data

A. Sample

We test the above hypotheses concerning the determinants of block share purchases using a sample of firms from the 1980 *Fortune* 500 list. We exclude foreign firms, subsidiary companies, cooperatives, and firms that de-

³ Second-generation state antitakeover laws were enacted after the U.S. Supreme Court overturned "first-generation" antitakeover legislation. Second-generation control share statutes in Indiana were upheld by the U.S. Supreme Court in 1987; an appellate court upheld Wisconsin's business combination statute in 1988. These laws usually include one or more of the following provisions: (i) control share provisions, which require that a target firm's shareholders preapprove acquisitions of voting rights above a certain level of ownership; (ii) fair price provisions, which regulate the back-end price in a two-tiered takeover bid involving large shareholders; and (iii) freeze-out laws, which prohibit a bidder from engaging in a business combination with a target firm for a specified period, unless so approved by the target firm's board (Karpoff and Malatesta (1989)).

clared bankruptcy in 1980, which leaves a sample of 425 firms. Of these, 146 firms disappeared through acquisitions, buyouts, and bankruptcy, and 279 firms survived as independent concerns through the end of 1989.

We examine the determinants of block share purchases between 1980 and 1989 using the sample of 425 firms. Because some firms experienced repeated block share purchases in a short time period, we only count block purchases that are preceded by 36 months of inactivity. Gillette, for example, experienced block purchases in 1986, 1987, and 1988, and we include only the first of these blocks in our empirical analyses. But if two block purchases in the same firm had 37 months between them, both would be included in the sample. The result of excluding blocks that occur close together in time is to reduce the sample from 330 to 244 block purchases. The dataset of block share purchases is available on the *Journal of Finance* World Wide Web site.

To investigate the consequences of block share purchases, we document changes in firms' operations, financial structures, and governance structures (e.g., divestitures, acquisitions, share repurchases, leverage, employee layoffs, CEO turnover). We also measure accounting and stock market performance after block purchases. For analyses that require accounting data, we exclude firms that did not have accounting data for the three years after block purchase. For stock market performance analyses, we require that firms survive as publicly traded entities for at least three years after block share purchase.⁴ Although these selection rules potentially bias our results, they are necessary to measure the impact of block purchases on firms' policies.

B. Definition of Shareholder Groups

We follow McConnell and Servaes (1990) in defining two primary groups of shareholders: blockholders and insider owners. McConnell and Servaes' classification of shareholder groups follows the Securities and Exchange Commission (SEC) filing procedures, which define a "blockholder" as a direct owner of a beneficial interest of 5 percent or more of a firm's outstanding shares, and an "insider" as an officer or director of a firm or a member of an officer's or director's family.⁵ We then classify blockholders into three groups. *Activist* blockholders are those who announce their intention of influencing firm policies or who are known for activist policies in the past. This group includes a number of well-known "raiders" such as Carl Icahn and Irwin Jacobs. Also included are a number of other well-known investors such as the Bass Brothers, Mario Gabelli, and George Soros. The group of *financial* blockholders includes banks, pension funds, money managers, and individ-

⁴ This subsample proves to be smaller than that based on the availability of accounting data because it is possible to collect accounting data for some firms that ceased to exist as publicly traded entities. The main results obtained when analyzing ex post accounting data do not change when we require that firms continue to exist as publicly traded entities.

⁵ In a small number of cases, we include blocks that consist of 4.5 percent to 4.9 percent of a company's shares.

uals who do not adopt a public activist position. This group includes organizations such as State Farm and Fidelity Investments. Finally, we classify nonfinancial investors who are unopposed by management as *strategic* investors. This group includes 11 large share purchases by Gulf & Western in the early 1980s, as well as periodic interfirm share purchases by firms such as General Electric and IBM.

Although we are primarily interested in the relationship between *activist* block purchases and corporate performance, it is plausible that block purchases by other types of investors influence corporate policy as well. For example, firms with a significant financial blockholder may be less likely to adopt value-decreasing policies. This view is supported by Jarrell and Poulsen (1987), who find that firms with low institutional holdings are likely to adopt antitakeover amendments, and by Brickley, Lease, and Smith (1988), who find that certain types of financial blockholders actively oppose management proposals that are likely to harm shareholders. Additionally, financial blockholders may target firms they believe will appreciate in value or they may target underperforming firms with the hope of influencing corporate policies to improve performance. Consequently we expect to observe improvements after financial block share purchases. Finally, investors who buy for strategic reasons, such as corporations, may also be expected to increase shareholder value insofar as strategic block purchases can bond partners in synergistic strategic alliances. Consequently, we expect to observe improved performance in firms with strategic block purchases.

In Section I, we argue that investors are more likely to purchase large blocks of stock when they can influence firm policies and improve performance. However, not all blockholders, as defined by the SEC, can be expected to exert a disciplinary effect on managers. In particular, some existing blockholders such as founders, founding families, and family trusts can be expected to reflect insider interests. Family trusts, for example, have incentives to ensure continued employment in the firm for family members and adequate dividends to support beneficiaries' private consumption.⁶ Therefore, when measuring insider ownership, we classify the ownership interests of family blockholders with those of other insider owners as defined by the SEC.

C. Data Sources

We collect data on corporate ownership structure from *Value Line* and the *Wall Street Journal*. In some cases, we refer to 13D and 13G filings to check data integrity. Data on diversification are based on Trinet Inc.'s biannual

⁶ Chandler (1990), among others, argues that founders and founding families may be more concerned with maintaining control of a business and its associated private income stream than with maximizing the value of the firm. Consistent with the conjecture that some blockholders represent the interests of insiders rather than of shareholders at large, Slovin and Sushka (1993) find a two-day abnormal stock price reaction of 3.01 percent when the deaths of insider blockholders are announced.

Large Establishment Database, which reflects the diversification of firms at the beginning of 1981, 1983, 1985, 1987, and 1989.⁷ Trinet provides information on establishments (i.e., plants, administrative offices, and other separate geographic business locations) that employ 20 or more persons in the United States. Trinet classifies each establishment according to a primary four-digit SIC code and provides information on the establishment's number of employees and estimated sales in current dollars. Establishment-level data can be aggregated to the company level using parent company codes. Trinet updates its database through direct surveys, telephone calls to establishments, and by referencing corporate financial data and news items. We aggregate Trinet information to the firm level and create a Herfindahl Index measure of firm focus. The Herfindahl Index is computed as the sum of the squared proportions of the number of firm employees in each two-digit line of business (e.g., Comment and Jarrell (1995)). This ratio will be lower for more diversified firms and higher for focused firms. Data on dual-class share structures, antitakeover charter amendments, ESOPs, and states of incorporation are obtained from *Moody's Industrial Manual*. We use information supplied by Karpoff and Malatesta (1989) to identify states that adopted second-generation antitakeover laws. Firm financial information is obtained from COMPUSTAT. Information on strategic and financial events is collected from the *New York Times* and the *Wall Street Journal*.

III. Empirical Results: The Antecedents of Block Share Purchases

A. Sample Characteristics

Table I describes the frequency and type of block share purchases in the full sample of 425 firms. In all, 244 block share purchases took place in the sample, an average of 0.57 per firm.⁸ Activist block share purchases were more common ($N = 151$; a rate of 0.36 per firm) than either financial block share purchases ($N = 61$; 0.14 per firm) or strategic/corporate block share purchases ($N = 32$; 0.07 per firm). Activist and financial block share purchases were most frequent in 1985 and 1986, whereas strategic purchases became less frequent after 1982. The decline in the frequency of strategic block purchases reflects the reversal of conglomerate diversification strategies in the early 1980s by a few large firms such as Gulf & Western and Teledyne.

Table II shows the distribution of block share purchases by industry. The industries with the most block purchases are transportation equipment and industrial machinery, although these are not the most highly represented in terms of the percent of sample years because these industries are heavily

⁷ Because our regressions employ annual data but Trinet data are biannual, we use Trinet-based measures of diversification from odd years in preceding even years. So, for example, the Herfindahl ratio in our regressions for 1982 is based on Trinet data released in early 1983.

⁸ Note that this average does not imply that block share purchases took place in more than half of the sample firms, because multiple block share purchases took place in some firms.

Table I
Distribution of Block Share Purchases by Year

The table shows the frequency of blockholder purchases by year. The sample consists of 425 firms in the 1980 *Fortune* 500 group of firms. Block share purchases are identified when a shareholder bought at least 5 percent of a firm's outstanding common stock. The sample shown here includes firms that had not experienced a block purchase of a similar type in the three years prior to the purchase date. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. The number of firms in the sample at the beginning of each year is also shown.

Year	Activist Blocks (N = 151)	Financial Blocks (N = 61)	Strategic Blocks (N = 32)	Total Blocks (N = 244)	Number of Surviving Firms at Beginning of Year
1980	13	2	5	20	425
1981	18	0	6	24	424
1982	14	6	10	30	424
1983	12	6	5	23	415
1984	15	6	1	22	393
1985	17	13	2	32	369
1986	22	11	1	34	338
1987	17	7	0	24	316
1988	16	2	1	19	290
1989	7	8	1	16	279

populated with firms. There is no other obvious industry clustering in the sample.

B. Sample Disappearances

Table III shows the fraction of the firms in the sample that disappeared within two years after a block purchase and the reason for the disappearance. Following an activist block purchase, 24 percent of target firms disappeared, primarily due to takeovers and leveraged buyouts. In contrast, less than 13 percent of target firms disappeared in the two years after financial and strategic block purchases, and only 7 percent of target firms disappeared if no block purchase took place. Notably, only 31 of the 219 *Fortune* 500 firms that experienced takeovers saw an activist block purchase beforehand. The market for complete corporate control appears to be largely distinct from the market for partial corporate control.

C. Univariate Comparisons

Table IV compares firms that experienced a block share purchase to those that did not. The table shows the mean and quartiles of a variety of variables for firms, stratified by block purchase type. The table also shows the statistical significance of differences in distribution between the no block

Table II
Distribution of Block Share Purchase by Industry

The table shows the distribution of blockholder purchases by two-digit SIC industry code. The sample consists of 425 firms in the 1980 *Fortune* 500 group. Block share purchases are identified when a shareholder bought at least 5 percent of a firm's outstanding common stock in a given year. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. The sample shown here includes firms that had not experienced a block purchase of a similar type in the three years prior to the purchase date. The percent of sample years with a block is the total of all blocks within an industry group divided by the total number of firm-years of experience within that industry in the sample.

Industry Description	SIC Codes	Activist Blocks (N = 151)	Financial Blocks (N = 61)	Strategic Blocks (N = 32)	Percent of Sample Years with a Block
Crops	1	2	1	1	6%
Natural resource extraction	10, 12, 13, 14	7	1	2	7%
Food products	20	7	4	3	3%
Tobacco	21	2	0	1	8%
Apparel and textile mill products	22, 23	10	1	4	10%
Prefab buildings	24	1	1	0	7%
Furniture and fixtures	25	2	1	1	6%
Paper and allied products	26	9	3	2	3%
Printing and publishing	27	4	1	0	3%
Chemicals and allied products	28	12	3	1	3%
Petroleum and coal products	29	13	2	1	6%
Rubber and plastics	30	4	1	0	6%
Leather and footwear	31	1	1	0	13%
Stone, clay, and glass products	32	6	3	1	2%
Primary products and metals	33, 34	15	4	4	4%
Industrial machinery	35	16	11	6	4%
Electronic/electric equipment	36	8	6	1	4%
Transportation equipment	37	13	10	3	4%
Instruments and related products	38	3	4	1	2%
Miscellaneous manufacturing	39	2	0	0	4%
Railroad transportation	40	0	0	0	0%
Trucking and warehousing	42	0	0	0	0%
Miscellaneous transport	47	1	0	0	10%
Communications	48	1	2	0	6%
Utilities and waste management	49	0	0	0	0%
Wholesale	50, 51	6	0	0	6%
Retail	52-59	1	1	0	3%
Services	60-87	5	0	0	4%

purchase group and the other groups using a two-tailed Wilcoxon rank-sum test.

The table indicates that large shareholders, regardless of type, bought blocks in firms with below average profitability. Profitability, measured as return on assets (ROA), was 15.5 percent at the median for firms that did

Table III
Fraction of Firms in Sample Disappearing within Two Years
of a Block Purchase, 1980–1989

The table shows the fraction of firms in the sample that disappeared within two years of a block purchase and the reason for the disappearance. The sample consists of 425 firms in the 1980 *Fortune* 500 group of firms. Bankrupt denotes firms that filed Chapter 11 bankruptcy proceedings. LBO denotes firms that experienced a leveraged buyout. Takeover denotes a firm that was taken over by another firm with the result that it was delisted from the stock exchanges. Block share purchases are identified when a shareholder bought at least 5 percent of a firm’s outstanding common stock. The sample includes firms that had not experienced a block purchase of a similar type in the three years prior to the purchase date.

	None (N = 279)	Bankrupt (N = 10)	LBO (N = 39)	Takeover (N = 97)
No block	93%	0.5%	2%	5%
Any block	75%	2%	11%	12%
Activist block	76%	1%	9%	14%
Financial block	87%	2%	6%	6%
Strategic block	87%	3%	6%	3%

not experience a block purchase, whereas it was 12.6 percent in firms that experienced an activist block share purchase.⁹ This represents an absolute difference in performance of 2.9 percentage points. Financial blockholders targeted firms with a median ROA of 13.1 percent, and strategic blockholders targeted firms with a median ROA of 13.0 percent. As a group, firms that underperformed their counterparts in the *Fortune* 500 were most likely to experience a block share purchase.

Table IV also shows that the median market-to-book ratio was lower in firms that experienced activist block share purchases than in those that did not.¹⁰ The median market-to-book ratio of firms targeted in an activist block share purchase was 0.69, significantly below the ratio in firm-years where a block purchase did not take place. The median market-to-book ratio for firms that were targeted by financial blockholders was 0.75, which was not statistically distinguishable from the median for firms that did not experience a block share purchase. Firms that experienced strategic block share purchases also had statistically significantly lower market-to-book ratios than other firms. In part, this reflects the clustering of these purchases in the early years of our sample, before the market boom of the 1980s.

⁹ ROA is measured as operating earnings before interest, taxes, depreciation, and amortization (COMPUSTAT annual item 13) divided by net assets (COMPUSTAT item 6).

¹⁰ The market-to-book ratio is defined as the sum of long-term and short-term debt and the product of shares outstanding and share price prior to the block purchase divided by the book value of assets.

In addition, Table IV shows that firms targeted by activist investors were significantly more diversified (Herfindahl ratio = 0.36 percent) than firms in which no investor purchased a block (Herfindahl ratio = 0.39 percent). This finding is consistent with activist investors preferentially targeting firms where their comparative advantage as owners is highest. Firms that experienced financial block share purchases were more focused (Herfindahl ratio = 0.51 percent) than other firms.

With regard to defensive mechanisms, Table IV shows few differences in the frequency of dual-class share structures, shark repellants, ESOPs, or state antitakeover laws between firms that did and did not experience activist and strategic block purchases. In each case, a dummy variable equaled one if the defensive mechanism was present (and zero otherwise). Financial block purchases, however, were more likely to occur in firms with dual-class share structures and ESOPs. It appears that financial blockholders in our sample were willing to buy into firms whose ownership structures make takeovers difficult, a result that suggests financial blockholders do not influence firm policy by threatening a change in control.¹¹

A dummy for significant insider ownership, which includes the holdings of officers and directors, their family members, founders, founding families, and founding family trusts, equals one if insiders held 5 percent or more of a firm's outstanding shares (and zero otherwise).¹² Firms experiencing activist share purchases were less likely to have substantial insider ownership stakes than firms that were not targeted by blockholders. There are smaller and statistically insignificant differences for firms that were targets of strategic and financial blockholders. These findings are consistent with the view that large insider holdings shield firms from the market for partial corporate control.

Finally, firms targeted by activist investors tended to be smaller than firms that did not experience block share purchases. There are no statistically significant differences in size between firms that experienced financial or strategic block purchases and firms that were not targeted. Firm size appears to have deterred activist block purchases, possibly due to the high cost of assembling significant share blocks in large firms. This finding is consistent with Ambrose and Megginson (1992) and Comment and Schwert (1995), who show that takeovers are less frequent in large firms.

¹¹ In our sample, no firm in which a strategic block share purchase took place also had a dual-class share structure. This finding, which is not statistically significant, is probably due to the small number of firms with dual-class share structures in the sample. Two firms with dual-class stock experienced activist block share purchases, whereas seven firms with dual-class stock experienced financial block share purchases.

¹² In unreported analyses, we define dummies for insider ownership ranging from 5 percent to 50 percent to distinguish between levels of insider ownership that might motivate managers and those that might entrench managers, consistent with the findings of Morck et al. (1988) and McConnell and Servaes (1990). We do not find any differences in our results using different definitions of insider ownership.

Table IV
Comparison of Firms Experiencing Block Share Purchases to Other Firms

The table shows the distribution of variables for sample firms that did and did not experience block share purchases between 1980 and 1989, and the corresponding Wilcoxon test statistics for differences in distribution (comparing the no block group to each type of block purchase). The sample consists of 425 firms from the 1980 *Fortune* 500 group. Block share purchases are identified when a shareholder bought at least 5 percent of a firm's outstanding common stock. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. ROA equals earnings before interest, taxes, depreciation, and amortization divided by net assets. The market-to-book ratio equals the ratio of the market value of a firm's equity to the net book value of its physical assets. The Herfindahl ratio is a measure of focus of a firm's activities across business areas; it is the sum of the squared proportions of each four-digit line of business's share of total firm employees. The dual-class dummy equals one if a firm had dual-class stock at the time of block share purchase (and zero otherwise). The shark repellent dummy equals one if a firm had an antitakeover charter amendment, poison pill, or other type of shark repellent in place at the time of block share purchase (and zero otherwise). The ESOP dummy equals one if a firm had an ESOP at the time of block share purchase (and zero otherwise). The state antitakeover statute dummy equals one if a firm was incorporated in a state with a second-generation takeover amendment at the time of block share purchase (and zero otherwise). Insider ownership is the percentage of shares owned by a firm's officers, directors, founders, founding family members, or founding family trusts at the time of block share purchase.

	No New Blocks (N = 3585)	Activist Blocks (N = 151)	Financial Blocks (N = 61)	Strategic Blocks (N = 32)
Return on assets (%)				
Mean	15.6	13.0	12.7	12.7
25%	11.3	10.0	7.6	9.9
50%	15.5	12.6***	13.1***	13.0***
75%	20.0	16.0	16.4	14.5
Market-to-book ratio				
Mean	0.92	0.72	0.87	0.76
25%	0.62	0.54	0.63	0.46
50%	0.78	0.69***	0.75	0.59***
75%	1.08	0.81	0.98	0.77
Herfindahl measure of focus (%)				
Mean	0.44	0.39	0.49	0.49
25%	0.26	0.23	0.26	0.33
50%	0.39	0.36**	0.51*	0.46
75%	0.58	0.51	0.66	0.66
Dual-class dummy (%)				
Mean	2.28	1.97	4.8*	0.00
Shark repellent dummy (%)				
Mean	38.3	39.5	33.9	34.4
ESOP dummy (%)				
Mean	3.6	4.6	8.1***	6.3
State antitakeover statute dummy (%)				
Mean	3.9	8.6	6.5	0.0

Table IV—Continued

	No New Blocks (<i>N</i> = 3585)	Activist Blocks (<i>N</i> = 151)	Financial Blocks (<i>N</i> = 61)	Strategic Blocks (<i>N</i> = 32)
Dummy for 5 percent insider ownership (%)				
Mean	40.4	24.3***	33.9	28.0
Total assets (\$ million)				
Mean	3483	2247	1693	2354
25%	631	510	653	587
50%	1433	927***	1108	1035
75%	3113	2014	2091	1797

*Statistically different from no new block group at the 10 percent confidence level; **statistically significant at the 5 percent confidence level; ***statistically significant at the 1 percent confidence level.

D. Determinants of Block Purchases

We test our hypotheses concerning the determinants of block share purchases with pooled logistic regressions. The regressions use annual data for all variables except for the Herfindahl measure of focus (because the Trinet tapes were updated biannually). Tables V and VI show the results of logistic regressions predicting block purchase using measures of corporate performance, diversification, defensive measures, insider holdings, and firm size for the full sample of 425 *Fortune* 500 firms. Coefficient *p*-values are shown in parentheses and coefficient elasticities are shown in square brackets. Elasticities indicate the change in the likelihood of a block purchase with a shift from the 25th percentile of an independent variable to the 75th percentile relative to the likelihood when all other independent variables are at the sample mean. Industry performance for each firm's core 4-digit business is included as a control variable.

In Table V, ROA is used as a measure of financial performance; in Table VI market-to-book is used. The most important result of Table V is that block purchases were more likely to take place in firms with low profitability, regardless of whether blocks were purchased by activist, financial, or strategic investors. We see this first with activist investors, who were more likely to buy share blocks in firms with relatively low profitability (ROA coefficient = -6.27 , *p*-value < 1 percent). This result is consistent with previous theory and evidence that blockholders play an important role in disciplining managers in underperforming firms (Shleifer and Vishny (1986), Holderness and Sheehan (1985), Morck et al. (1989)). Activist investors were also more likely to target highly diversified firms (Herfindahl coefficient = -1.02 , *p*-value < 1 percent). This evidence is consistent with past evidence that diversification reduces firm value. For example, Comment and Jarrell (1995) find that refocusing increases firm value, and Lang and Stulz (1994) find a substantial discount in the market value of diversified firms during the 1980s.

Table V
Logistic Regressions Predicting Block Share Purchases
in Fortune 500 Firms from 1980 to 1989: ROA

The sample consists of 425 firms from the 1980 *Fortune* 500 list (3,804 firm-years of information are used in the regression). The dependent variable equals one when a shareholder bought at least 5 percent of the firm's outstanding common stock (and zero otherwise). Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. ROA equals earnings before interest, taxes, depreciation, and amortization divided by net assets (EBITDA/Net assets) at the beginning of the block purchase period. Industry ROA is the average EBITDA/Net assets of the firm's primary four-digit SIC code industry at the beginning of the block purchase period. The Herfindahl ratio is a measure of the focus of a firm's activities across business areas; it is the sum of the squared proportions of each two-digit line of business's share of total firm employees. The dual-class dummy equals one if a firm had dual-class stock at the time of block share purchase (and zero otherwise). The shark repellent dummy equals one if a firm had an antitakeover charter amendment, poison pill, or other type of shark repellent in place at the time of block share purchase (and zero otherwise). The ESOP dummy equals one if a firm had an ESOP at the time of block share purchase (and zero otherwise). The state antitakeover statute dummy equals one if a firm was incorporated in a state with a second-generation takeover amendment at the time of block share purchase (and zero otherwise). The high insider ownership dummy equals one if a firm's officers, directors, founders, founding family members, or founding family trusts held 5 percent or more of a firm's stock at the time of block share purchase (and zero otherwise). Firm size is measured as the log of net assets at book (\$ mil). Numbers in parentheses indicate the *p*-value of a chi-square test of whether a coefficient is different from zero. Numbers in brackets report the coefficient elasticity computed as the implied change in probability of a type of block purchase (relative to the unconditional probability of the block purchase type) resulting from a shift from the 25th percentile to the 75th percentile in the given independent variable (or vice versa for a negative coefficient) holding all other independent variables at their mean value for dummy variables. The elasticity is computed assuming a one unit change. — indicates that a coefficient was omitted because the variable was perfectly correlated with the incidence of shareholder block purchase activity.

	All Blocks	Activist Blocks	Financial Blocks	Strategic Blocks
Intercept	−0.98 (0.09)	−0.35 (0.55)	−1.66 (0.05)	−3.34 (0.01)
ROA	−5.96 [45.2%] (0.00)	−6.27 [42.4%] (0.00)	−4.91 [38.2%] (0.05)	−7.86 [46.7%] (0.02)
Industry ROA	4.62 [29.6%] (0.04)	3.71 [20.5%] (0.10)	0.53 [3.6%] (0.87)	5.56 [54.7%] (0.23)
Herfindahl ratio of focus	−0.90 [27.8%] (0.03)	−1.02 [31.4%] (0.01)	0.72 [22.2%] (0.09)	1.08 [33.6%] (0.16)
Dual-class dummy	−0.69 [49.6%] (0.35)	−0.08 [10.8%] (0.90)	0.92 [142%] (0.24)	—

Table V—Continued

	All Blocks	Activist Blocks	Financial Blocks	Strategic Blocks
Shark repellent dummy	0.32 [32.3%] (0.06)	0.25 [27.6%] (0.15)	-0.002 [0.3%] (0.61)	-0.022 [2.2%] (0.95)
ESOP dummy	0.82 [114%] (0.01)	0.39 [40.3%] (0.34)	1.00 [159%] (0.06)	0.69 [96.3%] (0.35)
State antitakeover statute dummy	0.42 [48.2%] (0.20)	0.45 [75.8%] (0.15)	0.17 [18.1%] (0.53)	—
High insider ownership dummy	-0.60 [55.1%] (0.00)	-0.79 [72.4%] (0.00)	-0.44 [41.9%] (0.18)	-0.62 [59.2%] (0.12)
Log(Net assets)	-0.22 [34.2%] (0.00)	-0.27 [41.7%] (0.00)	-0.28 [44.8%] (0.06)	-0.20 [32.2%] (0.18)
Log-likelihood (model <i>p</i> -value)	-630.2 (0.00)	-608.4 (0.00)	-327.4 (0.00)	-178.6 (0.09)
Pseudo- <i>R</i> ²	0.04	0.05	0.04	0.03

Financial investors were also more likely to buy blocks in firms with low ROA (coefficient = -4.91, *p*-value = 5 percent). Firm diversification, however, appears to have played an insignificant role in their purchase decisions. Similarly, firms were more likely to experience a strategic block share purchase if ROA was low (coefficient = -7.86, *p*-value = 2 percent). However, the likelihood of purchase was not affected by firm diversification in a statistically significant way.

Table V provides no evidence that defensive mechanisms deterred block share purchases. Firms that experienced activist block purchases, if anything, were more likely to have antitakeover charter amendments and be in states with antitakeover laws, a result that is consistent with Ambrose and Megginson's (1992) and Comment and Schwert's (1995) findings regarding takeovers. One interpretation of this result is that firms which anticipate block purchases adopt defensive mechanisms. Consistent with our earlier univariate results, firms that experienced financial block purchases were more likely to have dual-class share structures and ESOPs, although the difference for dual-class share structures is not statistically significant due to the rarity of this structure. This suggests that financial block purchases were unlikely to have been strongly motivated by control considerations. Note that the coefficients of the dual-class share structure dummy and the state antitakeover dummy are missing for strategic block purchases. These omissions are due to an insufficient number of cases where the dummy equaled one and a strategic block purchase took place.

Table VI
Logistic Regressions Predicting Block Share Purchases
in Fortune 500 Firms between 1980 and 1989: Market-to-Book

The sample consists of 425 firms from the 1980 *Fortune* 500 list (3,775 firm-years of information are used in the regression). The dependent variable equals one when a shareholder bought at least 5 percent of the firm's outstanding common stock (and zero otherwise). Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. The dummy for block purchase in previous period is a lagged dependent variable. The market-to-book ratio is the sum of the market value of the firm's equity and the book value of short and long term debt divided by the book value of net assets. Industry market-to-book is the average market-to-book in the firm's primary four-digit SIC code industry at the beginning of the block purchase period. The Herfindahl ratio is a measure of focus of a firm's activities across business areas; it is the sum of the squared proportions of each two-digit line of business's share of total firm employees. The dual-class dummy equals one if a firm had dual-class stock at the time of block share purchase (and zero otherwise). The shark repellent dummy equals one if a firm had an antitakeover charter amendment, poison pill, or other type of shark repellent in place at the time of block share purchase (and zero otherwise). The ESOP dummy equals one if a firm had an ESOP at the time of block share purchase (and zero otherwise). The state antitakeover statute dummy equals one if a firm was incorporated in a state with a second-generation takeover amendment at the time of block share purchase (and zero otherwise). The high insider ownership dummy equals one if a firm's officers, directors, founders, founding family members, or founding family trusts held 5 percent or more of a firm's stock at the time of block share purchase (and zero otherwise). Firm size is measured as the log of net assets at book (\$ mil). Numbers in parentheses indicate the *p*-value of a chi-square test of whether a coefficient is different from zero. Numbers in brackets report the coefficient elasticity computed as the implied change in probability of a type of block purchase (relative to the unconditional probability of the block purchase type) resulting from a shift from the 25th percentile to the 75th percentile in the given independent variable (or vice versa for a negative coefficient) holding all other independent variables at their mean value for dummy variables. The elasticity is computed assuming a one unit change for dummy variables. — indicates that a coefficient was omitted because the variable was perfectly correlated with the incidence of shareholder block purchase activity.

	All Blocks	Activist Blocks	Financial Blocks	Strategic Blocks
Intercept	−0.30 (0.62)	0.42 (0.50)	−2.06 (0.02)	−2.59 (0.05)
Market-to-book	−1.76 [25.2%] (0.00)	−1.83 [25.2%] (0.00)	−0.51 [16.3%] (0.27)	−0.62 [18.5%] (0.45)
Industry market-to-book	0.90 [54.3%] (0.02)	0.69 [36.0%] (0.08)	0.54 [29.5%] (0.30)	−0.47 [12.8%] (0.62)
Herfindahl ratio of focus	−0.86 [26.0%] (0.03)	−0.99 [29.6%] (0.02)	0.65 [20.1%] (0.23)	1.03 [31.6%] (0.19)
Dual-class dummy	−0.83 [56.5%] (0.27)	−0.27 [22.7%] (0.66)	0.85 [127%] (0.14)	—

Table VI—Continued

	All Blocks	Activist Blocks	Financial Blocks	Strategic Blocks
Shark repellent dummy	0.41 [40.7%] (0.02)	0.39 [37.4%] (0.03)	-0.010 [1.0%] (0.97)	0.053 [5.2%] (0.89)
ESOP dummy	0.80 [104.7%] (0.02)	0.33 [35.4%] (0.41)	1.04 [169%] (0.02)	0.63 [83.1%] (0.40)
State antitakeover statute dummy	0.34 [36.2%] (0.30)	0.52 [58.8%] (0.08)	0.21 [23.2%] (0.69)	—
High insider ownership dummy	-0.55 [49.3%] (0.00)	-0.75 [66.2%] (0.00)	-0.49 [46.7%] (0.07)	-0.60 [56.6%] (0.14)
Log(Net assets)	-0.26 [38.0%] (0.00)	-0.31 [45.5%] (0.00)	-0.31 [48.9%] (0.00)	-0.22 [34.7%] (0.16)
Log-likelihood (model <i>p</i> -value)	-620.8 (0.00)	-612.0 (0.00)	-330.2 (0.00)	-179.0 (0.14)
Pseudo- R^2	0.05	0.06	0.03	0.03

The coefficient of the insider dummy for activist blocks in Table V is negative and statistically significant, suggesting that insider ownership deters block share purchases. This is consistent with the argument that entrenched insiders deter changes in partial corporate control, as well as complete changes in corporate control, as suggested by Dann and DeAngelo (1988), Stulz (1988), and Denis (1990). An alternative argument would be that firms with high insider ownership are better run and thus less likely to experience a purchase of a significant stake by an activist outsider. The coefficients of the log of net assets are also negative and statistically significant for both activist and financial block purchases.

Table VI, which measures performance using market-to-book ratios instead of ROAs, reports logit regression results similar to those in Table V. These results show that activist investors were more likely to buy blocks in low market-to-book firms (coefficient = -1.83, *p*-value < 1 percent) and diversified firms (coefficient = -0.99, *p*-value = 2 percent). The elasticities of both coefficients indicate that these effects are economically important. Unlike the results in Table V, however, financial and strategic block purchasers did not preferentially target firms with low market-to-book ratios. This evidence suggests that activists, and to some extent, financial and strategic blockholders, buy into firms with poor financial performance.

IV. The Effects of Block Share Purchases on Operations and CEO Turnover

A. Operational Changes

In Section II we hypothesize that buyers of large blocks of shares pressure firms to improve performance when the returns from doing so outweigh the costs. The results thus far are consistent with this hypothesis, insofar as block purchases were most likely to occur in poorly performing firms—firms that offered the greatest opportunities for value improvement. To more directly test this hypothesis, we now examine operational, financial, and governance changes that followed block purchases for additional evidence of the role of minority investors in addressing problems of underperformance.

Table VII reports the average frequencies of CEO turnover and change in corporate operations in the two years following block purchases. We then compare these frequencies to two benchmarks: the frequency of an event in the two years before a block share purchase and the frequency of an event in all two-year periods where block purchases did not take place.¹³

Among firms experiencing activist block share purchases, the rate of divestiture and share repurchase was substantially higher than before purchase and higher than for firms that were not targeted at all. Specifically, managers of firms that were targeted by activist block purchases were much more likely to divest assets in the two years after block purchase than before. The frequency of divestitures rose from 45.5 percent before purchase to 65.2 percent after purchase. Moreover, activist block purchase target firms experienced a statistically significant fall-off in the frequency of mergers and acquisitions.

No block purchase type was systematically associated with a statistically significant increase in the rate of employee layoffs. On the other hand, CEO turnover increased among firms experiencing activist block purchase from 10.7 percent in the two years before block purchase to 22.3 percent in the two years after block purchase, consistent with the findings of Holderness and Sheehan (1985) and Barclay and Holderness (1991). The 22.3 percent CEO turnover rate after activist block share purchases was also higher than the 15.5 percent rate observed in firm-periods where no block purchase took place. Changes for firms experiencing other types of block share purchases were generally in the same direction, but were not statistically significant. Overall, this evidence suggests that activist blockholders use their voting power to influence operational decisions and governance.

B. Profitability Changes

One remaining question is whether these operational and governance changes were accompanied by improvements in firm performance. To address this issue we investigate the firm's operating performance following

¹³ Information for this table is collected from the *New York Times* and the *Wall Street Journal*. The two-year before and after periods are dated from the first reported block share purchase.

Table VII
Changes in Operations after Block Share Purchases
in *Fortune* 500 Firms

This table compares changes in operations and corporate governance in the two years before block share purchase to changes in the two years after block share purchase. The table also compares changes in operations and corporate governance in the two years after block share purchase to two-year periods that did not experience a block share purchase. The sample includes firms that survived as independent entities for the two years following block share purchase. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. A Wilcoxon signed-rank test is used to measure whether there is a statistically significant change before and after block purchase. A Kruskal-Wallis test is used to measure whether the incidence of an event differs across types of block purchases. Measures of change are based on reports in the *New York Times* and the *Wall Street Journal*.

	Activist Blocks (<i>N</i> = 112)	Financial Blocks (<i>N</i> = 54)	Strategic Blocks (<i>N</i> = 27)	Kruskal-Wallis <i>p</i> -value
Corporate divestiture/spinoff				
Frequency (periods without blocks)	40.2%			
Frequency before	45.5%	42.6%	51.9%	0.75
Frequency after	65.2%	55.6%	66.7%	0.40
<i>p</i> -value (before v. after)	0.001	0.11	0.21	
<i>p</i> -value (after v. years with no block)	0.001	0.45	0.12	
Corporate merger/acquisition				
Frequency (periods without blocks)	46.8%			
Frequency before	50.9%	42.6%	59.3%	0.14
Frequency after	34.8%	38.9%	55.5%	0.30
<i>p</i> -value (before v. after)	0.01	0.68	0.76	
<i>p</i> -value (after v. years with no block)	0.001	0.007	0.44	
Share repurchase program				
Frequency (periods without blocks)	17.5%			
Frequency before	13.4%	11.1%	14.8%	0.96
Frequency after	33.3%	11.1%	18.5%	0.07
<i>p</i> -value (before v. after)	0.001	1.00	0.71	
<i>p</i> -value (after v. years with no block)	0.001	0.001	0.21	
Employee layoffs				
Frequency (periods without blocks)	21.4%			
Frequency before	25.9%	20.4%	44.4%	0.21
Frequency after	23.2%	20.4%	48.1%	0.10
<i>p</i> -value (before v. after)	0.60	1.00	0.71	
<i>p</i> -value (after v. years with no block)	0.001	0.11	0.21	
CEO change				
Frequency (periods without blocks)	15.5%			
Frequency before	10.7%	18.5%	29.6%	0.30
Frequency after	22.3%	13.0%	22.2%	0.62
<i>p</i> -value (before v. after)	0.03	0.47	0.56	
<i>p</i> -value (after v. years with no block)	0.001	0.11	0.21	

block purchases. Panel A of Table VIII documents mean operating performance, measured as ROA, in the fiscal years preceding and following block purchases. ROA in year zero is earnings before interest, taxes, depreciation, and amortization (EBITDA) divided by assets in the fiscal year in which the initial announcement of a block purchase takes place. For firms that did not experience a block purchase, ROA declined from 15.5 percent to 14.3 percent over the period. This reflects a secular decline in profitability of firms on the Compustat tape during the 1980s.

Firms experiencing activist block purchases experienced declines in ROA before purchase, but there was a notable upward trend in years two and three after purchase. Panel B of Table VIII shows that these improvements were statistically significant both before and after adjusting for industry profitability. This evidence is consistent with the view that activist block shareholders catalyze real and lasting changes in company performance.¹⁴ These performance improvements, however, take some time to be realized.

In addition, we report operating performance changes using the year before a block purchase (year -1) as the base year, rather than the year of purchase. Note that the observed profitability improvements are smaller when the prior year is used as a benchmark. While still statistically significant by the third year after activist block share purchase, the sensitivity of the results to the benchmark year gives cause for caution in interpreting the results in Table VIII.

We note as well that there is a modest improvement in firm performance following financial block purchases.¹⁵ This can be interpreted in several ways. One, noted earlier, is that financial investors need not be passive. These investors may bring change through the use of “quiet diplomacy.” Two, financial investors may just be good investors. That is, these investors may be

¹⁴ This result should be interpreted with some caution because it is based on a sample of survivors. In particular, the performance of firms that drop out of the sample within one year of a block purchase is somewhat below that of survivors. However, the result that operating performance increases after an activist purchase does not change appreciably when we include these dropout firms (extrapolating their future operating performance based on performance up until the point they dropped out). We also estimate change in operating profitability after activist block purchases using OLS regressions with a dummy for activist block purchase years (for change in ROA from years 0 to $+2$ and for years 0 to $+4$ before and after industry adjustment). In each case the dummy has statistical significance similar to that shown in Table VIII. This finding does not change when we added the inverse Mills ratio to correct for survival bias based on a first stage probit predicting survival with a variety of characteristics including leverage, defenses, and profitability (see Heckman (1979)). It appears unlikely that our results on operating performance are driven by survival bias.

¹⁵ Although we are able to reject the hypothesis that mean change in ROA following activist and financial block purchases is zero, it is important to also emphasize that we cannot reject the hypothesis that performance across block purchase subgroups is the same. For example, we run a Kruskal–Wallis test of whether there is a difference in the mean ROA improvement across blockholder groups for change for years 0 to $+3$. We obtain a p -value of 0.64. This failure to reject is partly a power issue given that there are relatively few strategic and financial blocks in the sample. Even if the failure to reject is not a power issue, the results would still be consistent with the view that the market for partial corporate control creates shareholder value.

Table VIII
Changes in Profitability after Block Share Purchases
in *Fortune* 500 Firms between 1980 and 1989

This table reports changes in firm profitability following purchases of share blocks of 5 percent or more. To be included, a firm could not have experienced a block purchase of the same type in the preceding three years. In addition, operating performance data were required in the three years following a block share purchase. Year 0 is the year in which a block purchase took place. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. Changes in operating profitability are simple first differences. ROA is defined as earnings before interests, taxes, depreciation, and amortization divided by net assets (EBITDA/assets).

	No New Block	Activist Block	Financial Block	Strategic Block
Panel A: Mean ROA				
Year -1	15.5%	12.6%	12.9%	13.2%
Year 0	15.1%	11.7%	12.3%	11.9%
Year +1	14.8%	11.7%	12.4%	11.6%
Year +2	14.4%	12.3%	13.1%	11.4%
Year +3	14.3%	13.0%	12.9%	13.3%
Number of observations				
Years -1 to +2	3,542	147	59	32
Year +3	3,578	144	52	31
Panel B: Mean Change in ROA Relative to Fiscal Year of Block Purchase				
Change (0, +1)				
Raw	-0.3%	-0.2%	-0.1%	-0.3%
Industry-adjusted	0.0%	0.4%	0.1%	0.1%
Change (0, +2)				
Raw	-0.2%	0.6%	1.0%	-0.7%
Industry-adjusted	0.0%	1.1%**	0.5%	1.0%
Change (0, +3)				
Raw	-0.9%	1.5%**	1.4%	0.7%
Industry-adjusted	0.0%	1.9%***	1.0%*	0.9%
Change (-1, +1)				
Raw	-0.8%	-1.7%	-0.9%*	-0.8%
Industry-adjusted	-0.1%	0.0%	0.0%	0.0%
Change (-1, +2)				
Raw	-1.2%	0.0%	0.3%	-1.2%
Industry-adjusted	-0.2%	0.7%	0.8%*	0.6%
Change (-1, +3)				
Raw	-1.4%	0.3%	0.6%	0.3%
Industry-adjusted	-0.3%	1.1%**	1.1%*	0.5%

*Statistically different from zero using a *t*-test at the 10 percent confidence level; **statistically significant at the 5 percent confidence level; ***statistically significant at the 1 percent confidence level.

Table IX
Changes in Share Price after Block Share Purchases
in Fortune 500 Firms between 1980 and 1989

This table reports changes in share prices following purchases of share blocks of 5 percent or more. To be included, a firm could not have experienced a block purchase of the same type over the past three years. In addition, operating performance data were required in the three years following the block share purchase. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Financial block share purchases are those made by banks, pension funds, money managers, and passive individual investors. Strategic block share purchases are those made by other companies that were unopposed by management. Mean cumulative abnormal returns (CARs) are computed using a market model. Day 0 is the announcement date of a block purchase or, in some unannounced cases, the date that a block purchase was first revealed in an SEC filing.

	Activist Block	Financial Block	Strategic Block
CAR (−30, +5 days)	15.7%***	0.8%	−2.6%
CAR (−30, +30 days)	14.2%***	0.4%	−0.1%
Number of observations	146	59	31

*Statistically different from zero using a *t*-test at the 10 percent confidence level; **statistically significant at the 5 percent confidence level; ***statistically significant at the 1 percent confidence level.

able to identify unrecognized turnaround candidates or firms that are willing and able to self-restructure.¹⁶ Three, financial investors may preferentially invest in firms with high expected ROA growth.

C. Share Price Change

Table IX reports average share price reactions around block share purchase announcements. On average, activist block share purchases were accompanied by increases in share price. The cumulative abnormal return (CAR) for the median firm experiencing an activist block share purchase for the window (−30, +5 days) was 15.7 percent.¹⁷ The mean positive cumulative abnormal returns persist over a longer window of (−30, +30 days), as well. We also track CARs over much longer periods (up to 200 days), but find little additional postannouncement drift. These share price improvements are similar in magnitude to those observed by Barclay and Holderness (1991) after

¹⁶ We also examine share price performance over a 200-day post purchase window for firms experiencing financial block purchases. The average market-adjusted return is slightly negative, giving little evidence of superior stock selection ability among financial block purchasers.

¹⁷ CARs are computed using a standard market model, with beta estimated in a 200-day period prior to block share purchase. We explore a variety of risk adjustment methods (e.g., size and beta decile adjustment), but find that they do not materially affect the results reported here.

Table X
Changes in Performance after Block Share Purchases
Stratified by Balance Sheet Change

This table compares firm performance in the year prior to block share purchase to operating performance in the three-year period following a block share purchase and the cumulative abnormal return (CAR) over the 30 days before and after a block share purchase. The sample includes firms that survived as independent entities in the three years following a block share purchase. Year 0 is the year in which a block purchase took place. Activist block share purchases are those made with the announced intention of influencing firm policies or those made by individuals known for activist policies in the past. Changes in operating performance are first differences. ROA is defined as earnings before interest, taxes, depreciation, and amortization divided by net assets (EBITDA/Assets). Cumulative abnormal returns (CARs) are computed using a market model. Day 0 is the announcement date of a block purchase, or, in some unannounced cases, the date that a block purchase was first revealed in an SEC filing. Debt/assets is measured as the book value of long-term and short-term debt divided by the book value of assets. Sample size is shown in parentheses. The table also reports a *p*-value of a *t*-test of whether the mean difference in firm performance between groups (e.g., divestiture or not) is the same.

	All Block Purchases		Activist Block Purchases Only	
	Change in ROA (0, +3)	CAR (−30, +30 days)	Change in ROA (0, +3)	CAR (−30, +30 days)
Did an asset divestiture take place two years after block purchase?				
Yes	2.4% (119)	6.7% (119)	2.7% (73)	13.5% (73)
No	−0.3% (73)	7.6% (73)	−0.4% (39)	9.1% (39)
<i>t</i> -test <i>p</i> -value	0.01	0.75	0.07	0.26
Did debt/assets rise by 5% or more in the year after block purchase?				
Yes	2.3% (67)	11.2% (67)	2.3% (48)	12.4% (48)
No	0.9% (125)	7.8% (125)	1.0% (64)	16.5% (64)
<i>t</i> -test <i>p</i> -value	0.19	0.21	0.33	0.24

106 negotiated block trades. There is no evidence of a significant positive average market reaction to announcements of either financial or strategic block purchases.

D. Determinants of Performance Improvements

Table X provides additional insight into the sources of operating and share price changes following block share purchases. The table stratifies the sample by whether a block purchase was followed by an asset divestiture or a substantial increase in financial leverage. We would expect greater operating improvements after a divestiture on the grounds that asset sales indicate a commitment of incumbent management to change operating policies in response to shareholder pressure (Butz (1994)). Similarly, we would ex-

pect greater operating improvements after an increase in leverage based on Jensen's (1988) free cash flow argument that debt bonds incumbent management to pay out excess cash rather than waste it on unprofitable internal projects. The results indicate that ROA improved by 2.7 percentage points in the three years following an activist block purchase that resulted in a divestiture. In addition, ROA increased by 2.3 percentage points in the three years after an activist block purchase that was followed by at least a 5 percent increase in the total debt to assets ratio. However, this improvement is not statistically distinguishable from that in cases where firms did not substantially increase debt. It should also be noted that similar improvements are not observed in share price in the 30 days after block share purchases; this could reflect the timing of leverage increases and divestitures relative to a short event study window. Indeed, a related study by Safieddine and Titman (1996) finds that targets of failed takeover attempts that increase financial leverage experience share price improvements well in excess of the market, but over a five-year period.

The disproportionate improvement in profitability following activist share purchases that were accompanied by divestitures is consistent with the argument that activist investors catalyze real, value enhancing changes in corporate policies. On the other hand, performance improvements may be the result of eliminating marginally profitable assets: divestiture of low-ROA businesses will inevitably increase ROA. To investigate this possibility, we examine the quantity of assets divested by firms that both experienced activist block share purchases and divested assets (as classified before).¹⁸ If performance improvements of the magnitudes discussed were due to this effect, firms would have had to divest relatively high amounts of assets. Somewhat surprisingly, the ratio of divested to total assets was 1.8 percent for firms that announced post-block purchase divestitures. It seems implausible that such a small volume of divestitures could account for the large profitability improvements discussed earlier. Moreover, when we split the subsample of divesters into high divestiture and low divestiture subgroups, we do not find differences in profitability improvements between them.¹⁹

V. Discussion and Conclusion

This study documents the relationship between purchases of large share blocks and corporate performance. Our results are largely consistent with the view that the market for partial corporate control identifies and rectifies

¹⁸ Assets divestitures are obtained from annual reports. The divestiture/assets ratio is defined as the volume of assets divested for cash over the book value of assets. Divestitures are measured over a two-year period with the first year encompassing the date of the block share purchase.

¹⁹ Specifically, the subgroup of 35 firms with a divestiture/assets ratio less than 3 percent experienced a mean two-year improvement in ROA of 1.6 percentage points. In contrast, the 10 firms with a divestiture/assets ratio above 3 percent experienced a zero mean change in profitability.

problems of poor corporate performance. Specifically, we find that activist investors typically target poorly performing, diversified firms. Block share purchases by activists are followed by increases in divestitures and share repurchases and by declines in mergers and acquisitions. Furthermore, activist block share purchases are associated with improvements in profitability and shareholder value.

We find that financial and strategic investors also target underperforming firms, but do not systematically target highly diversified firms. In contrast to firms that experience activist block share purchases, firms targeted by financial and strategic investors do not undergo extensive operational changes and experience smaller *ex post* improvements in profitability. These findings suggest that although financial and strategic investors target firms where performance improvements are possible, performance is less likely to improve.

The 1980s saw firms increasingly seek protection from takeovers by adopting defenses such as ESOPs, poison pills, antitakeover charter amendments, and reincorporation in states with stringent antitakeover laws. Our results do not support the view that these defenses were effective in deterring block share purchases. This finding buttresses previous evidence that defensive mechanisms have little effect on the likelihood of takeover. We do note, however, that firms with high inside ownership were less likely to experience block share purchases during the sample period. Insider ownership can be viewed as either a deterrent to outside share ownership, or alternatively, a substitute for it.

The 1990s have seen investor activism primarily carried out by proxy contest and by direct contact with management, rather than by hostile takeover. An important question is whether such activism can influence corporate policies and improve performance. Our results indicate that activist investors were able to influence firm policies during the 1980s, even though takeovers typically did not subsequently take place in targeted firms. This suggests that the market for partial corporate control can play an important role in reducing the agency costs that result from the separation of ownership and control in U.S. corporations.

Nonetheless, our results should be interpreted with some caution. For one, it is possible that the improvements observed following activist block share purchases were not the consequence of activism, but rather were simply anticipated by intuitive and knowledgeable investors. It would, however, be difficult to explain the time pattern of earnings improvements using the "prescient investor" story. If blockholders invest based on superior information, we would expect rapid performance improvements. In our sample, however, the greatest profitability improvements are observed two and three years after block purchases. In addition, the real changes noted after activist block purchases (e.g., divestitures, share repurchases, and CEO replacement) would normally be difficult to anticipate, even for expert investors. These changes are very easy to explain, however, with a story that investors themselves catalyze change in target firms.

A second reason to interpret our results with caution is that the greatest profitability improvements occurred in firms that divested assets after block purchases. We cannot rule out the possibility that profitability improvements were compositional, due to divestitures of poorly performing assets rather than improvements in overall efficiency. However, the volume of post-purchase asset divestitures appears to be too small to explain the magnitude of the observed improvements. Moreover, share prices rose after activist share purchases, irrespective of whether divestitures followed. Future researchers might explore this question more extensively, particularly by investigating performance across business segments (e.g., Shin and Stulz (1996)).

Finally, we do not know if our results are unique to the 1980s. It may be that the effectiveness of blockholder activism during this period was atypical. It would be interesting to investigate the relationship between blockholder activity and corporate performance during other time periods and in other countries. We would also note that our groupings of block purchases (activist, financial, and strategic) might mask important within-group differences. Inspection of the sample shows great diversity of investor experience and approach within these categories, and anecdotal evidence suggests that some investors consistently do well while others have mixed results. Another unanswered question is whether the effectiveness of minority shareholder activism depends on the size and number of share blocks outstanding. Zwiebel (1990) argues that noncontrolling blockholders exert control through coalitions. It is possible that firms that experience a cluster of block purchases, for example, react differently than firms that experience only one block purchase. Finally, a question remains as to whether the duration of a block position matters. In Butz (1994), for example, a blockholder can obtain a rapid wealth improvement by forcing a divestiture and leaving. In contrast, Demsetz and Lehn (1985) portray blockholders as long-term owners who create value by ongoing monitoring over a period of years. We encourage others to examine these questions in future research efforts.

REFERENCES

- Ambrose, Brent W., and William L. Megginson, 1992, The role of asset structure, ownership structure, and takeover defenses in determining acquisition likelihood, *Journal of Financial and Quantitative Analysis* 27, 575–589.
- Amihud, Yakov, and Baruch Lev, 1981, Risk reduction as a managerial motive for conglomerate mergers, *Bell Journal of Economics* 12, 605–617.
- Barclay, Michael J., and Clifford G. Holderness, 1991, Negotiated block trades and corporate control, *Journal of Finance* 46, 861–878.
- Bhagat, Sanjai, Andrei Shleifer, and Robert Vishny, 1990, Hostile takeovers in the 1980s: The return to corporate specialization, *Brookings Papers: Microeconomics*, 1–84.
- Bhide, Amar, 1990, Reversing corporate diversification, *Journal of Applied Corporate Finance* 3, 70–81.
- Brickley, James A., Ronald C. Lease, and Clifford W. Smith Jr., 1988, Ownership structure and voting on antitakeover amendments, *Journal of Financial Economics* 20, 267–291.
- Butz, David A., 1994, How do large minority shareholders wield control?, *Management and Decision Economics* 15, 291–298.

- Chandler, Alfred D., 1990, *Scale and Scope: The Dynamics of Industrial Policy* (Belknap Press, Cambridge, MA).
- Chang, Saeyung and David Mayers, 1992, Management vote ownership and shareholder wealth: Evidence from employee stock ownership plans, *Journal of Financial Economics* 32, 103–131.
- Comment, Robert, and Gregg Jarrell, 1995, Corporate focus and stock returns, *Journal of Financial Economics* 37, 67–88.
- Comment, Robert, and G. William Schwert, 1995, Poison or placebo? Evidence on the deterrent and wealth effects of modern anti-takeover measures, *Journal of Financial Economics* 39, 3–43.
- Dann, Larry Y., and Harry DeAngelo, 1988, Corporate financial policy and corporate control: A study of defensive mechanisms in asset and ownership structure, *Journal of Financial Economics* 20, 87–127.
- Demsetz, Harold, and Kenneth Lehn, 1985, The structure of corporate ownership: Causes and consequences, *Journal of Political Economy* 93, 1155–1177.
- Denis, David J., 1990, Defensive changes in corporate payout policy: Share repurchases and special dividends, *Journal of Finance* 45, 1433–1456.
- Denis, David J., Diane Denis, and Atulya Sarin, 1997, Agency problems, equity ownership and corporate diversification, *Journal of Finance* 52, 135–160.
- Gordon, Lilli A., and John Pound, 1990, ESOPs and corporate control, *Journal of Financial Economics* 27, 525–555.
- Heckman, James, 1979, Sample selection bias as a specification error, *Econometrica* 47, 153–161.
- Holderness, Clifford G., and Dennis P. Sheehan, 1985, Raiders or saviors? The evidence on six controversial investors, *Journal of Financial Economics* 14, 555–579.
- Jarrell, Gregg A., and Annette B. Poulsen, 1987, Shark repellents and stock prices: The effects of anti-takeover charter amendments since 1980, *Journal of Financial Economics* 19, 127–168.
- Jarrell, Gregg A., and Annette B. Poulsen, 1988, Dual-class recapitalizations as anti-takeover mechanisms: The recent evidence, *Journal of Financial Economics* 20, 129–152.
- Jensen, Michael C., 1988, The takeover controversy: Analysis and evidence, in John Coffee, Louis Lowenstein, and Susan Rose-Ackerman, eds.: *Takeovers and Contest for Corporate Control* (Oxford University Press, New York).
- Kaplan, Steven N., 1989, The effects of management buyouts on operating performance and value, *Journal of Financial Economics* 24, 217–254.
- Kaplan, Steven N., and Jeremy C. Stein, 1993, The evolution of buyout pricing and financial structure in the 1980s, *Quarterly Journal of Economics*, 313–357.
- Karpoff, J. M., and Paul H. Malatesta, 1989, The wealth effects of second generation state takeover legislation, *Journal of Financial Economics* 25, 291–322.
- Lang, Larry, and René Stulz, 1994, Tobin's q, corporate diversification and firm performance, *Journal of Political Economy* 102, 1248–1280.
- Malatesta, Paul H., and Ralph A. Walkling, 1988, Poison pill securities: Stockholder wealth, profitability, and ownership structure, *Journal of Financial Economics* 20, 347–376.
- Manne, Henry G., 1965, Mergers and the market for corporate control, *Journal of Political Economy* 73, 110–120.
- McConnell, John J., and Henri Servaes, 1990, Additional evidence on equity ownership and corporate value, *Journal of Financial Economics* 27, 595–612.
- Mikkelsen, Wayne, and M. Megan Partch, 1994, The consequences of unbundling managers' voting rights and equity claims, *Journal of Corporate Finance* 1, 175–199.
- Mikkelsen, Wayne, and Richard S. Ruback, 1985, An empirical analysis of the interfirm equity investment process, *Journal of Financial Economics* 14, 523–553.
- Morck, Randall, Andrei Shleifer, and Robert Vishny, 1988, Management ownership and market valuation: An empirical analysis, *Journal of Financial Economics* 20, 293–315.
- Morck, Randall, Andrei Shleifer, and Robert Vishny, 1989, Alternative mechanisms for corporate control, *American Economic Review* 79, 842–852.

- Morck, Randall, Andrei Shleifer, and Robert Vishny, 1990, Do managerial objectives drive bad acquisitions?, *Journal of Finance* 45, 31–48.
- Muscarella, Chris, and Michel Vetsuypens, 1990, Efficiency and organizational structure: A study of reverse LBOs, *Journal of Finance* 45, 1389–1414.
- Partch, M. Megan, 1987, The creation of a class of limited voting common stock and shareholder wealth, *Journal of Financial Economics* 18, 313–339.
- Ruback, Richard S., 1988, Coercive dual-class exchange offers, *Journal of Financial Economics* 20, 153–173.
- Ryngaert, Michael, 1988, The effect of poison pill securities on shareholder wealth, *Journal of Financial Economics* 20, 377–417.
- Safieddine, Assem, and Sheridan Titman, 1996, The effect of debt on corporate performance: Evidence from unsuccessful takeovers, Working paper, Michigan State University.
- Shin, Hyun-han, and René M. Stulz, 1996, An analysis of the divisional investment policies of diversified firms, Working paper, Ohio State University.
- Shleifer, Andrei, and Robert Vishny, 1986, Large shareholders and corporate control, *Journal of Political Economy* 94, 461–488.
- Shome, Dilip K., and Sudhir Singh, 1995, Firm value and external blockholdings, *Financial Management Journal* 24, 3–14.
- Slovin, Myron B., and Marie E. Sushka, 1993, Ownership concentration, corporate control activity, and firm value: Evidence from the death of inside blockholders, *Journal of Finance* 48, 1293–1321.
- Stulz, René, 1988, Managerial control of voting rights: Financing policies and the market for corporate control, *Journal of Financial Economics* 20, 25–54.
- Szewczyk, Samuel, and George T. Tsetsekos, 1992, State intervention in the market for corporate control: The case of Pennsylvania Senate Bill 1310, *Journal of Financial Economics* 31, 1–23.
- Zwiebel, Jeffrey, 1990, Block investment and partial benefits of corporate control, Working paper, Massachusetts Institute of Technology.

Copyright of Journal of Finance is the property of Blackwell Publishing Limited and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.