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Antitakeover provisions in corporate spin-offs

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ABSTRACT

We analyze the relation between antitakeover provisions (ATPs) and the performance of spin-off firms. We find that firms protected by more ATPs before spin-offs have higher abnormal announcement returns and greater improvements in post-spin-off operating performance than firms with fewer ATPs. Further, firms that reduce the number of ATPs after spin-offs have greater improvements in operating performance than firms that do not reduce the number of ATPs. Finally, CEOs of pre-spin-off firms tend to retain more ATPs in parent firms and assign fewer ATPs to the spun-off units if they remain as the CEOs of the parents but not the spun-off units. Overall, our results indicate a positive relation between ATPs and the value gains to spin-offs.

1. Introduction

Whether antitakeover provisions (ATPs) increase or decrease shareholder value is an open and much debated issue (Field and Karpoff, 2002; Core et al., 2006). A number of studies have analyzed why firms adopt ATPs in the context of various corporate events (Garvey and Hanka, 1999; Masulis et al., 2007; Harris and Glegg, 2009). The broad view emerging from these empirical analyses is that ATPs reduce shareholder value because they entrench managers by insulating them from the market for corporate control. However, other studies argue that firms can use ATPs to enhance shareholders' wealth for various reasons. First, ATPs can increase the bargaining power of the target firm and the takeover premium in a takeover battle (Comment and Schwert, 1995). Second, ATPs may enhance long-term firm value in the hands of high ability managers, since ATPs allow such managers to create value for the firm by investing in risky, long-term projects (Chemmanur and Jiao, 2005).

We shed new light on the use of ATPs by studying the role of ATPs in corporate spin-offs. The opposing views outlined above on the relation between ATPs and shareholder value have different predictions on the performance of spin-offs among firms with different numbers of ATPs. The "managerial entrenchment hypothesis" predicts that firms with more ATPs before spin-offs have higher abnormal returns around spin-off announcements than firms with fewer ATPs (**H1a**). More entrenched managers in high-ATP firms are less subject to the market for corporate control and therefore manage the firms less efficiently, so that the potential gains from spin-off may be greater. For example, Chemmanur and Yan (2004) argue that a spin-off increases the probability of the parent or the subsidiary becoming takeover targets.[1]

In contrast, the "shareholders' interest hypothesis" predicts no difference in abnormal returns around spin-off announcements between high-ATP and low-ATP firms (**H1b**). The shareholders' interest hypothesis argues that firms optimally choose ATPs based on their characteristics (growth opportunities, market valuation, etc.) to protect shareholder value instead of entrenching the management. Therefore, ATPs are not related to the inefficiency in the firm and gains from the spin-off, and we expect no difference in

[1] Because a spin-off would seem to be against the interests of an entrenched management, the natural question is why such managers would ever do one. One answer is that because of the growth in equity-based compensation, managers increasingly face a trade-off between the benefits from perquisite consumption and stock price gains. A second answer is that a firm's board may impose spin-offs on an incumbent management that is particularly inefficient at managing one or more divisions of the firm.

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abnormal returns around spin-off announcements between high-ATP and low-ATP firms.

The managerial entrenchment hypothesis predicts that high-ATP firms have poorer operating performance before spin-offs, and greater improvement in operating performance after spin-offs, compared to low-ATP firms (**H2a**). The poor operating performance before spin-offs in high-ATP firms is due to higher degrees of management entrenchment in these firms. Prior studies show that the operating performance improves after spin-offs (Ahn and Denis, 2004; Chemmanur and Nandy, 2006). Because there are more inefficiencies in high-ATP firms before spin-offs, we expect greater improvements in operating performance in high-ATP firms than in low-ATP firms. On the other hand, the shareholders' interest hypothesis does not view ATPs as a measure of management entrenchment and a source of inefficiency. Rather, firms optimally choose ATPs to increase their bargaining power in a takeover battle or to implement risky, long-term projects, and ATPs are not related to the firm's operating performance. Therefore, the shareholders' interest hypothesis predicts no difference in operating performance before spin-offs and no difference in the improvement in operating performance after spin-offs between high-ATP and low-ATP firms (**H2b**).

The two hypotheses also have different predictions about the change in the number of ATPs after spin-offs. According to the managerial entrenchment hypothesis, more ATPs lead to more inefficiencies in firms before spin-offs. Hence, value-maximizing firms tend to reduce the number of ATPs in high-ATP firms after spin-offs to remove the inefficiencies. Firms with fewer ATPs before spin-offs have less inefficiencies and are less likely to reduce their ATPs. That is, we expect a positive relation between the improvement in operating performance after spin-offs and the reduction in the number of ATPs. Therefore, the managerial entrenchment hypothesis predicts that high-ATP firms are more likely to reduce the number of ATPs than low-ATP firms after spin-offs, and the improvement in operating performance after spin-offs is positively related to the decrease in the number of ATPs (**H3a**). In contrast, the shareholders' interest hypothesis contends that ATPs are not a source of inefficiency, and the hypothesis predicts no change in the number of ATPs after spin-offs because the gains from spin-offs are not related to ATPs. The hypothesis also predicts no relation between the improvement in operating performance after spin-offs and the change in the number of ATPs. To summarize, the shareholders' interest hypothesis predicts no change in the number of ATPs after spin-offs and no relation between the improvement in operating performance and the change in the number of ATPs (**H3b**).

Finally, the two hypotheses have different implications on the number of ATPs of the post-spin-off parent and the spun-off unit. The managerial entrenchment hypothesis argues that managers use ATPs to entrench themselves and extract private benefits from shareholders. Therefore, if the CEO of the pre-spin-off firm continues to be the CEO of either the post-spin-off parent or the spun-off unit (but not both), he will assign more ATPs to the unit in which he remains as CEO and fewer ATPs to the other unit; we will not see such difference if he remains as the CEO of both the parent and the spun-off unit or neither. Therefore, the managerial entrenchment hypothesis predicts that the CEO of the pre-spin-off firm will assign more ATPs to the unit in which he remains as CEO, and fewer ATPs to the unit in which he will no longer be the CEO (**H4a**). In contrast, the shareholders' interest hypothesis argues that CEOs use ATPs to benefit shareholders, not to entrench themselves. Therefore, the numbers of ATPs assigned to the parent and the subsidiary after spin-offs are not related to whether the CEO continues to be the CEO of the parent or the spun-off unit. As a result, the shareholders' interest hypothesis predicts no relation between the difference in ATPs between the parent and spun-off unit and whether the CEO of the pre-spin-off firm continues to be the CEO of the parent or the spun-off unit (**H4b**).

We test the predictions of the two competing hypotheses using a sample of 139 spin-offs announced between 1990 and 2000. We find that firms with more ATPs have significantly higher abnormal returns around spin-off announcements. The average three-day abnormal return is 4.96% for firms with a large number of ATPs (the top one-third) and about 0% for firms with a small number of ATPs (the bottom one-third). High-ATP firms, on average, underperform firms in the same industry with similar size by 5.9% in operating performance as measured by operating cash flow returns in the two-year period before the spin-off. In contrast, low-ATP firms do not have abnormal operating performance before the spin-off. High-ATP firms also have greater improvement in operating performance after the spin-off than low-ATP firms. Our findings on announcement returns and operating performance support the managerial entrenchment hypothesis instead of the shareholders' interest hypothesis.

Our analyses also show that high-ATP firms tend to reduce the number of ATPs after spin-offs, whereas this is not the case for low-ATP firms. Further, we find a positive relation between the decrease in the number of ATPs and the improvement in operating performance after spin-offs. We also find that the CEO of the pre-spin-off firm puts more ATPs in the unit in which he continues to be the CEO after the spin-off. The evidence suggests that the CEOs may use ATPs to entrench themselves. Our findings on the number of ATPs in firms after spin-offs also support the managerial entrenchment hypothesis instead of the shareholders' interest hypothesis.

Like other studies in corporate finance, our analyses are complicated by the endogenous relation between corporate decisions and the control forces operating on the firm; see, for example, Wintoki et al. (2008) on the importance of controlling for endogeneity in the context of board structure and firm performance. In the context of spin-offs, ATPs *per se* may not cause entrenchment/inefficiency in the firm and drive the spin-off decision. Rather, certain firm and industry characteristics endogenously determine both whether a firm conducts a spin-off and how many ATPs a firm adopts. To address these concerns, we predict firms' ATP levels using management quality and firms' business environments (such as industry Tobin's Q, industry leverage, and industry free cash flows) or other corporate governance measures (production market competition, board characteristics). We still find a positive relation between unpredicted ATP levels and abnormal announcement returns and improvements in operating performance after spin-offs.[2]

We structure the rest of the paper as follows: We discuss the related literature and our contribution in Section 2. We describe the sample selection in Section 3 and the abnormal announcement return in Section 4. We analyze the relation between ATPs and operating performance in Section 5. In Section 6, we examine the change in ATPs around spin-offs. We address in Section 7 the endogeneity issue. Section 8 concludes.

2. Related literature and our contribution

Our study is related to several strands of literature. The first strand is the large body of work documenting that the stock market

[2] However, it is possible that we fail to capture all the factors that determine whether a firm conducts a spin-off and how many ATPs it adopts, and the relation between ATPs and spin-off performance could be spurious. Reverse causality is another possibility. Specifically, poor performance before spin-offs may prompt firms to increase their ATPs, and it is not the ATPs that cause the poor performance. In light of the above possibilities, one should be cautious in interpreting our results as evidence that ATPs cause poor firm performance. We thank an anonymous referee for pointing this out.

reacts positively to spin-off announcements (Schipper and Smith, 1983). The literature, however, provides mixed evidence on whether firms improve operating performance following the completion of spin-offs. Daley et al. (1997), Desai and Jain (1999), Ahn and Denis (2004), and Chemmanur and Nandy (2006) find that firms improve their operating efficiency after spin-offs. However, Colak and Whited (2007) find that the efficiency improvement after spin-offs and divestitures disappears after controlling for self-selection and measurement errors in efficiency.

The second strand of literature concerns the effects of ATPs on firm value. Gompers et al. (2003) find that firms protected by more ATPs have lower stock returns. Core et al. (2006) find that firms with more ATPs also have poorer operating performance than firms with fewer ATPs, though they question whether it is the higher number of ATPs that causes the lower stock returns. Masulis et al. (2007) find that firms with more ATPs have lower abnormal returns around acquisition announcements. Finally, short-term event studies of ATP adoptions or amendments document the market's negative perception of ATPs (see Bhagat and Romano, 2002, for a survey of this literature).

Our study contributes to the literature outlined here in several ways. First, to the best of our knowledge, we are the first to explore the relation between ATPs and the performance of corporate spin-offs, thereby shedding new light on the sources of the gains from these events. Second, our finding contributes to the debate on how ATPs affect shareholder value. Our evidence seems to be consistent with the notion that ATPs tend to entrench management and reduce shareholder value. Third, our results complement the findings in the literature that the abnormal returns around spin-off announcements are lower in countries where shareholder rights are better protected (Veld and Veld-Merkoulova, 2004). Our results are consistent with this international evidence, and add more empirical evidence to the literature on the relation between shareholder rights and firm value in the global market (Hagendorff et al., 2008; Morey et al., 2009).

3. Sample selection

We obtain our spin-off sample from Thomson Financial's Securities Data Corporation (SDC) Mergers and Acquisitions Database. We identify all completed spin-offs with announcement dates between 1990 and 2000 and with ATP information from RiskMetrics (formerly IRRC). We start in 1990 because this is the year we begin to have information on ATPs. We stop at 2000 because we examine three-year operating performance following spin-off ex-dates. We confirm each transaction by checking reports from *The Wall Street Journal* and other financial media provided through *LexisNexis*, and we correct various errors in the SDC dataset. We eliminate spin-offs if they are taxable or attributable to regulatory issues. We drop issues if the parent firm or the spun-off unit operates in the financial (SIC codes of 6000 to 6999) or utility industries (SIC codes of 4900 to 4999). Finally, we do not include spin-offs if the announcement was made in the context of an equity carve-out (IPO) announcement, but we retain spin-offs that have publicly-traded stock (either ordinary shares or tracking stock) at the time of the spin-off announcement. This selection process leaves us with 139 completed, tax-free, voluntary spin-offs over the sample period.

We report the distribution of spin-offs by year in Table 1. During the sample period, the years with the most spin-off announcements (out of 139) are 1995 with 21, 1998 with 23, and 2000 with 23. Spin-off executions are most common in 1996, 1998, and 2000. Untabulated results show that there is no industry pattern based on the 48 Fama and French (1997) industry codes for parents or spun-off units. In general, the sample is diverse in both time and industry.

Table 1
Distribution of spin-offs. This table provides the distribution of the 139 spin-offs with announcement dates between 1990 and 2000. We identify spin-offs from Thomson Financial's Securities Data Corporation (SDC) Mergers and Acquisitions database. We confirm each spin-off by checking with reports from the *Wall Street Journal* and other financial media provided by *LexisNexis*. We report the distribution of spin-offs by year of announcement and year of execution.

Observations by announcement			Observations by execution		
Year	*N*	Percentage of sample	Year	*N*	Percentage of sample
1990	7	5.04	1990	5	3.60
1991	3	2.16	1991	4	2.88
1992	7	5.04	1992	6	4.32
1993	12	8.63	1993	8	5.76
1994	7	5.04	1994	11	7.91
1995	21	15.11	1995	12	8.63
1996	12	8.63	1996	19	13.67
1997	9	6.47	1997	10	7.19
1998	23	16.55	1998	18	12.95
1999	15	10.79	1999	16	11.51
2000	23	16.55	2000	17	12.23
			2001	10	7.19
			2002	3	2.16
Total	139	100	Total	139	100

We obtain ATP data from RiskMetrics, which publishes detailed listings of corporate governance provisions. The dataset provides a corporate governance index that counts how many ATPs a firm has (see Gompers et al., 2003, for a detailed description of the index). We obtain price and return information from CRSP, accounting information from Compustat, and information on equity-based compensation for firm management from ExecuComp.

4. Abnormal returns around spin-off announcements

4.1. Univariate analyses

We begin our empirical analyses by investigating the relation between ATPs and abnormal returns of parent firms around spin-off announcement dates. RiskMetrics provides data in August of 1990, June of 1993 and 1995, and January of 1998, 2000, 2002, and 2004. The number of ATPs for a parent firm is the last RiskMetrics-reported corporate governance index value for the firm at or before the month of the spin-off announcement date.

In Panel A of Table 2, we first report abnormal returns around announcement dates for the whole sample. We calculate the abnormal returns using the market model. As shown, the cumulative two- and three-day abnormal returns, *CAR2* and *CAR3*, are 1.92% and 2.19%, respectively. Both values are significantly different from zero at the 1% level.

We next divide the whole sample into three sub-samples based on the number of ATPs in the parent before the spin-off announcement date. To keep the sub-samples roughly equal in size, we define low-ATP firms as those with $ATP < 9$ ($N = 43$), high-ATP firms as those with $ATP > 11$ ($N = 37$), and medium-ATP firms as the rest ($N = 59$). Panel A of Table 2 shows a statistically significant difference in the abnormal returns between the high- and low-ATP firms. The average *CAR3* for the high-ATP group is 4.96%, which is statistically significant at the 1% level. In contrast, the average *CAR3* for the low-ATP group is -.005%, which is statistically indistinguishable from zero.[3] The results for *CAR2* are similar. Thus, our

[3] Throughout the paper, we report univariate results based on *ATP* but not *ATP6*. This is because in our sample, there is less variation in the value of *ATP6* than in the value of *ATP*. In unreported results, we find that the value of *ATP6* ranges from 0 to 5 is heavily concentrated at 2 (close to half of our sample). In contrast, the value of *ATP* ranges from 2 to 14 and has more variation and is less concentrated at one number.

Table 2
Results on abnormal spin-off announcement returns. This table presents results on the relation between ATPs and abnormal spin-off announcement returns. Panel A compares abnormal announcement returns between high-ATP and low-ATP sub-samples. *ATP* is the number of antitakeover provisions, identified by Gompers et al. (2003), from RiskMetrics. High-ATP firms have *ATP* greater than 11 before the spin-off announcement; low-ATP firms have *ATP* below 9; medium-ATP firms have *ATP* between 9 and 11. *CAR3* (*CAR2*) is the three-day (two-day) abnormal return in percentage over the period [−1, +1] ([0, +1]), where day 0 is the announcement date. In Column 6, we report the difference in means between high-ATP and low-ATP firms. In Column 7, we report *p*-values from a *t*-test of equality of means between high-ATP and low-ATP firms. Column 8 reports *p*-values for median tests for the difference between high-ATP and low-ATP firms based on the Wilcoxon rank test. Panel B provides summary statistics for the independent variables used in regressions in this table. Panels C and D provide regression results for abnormal announcement returns. In both panels, the dependent variable is *CAR3*, the three-day abnormal return during the announcement period [−1, +1]. In Panel C, the main independent variable is *ATP*. In Panel D, the main independent variable is *ATP6*. In panels C and D, we report *p-values* in parentheses. Appendix A defines all variables.

Variable	All (*N*)	High ATP (*N*)	Medium ATP (*N*)	Low-ATP (*N*)	Difference between high-ATP and low-ATP firms	*t*-Test *p*-value	Wilcoxon rank test *p*-value
Panel A: Comparison of abnormal spin-off announcement returns between high-ATP and low-ATP firms							
CAR2	1.92***	4.20***	1.89**	−0.006	4.20	0.013**	0.025**
	(139)	(37)	(59)	(43)			
CAR3	2.19***	4.96***	2.05**	−0.005	4.96	0.007***	0.026**
	(139)	(37)	(59)	(43)			

Variable	*N*	Mean	Median	Std. dev.	Minimum	Maximum
Panel B: Summary statistics of independent variables						
ATP	139	9.6259	10	2.7061	2	14
ATP6	139	1.7059	2	0.9590	0	5
Focus	139	0.6259	1	0.4856	0	1
Valtrans	131	1773	353	4593	5	31,179
Size	139	12,879	2776	31,244	62	191,284
Offsize	131	0.2269	0.1398	0.2245	0.0094	0.9822[a]
Bkratio	136	0.4822	0.4036	0.3531	0.0002[b]	2.1552
Ebc	118	0.3748	0.4095	0.2565	0	0.9298
OPgr	125	0.0760	−0.0789	0.6767	−0.9670	2.8294
Pri	139	0.8058	1	0.3970	0	1

Intercept	*ATP*	*Focus*	*Offsize*	*Logsize*	*Bkratio*	*OPgr*	*Pri*	*Ebc*	*N*	Adj. R^2
Panel C: Regression results using ATP										
−0.1301	0.0062	0.0174	0.0334	0.0058	0.0925	−0.0030	−0.0050		120	0.187
(0.018)	(0.037)	(0.176)	(0.263)	(0.161)	(0.000)	(0.056)	(0.7500)			
−0.0750	0.0046	0.0160	0.0332	0.0043	0.0737	−0.0026	−0.0006	−0.0624	106	0.233
(0.285)	(0.056)	(0.252)	(0.323)	(0.355)	(0.001)	(0.059)	(0.974)	(0.030)		

Intercept	*ATP6*	*Focus*	*Offsize*	*Logsize*	*Bkratio*	*OPgr*	*Pri*	*Ebc*	*N*	Adj. R^2
Panel D: Regression results using ATP6										
−0.0964	0.0107	0.0151	0.0337	0.0056	0.0939	−0.0034	−0.0066		120	0.153
(0.049)	(0.058)	(0.238)	(0.261)	(0.172)	(0.000)	(0.059)	(0.675)			
−0.0508	0.0087	0.0151	0.0132	0.0063	0.0855	−0.0028	−0.0001	−0.0806	106	0.217
(0.340)	(0.185)	(0.259)	(0.707)	(0.177)	(0.000)	(0.051)	(0.995)	(0.010)		

* Significance levels of 10%.
** Significance levels of 5%.
*** Significance levels of 1%.
[a] Whittaker Corp spun-off Whittaker Bioproducts Inc. in 1991.
[b] Freeport McMoRan Inc. in 1994.

univariate tests indicate that firms with more ATPs have higher abnormal announcement returns.

4.2. Multivariate analyses

We now turn to multivariate regression analyses to examine the relation between ATPs and abnormal announcement returns after controlling for various factors that may affect the market reaction to spin-offs. We define the independent variables in Appendix A. The first of these variables, *ATP*, is the previously defined number of antitakeover provisions. Bebchuk et al. (2009) find that six particular provisions are most effective among all ATPs, and we construct an index (*ATP6*) that counts the number of these six provisions.[4] We use *Focus* to measure whether the spin-off is focus-increasing, meaning that the spun-off unit is in an unrelated industry as the parent (as measured by the two-digit SIC code). Based on previous literature (Daley et al., 1997; Desai and Jain, 1999), the value creation of focus-increasing spin-offs is greater than that of non-focus-increasing ones. We include *Logsize* to control for the size of the parent, but we have no *a priori* predictions about the impact of size on market reactions to a spin-off announcement. We include *Offsize* to control for the size of the spin-off relative to the parent firm. All else equal, we expect a relatively large spin-off to have a greater impact than a small one. We include *Pri* because the information content of a spin-off announcement may be different when the spun-off unit is already publicly traded. For example, there may be less of a surprise component, which would imply a negative coefficient. Wintoki et al. (2008) point out that prior performance and growth options may determine the firm's current performance and governance structure. Therefore, we include the book-to-market ratio of the firm, *Bkratio*, to control for the firm's growth prospects. We also include the variable *OPgr* to control for the firm's prior performance, where *OPgr* is the industry-adjusted operating income growth rate of the parent firm in the three-year period before the spin-off announcement.

Because a spin-off would seem to be against the interests of an entrenched management, an obvious question arises: why would such managers ever do one? One possibility lies in the trade-off between the benefits from perquisite consumption and stock price gains. That is, managers may face a trade-off when conducting a spin-off. On the one hand, a spin-off reduces the amount of resources under their control, thereby reducing their private benefits

[4] The six provisions are classified boards, limits to bylaw amendments, limits to charter amendments, supermajority requirements for mergers, poison pills, and golden parachutes.

of control. On the other hand, a spin-off may increase the stock price of the firm, thereby increasing the value of equity-based compensation to the managers. They will conduct a spin-off only when the benefits outweigh the costs. As a result, managers with a large value of equity-based compensation benefit more from a spin-off, and they should be willing to conduct a spin-off even when the gains from a spin-off are moderate. In contrast, managers with a small value of equity-based compensation benefit less from a spin-off, and they should be willing to conduct a spin-off only when the gains from a spin-off are very large. Thus, we expect a negative relation between equity-based compensation and gains from a spin-off. To test this, we include the variable *Ebc* to control for the extent of stock price-based incentives faced by managers.

Panel B of Table 2 provides descriptive statistics for the two measures of ATPs and the control variables. The total number of ATPs ranges from 2 to 14 with a mean of 9.63, a median of 10, and a standard deviation of 2.7. The number of ATPs from the Bebchuk et al. (2009) six most relevant provisions, *ATP6*, ranges from 0 to 5 with a mean of 1.71, a median of 2, and a standard deviation of 0.96. The proportion of spin-offs that are focus-increasing is about 63%, which is consistent with previous literature (e.g., Daley et al., 1997). The average divested proportion is 22.7%, similar to 25% reported by Schipper and Smith (1983) and Daley et al. (1997). The mean parent market value is $12.879 billion, and the average book-to-market ratio is .482. About 81% of spun-off units have no publicly-traded stock before spin-offs.

In Panels C and D of Table 2, we report our regression results on spin-off announcement returns. In our first regression in Panel C, which does not include *Ebc*, the coefficient on *ATP* is positive and significant at the 5% level, which is consistent with our univariate results. Assuming a constant marginal effect, the addition of one more ATP increases the three-day abnormal return by 0.62%. An increase of one standard deviation in the number of ATPs increases *CAR3* by $2.7 \times 0.62\% = 1.67\%$, which is economically significant. The coefficient on *Bkratio* is positive and statistically significant at the 1% level, indicating that value firms have a larger market reaction to spin-off announcements. The coefficient on prior performance, *OPgr*, is negative and statistically significant at the 10% level, suggesting that the market reacts more positively to firms experiencing low operating performance before spin-offs. The adjusted R^2 is 18.7%, which is relatively high for a cross-sectional regression of abnormal returns.

When we include *Ebc* in our second regression, our sample size decreases from 120 to 106 because some firms do not have information on equity-based compensation for their top executives. The coefficient on *ATP* falls by about one third, but remains significant (p-value = .056). The coefficient on *Bkratio* remains positive and significant, and that on *OPgr* remains negative and significant. The coefficient on *Ebc* is negative and significant (p-value = .03), indicating that the market reaction to a spin-off is smaller for firms with greater equity-based compensation. This negative relation is consistent with our earlier conjecture that a management team with low equity-based compensation will conduct a spin-off only when the firm's equity is severely undervalued because their compensation is less sensitive to the changes in the firm's equity value.

Panel D shows that the results using the other measure of ATPs, *ATP6*, are similar to those in Panel C, although the coefficient on *ATP6* becomes insignificant in the regression with *Ebc*. The weak results associated with *ATP6* could be due to the fact that there is less variation in the value of *ATP6* than in the value of *ATP*, especially after the sample size decreases to 106.

To summarize, the evidence shows that firms with more ATPs before spin-offs have higher abnormal announcement returns than firms with fewer ATPs, which is consistent with the prediction of the managerial entrenchment hypothesis instead of the shareholders' interest hypothesis.

5. Operating performance

In this section, we examine the difference in operating performance between high-ATP firms and low-ATP firms before spin-offs and the improvement in operating performance following spin-offs. To perform these analyses, for each spin-off we find a matching firm for the parent firm and one for the spun-off unit and use these to construct a pro forma firm. A pro forma firm is a combination of the parent and the subsidiary in proportion to their year-end market values. We define a pro forma matching firm in a similar way. The matching firm is the firm with the closest market value and the same Fama and French (1997) 48 industry classification as the sample firm at the end of the month of the spin-off ex-date. The average relative size difference between sample firms and matching firms is less than 5%.

5.1. Operating performance before spin-offs

Our measure of operating performance is operating cash flow return, which we define as the ratio of operating cash flow (Compustat annual data item #13) to total assets (item #6). Previous studies on spin-offs also use this measure (e.g., Daley et al., 1997; Desai and Jain, 1999). We define the abnormal operating performance (*AOP*) as the operating performance of the sample firm minus that of the matching firm. We include a firm in our sample as long as it has information on the number of ATPs and at least one-year's operating performance data subsequent to the execution of the spin-off.

Panel A of Table 3 presents results on the difference in abnormal operating performance between high-ATP firms and low-ATP firms before spin-offs. As in Table 2, we define high-ATP firms are those with $ATP > 11$ and low-ATP firms as those with $ATP < 9$. We use three measures of abnormal operating performance, AOP_{-2}, AOP_{-1}, and $CAOP_{-2,-1}$. AOP_{-2} is the operating performance of the sample firm in year -2 minus the market-value-weighted operating performance of the matching firms for the parent and the spun-off unit in year -2. We define AOP_{-1} similarly. We define the cumulative abnormal operating performance from year -2 to year -1 ($CAOP_{-2,-1}$) as:

$$CAOP_{-2,-1} = (1 + AOP_{-2})(1 + AOP_{-1}) - 1. \quad (1)$$

The first column in Panel A of Table 3 presents results on the abnormal operating performance of firms before spin-offs. As shown, for the whole sample, firms that engage in spin-offs have similar operating performance compared to their matching firms. Taken at face value, this result seems to suggest that inferior operating performance is not a motive for spin-offs. However, in the second column, all three measures of abnormal operating performance show that high-ATP firms underperform their matching firms before spin-offs. For example, in year -1, high-ATP firms underperform their matching firms by 3.5% on average, and the underperformance is statistically significant at the 1% level. In contrast, the fourth column shows that low-ATP firms do not underperform their matching firms before spin-offs by any of the three abnormal operating performance measures. Interestingly, the third column shows that medium-ATP firms have the highest abnormal operating performance using all three measures. This seems to be consistent with the notion that there is an optimal level of ATPs for firms and neither extremely high nor extremely low-ATPs are good for firm performance.

The last three columns of Panel A report the difference in the abnormal operating performance between high-ATP and low-ATP firms. The results show that high-ATP firms generally underperform low-ATP firms to an economically meaningful degree, but the difference is statistically significant (at the 10% level) only in

Table 3
Operating performance before spin-offs. This table presents results on operating performance of firms with different numbers of ATPs before spin-offs. Panel A compares the operating performance before spin-offs between high-ATP firms (with $ATP > 11$) and low-ATP firms (with $ATP < 9$). AOP_{-2} and AOP_{-1} are the abnormal operating performance at year −2 and year −1, respectively, with year 0 being the year of the spin-off ex-date. The cumulative operating performance from Year −2 to Year −1 is denoted by $CAOP_{-2,-1} = (1 + AOP_{-2})(1 + AOP_{-1}) - 1$, where AOP_t is the abnormal operating performance in year t. The abnormal operating performance (AOP) is defined as the operating cash flow return (ROA) of the sample firm minus that of the matching firm. The operating cash flow (ROA) is defined as the ratio of the year-end operating cash flow (Compustat data annual item 13) to year-end total assets (item 6). The matching firm is the firm with the closest market value and the same 48 industry classification (Fama and French, 1997) as the sample firm at the end of the month of the spin-off ex-date. In Column 7 of Panel A, we provide p-values from a t-test of equality of means between high-ATP and low-ATP firms. In Column 8, p-values for median tests for the difference between high-ATP and low-ATP firms are reported based on the Wilcoxon rank test. Panel B reports the means of ATPs before spin-offs of our sample firms and their matching firms. In Column 6 of Panel B, we provide p-values from a t-test for paired samples.

Variable	All (N)	High ATP (N)	Medium ATP (N)	Low-ATP (N)	Difference between high-ATP and low-ATP firms	t-Test p-value	Wilcoxon rank test p-value
Panel A: Comparison of operating performance before spin-offs between high-ATP and low-ATP firms							
AOP_{-2}	0.390	−2.800***	2.710	−0.010	−2.790	0.117	0.198
	(130)	(35)	(55)	(40)			
AOP_{-1}	0.200	−3.500***	2.917	−0.300	−3.230	0.079*	0.099*
	(130)	(35)	(55)	(40)			
$CAOP_{-2,-1}$	1.210	−5.900***	6.315*	0.410	−6.260	0.069*	0.121
	(130)	(35)	(55)	(40)			

	N	ATP of sample firms	ATP of matching firms	Difference in mean	t-Test p-value
Panel B: Average numbers of ATPs of sample firms and their matching firms					
Whole sample	105	9.79	9.73	0.06	0.864
High ATP	28	12.75	9.39	3.36	<0.0001***
Medium ATP	44	10.18	10.70	−0.52	0.231
Low-ATP	33	6.75	8.72	−1.97	0.0003***

* Significance levels of 10%.
** Significance levels of 5%.
*** Significance levels of 1%.

AOP_{-1} and $CAOP_{-2,-1}$ using the t-test, and in AOP_{-1} using the Wilcoxon rank test.

To further examine the relation between ATPs and operating performance, we compare the average ATP levels of our sample firms with their matching firms. We report the results in Panel B of Table 3. The first row shows that the average values of ATP for sample firms and their matching firms are 9.79 and 9.73, respectively, with the difference statistically insignificant.[5] The second row shows that high-ATP firms have an average of 12.75 ATPs, greater than the 9.39 ATPs for their matching firms, with the difference statistically significant. In contrast, the fourth row shows that low-ATP firms have an average of 6.75 ATPs, lower than the 8.72 ATPs for their matching firms, with the difference also statistically significant. There is no significant difference in ATPs between medium-ATP firms and their matching firms. Combined with results in Panel A that high-ATP firms underperform their matching firms, our results are consistent with previous findings in the literature that firms with more ATPs tend to have poorer operating performance (e.g., Core et al., 2006).

To summarize, our results show that high-ATP firms underperform their matching firms before spin-offs, while low-ATP firms do not. The evidence supports the notion that ATPs lead to managerial entrenchment and negatively affect firm operating performance.

5.2. Operating performance improvements after spin-offs

5.2.1. Univariate analyses

We next examine the change in operating performance following spin-offs. As in Daley et al. (1997), we concentrate on the change (improvement) in AOP from before the spin-off to after. To measure the improvement in operating performance after a spin-off, we define three different measures. We define cumulative operating performance improvement from year −1 to year 1 ($CAOP_{-1,1}$) as:

$$CAOP_{-1,1} = AOP_1 - AOP_{-1}, \tag{2}$$

where AOP_t is the abnormal operating performance for firm i in year t (year 0 is the year of the ex-date). We define the other two measures, $CAOP_{-1,2}$ and $CAOP_{-2,2}$, similarly as follows:

$$CAOP_{-1,2} = (1 + AOP_1)(1 + AOP_2) - (1 + AOP_{-1}) \tag{3}$$

and

$$CAOP_{-2,2} = (1 + AOP_1)(1 + AOP_2) - (1 + AOP_{-1})(1 + AOP_{-2}). \tag{4}$$

Panel A of Table 4 shows that, on average, there is no significant improvement in operating performance after spin-offs for the whole sample. Coupled with Table 3, this evidence taken at face value suggests that spin-offs have no effect on operating performance either before or after the event.

We next divide the sample into three groups based on the value of ATP. High-ATP firms ($ATP > 11$) have positive improvement in operating performance following spin-offs, and the improvement is statistically significant for $CAOP_{-1,1}$ and $CAOP_{-1,2}$, but not for $CAOP_{-2,2}$. For example, the average improvement in operating performance for high-ATP firms from year −1 to year 1 is 2.25%, which is statistically significant at the 5% level. Medium-ATP firms also have positive improvement in operating performance following spin-offs, but the improvement is not statistically significant except for $CAOP_{-1,2}$, which is statistically significant at the 10% level.

Low-ATP firms ($ATP < 9$) have negative operating performance improvement following spin-offs. The change is not statistically significant for $CAOP_{-1,1}$ or $CAOP_{-1,2}$. It is significant at the 10% level for $CAOP_{-2,2}$. Most important, the difference in the improvement in operating performance between high-ATP and low-ATP firms is positive and statistically significant for all three measures by either mean or median tests. The difference in improvement is economically large, ranging from 4.75% for $CAOP_{-1,1}$ to 8.83% for $CAOP_{-2,2}$. Overall, the results in Panel A of Table 4 suggest that high-ATP firms have greater improvement in operating performance after a spin-off than low-ATP firms.

5.2.2. Multivariate analyses

In this subsection, we use multivariate regression to explore the relation between ATPs and the improvement in operating performance following spin-offs and report results in Panels B and C of Table 4. As in Table 2, we report results both with and without

[5] Because not all matching firms have ATP information from RiskMetrics, the number of observations in this panel decreases to 105 from 130.

Table 4
Operating performance improvements after spin-offs. This table provides results on operating performance improvements after spin-off ex-dates. Panel A compares operating performance improvements after spin-offs between high-ATP (with *ATP* > 11) and low-ATP firms (with *ATP* < 9). The operating performance improvements from Year −1 to Year 1, from Year −1 to Year 2, and from Year −2 to Year 2 are defined as $CAOP_{-1,1} = AOP_1 - AOP_{-1}$, $CAOP_{-1,2} = (1 + AOP_1)\ (1 + AOP_2) - (1 + AOP_{-1})$, and $CAOP_{-2,2} = (1 + AOP_1)\ (1 + AOP_2) - (1 + AOP_{-1})\ (1 + AOP_{-2})$, respectively, where AOP_t is the abnormal operating performance in year t (year 0 is the year of the spin-off ex-date). The abnormal operating performance (*AOP*) is the operating cash flow return of the sample firm minus that of the matching firm. The operating cash flow return is the ratio of the year-end operating cash flow (Compustat data item 13) to year-end total assets (item 6). The matching firm is the firm with the closest market value and the same 48 industry classification (Fama and French, 1997) as the sample firm at the end of the month of the spin-off ex-date. In the post-spin-off period, the operating cash flow returns of the parents and the subsidiaries are combined in proportion to their year-end market values. In Column 6, we report the difference in means between high-ATP and low-ATP firms. In Column 7, we provide *p*-values from a *t*-test of equality of means between high-ATP and low-ATP firms. In Column 8, *p*-values for median tests for the difference between high-ATP and low-ATP firms are reported based on the Wilcoxon rank test. Panels B and C provide regression results for operating performance improvements. In both panels the dependent variables are $CAOP_{-1,1}$, $CAOP_{-1,2}$, and $CAOP_{-2,2}$. In Panel B, the main independent variable is *ATP*. In Panel C, the main independent variable is *ATP6*. In Panels B and C, *p-values* are reported in parentheses. Appendix A defines all variables.

Variable	All (*N*)	High ATP (*N*)	Medium ATP (*N*)	Low-ATP (*N*)	Difference between high-ATP and low-ATP firms	*t*-Test *p*-value	Wilcoxon rank test *p*-value
Panel A: Operating performance improvements after spin-off ex-dates for high-ATP and low-ATP firms							
$CAOP_{-1,1}$	0.177	2.250**	0.805	−2.500	4.75	0.021**	0.008***
	(130)	(35)	(55)	(40)			
$CAOP_{-1,2}$	1.470	3.820*	4.680*	−5.000	8.82	0.022**	0.039**
	(130)	(35)	(55)	(40)			
$CAOP_{-2,2}$	0.496	3.330	3.051	−5.500*	8.83	0.021**	0.044**
	(130)	(35)	(55)	(40)			

Intercept	*ATP*	*Focus*	*Offsize*	*Logsize*	*Bkratio*	*OPgr*	*Pri*	*Ebc*	*N*	Adj. R^2
Panel B: Regression results using ATP										
Operating performance improvement from Year −1 to Year +1: $CAOP_{-1,1}$										
−0.1496	0.0066	0.0155	0.0263	0.0080	0.0194	−0.0018	0.0004		115	0.029
(0.100)	(0.012)	(0.243)	(0.239)	(0.080)	(0.464)	(0.573)	(0.981)			
−0.1282	0.0059	0.0139	0.0400	0.0090	0.0044	−0.0004	0.0002	−0.0433	96	0.010
(0.064)	(0.044)	(0.353)	(0.275)	(0.104)	(0.890)	(0.909)	(0.994)	(0.200)		
Operating performance improvement from Year −1 to Year +2: $CAOP_{-1,2}$										
−0.1701	0.0111	0.0021	0.0107	0.0109	0.0347	−0.0004	0.0104		115	0.012
(0.137)	(0.032)	(0.936)	(0.810)	(0.233)	(0.511)	(0.944)	(0.751)			
−0.1535	0.0099	0.0048	0.0120	0.0119	0.0365	−0.0021	0.0181	−0.0448	96	0.005
(0.275)	(0.099)	(0.875)	(0.873)	(0.292)	(0.577)	(0.759)	(0.788)	(0.515)		
Operating performance improvement from Year −2 to Year +2: $CAOP_{-2,2}$										
−0.2357	0.0126	0.0170	0.0184	0.0135	0.0252	−0.0008	0.0091		115	0.011
(0.048)	(0.020)	(0.534)	(0.690)	(0.152)	(0.645)	(0.907)	(0.789)			
−0.2531	0.0122	0.0140	0.0464	0.0166	0.0245	−0.0001	0.0053	−0.0465	96	0.009
(0.086)	(0.052)	(0.659)	(0.553)	(0.158)	(0.719)	(0.989)	(0.900)	(0.516)		

Intercept	*ATP6*	*Focus*	*Offsize*	*Logsize*	*Bkratio*	*OPgr*	*Pri*	*Ebc*	*N*	Adj. R^2
Panel C: Regression results using ATP6										
Operating performance improvement from Year −1 to Year +1: $CAOP_{-1,1}$										
−0.1204	0.0204	0.0148	0.0280	0.0079	0.0235	−0.0011	0.0012		115	0.071
(0.018)	(0.001)	(0.250)	(0.201)	(0.078)	(0.366)	(0.709)	(0.940)			
−0.1095	0.0225	0.0152	0.0474	0.0081	0.0099	−0.0001	0.0047	−0.0370	96	0.072
(0.066)	(0.002)	(0.292)	(0.183)	(0.125)	(0.749)	(0.975)	(0.806)	(0.257)		
Operating performance improvement from Year −1 to Year +2: $CAOP_{-1,2}$										
−0.0966	0.0223	0.0053	0.0086	0.0106	0.0320	−0.0017	0.0136		115	0.023
(0.351)	(0.071)	(0.842)	(0.848)	(0.247)	(0.548)	(0.781)	(0.679)			
−0.0817	0.0207	0.0032	0.0127	0.0102	0.0354	−0.0043	0.0255	−0.0422	96	0.018
(0.515)	(0.105)	(0.915)	(0.866)	(0.364)	(0.591)	(0.514)	(0.528)	(0.543)		
Operating performance improvement from Year −2 to Year +2: $CAOP_{-2,2}$										
−0.1712	0.0345	0.0150	0.0198	0.0133	0.0315	−0.0009	0.0058		115	0.028
(0.107)	(0.007)	(0.578)	(0.665)	(0.156)	(0.563)	(0.990)	(0.862)			
−0.1918	0.0367	0.0146	0.0542	0.0148	0.0312	−0.0017	0.0145	−0.0381	96	0.010
(0.138)	(0.017)	(0.641)	(0.484)	(0.202)	(0.644)	(0.804)	(0.726)	(0.592)		

* Significance levels of 10%.
** Significance levels of 5%.
*** Significance levels of 1%.

equity-based compensation (*Ebc*). Panel B shows that for all three measures of operating performance improvement, the coefficient on *ATP* is positive and statistically significant, both with and without *Ebc* in the regression. For example, from year −1 to year 1, with *Ebc* in the regression, the operating performance improvement increases by 2.7 × 0.59% = 1.59% for a one standard deviation increase in *ATP*. However, the control variables are all statistically insignificant, which is in contrast with our results in Table 2 for abnormal announcement returns, where the coefficients on *Ebc*, *OPgr*, and *Bkratio* are statistically significant. In Panel C, we report results using *ATP6*, the alternative measure of ATPs, and results are similar to those in Panel C. In unreported results, we also obtain similar findings using the natural logarithm of *ATP*.

Overall, our results suggest that high-ATP firms experience greater operating performance improvements than low-ATP firms, which is consistent with the prediction of the managerial hypothesis that high-ATP firms are less efficiently run prior to spin-offs. The evidence does not support the shareholders' interest hypothesis.

6. Changes in ATPs and improvements in operating performance

In Section 5, we document that the operating performance improvement for high-ATP firms is significantly greater than that

Table 5
Abnormal changes in ATPs after spin-offs. This table compares the abnormal changes in ATPs after spin-offs between high-ATP and low-ATP firms. The high-ATP sample comprises firms with *ATP* larger than 11 before spin-off announcements, the low-ATP sample firms with *ATP* lower than 9, and medium-ATP sample firms with *ATP* between 9 and 11. The matching firm is the firm with the closest market value, the same 48 (Fama and French, 1997) industry classification, and the same number of ATPs as the sample firm at the end of the month of the spin-off announcement. Panel A reports abnormal changes in *ATP* for parent firms from before spin-off announcement dates to after spin-off ex-dates. The abnormal change in *ATP* (*EATPC*) is defined as the change in *ATP* of the parent firm less that of the matching firm. That is, $EATPC = (ATP_{after} - ATP_{before})_{parent} - (ATP_{after} - ATP_{before})_{match}$. $EATPC > 0$ means that parents have abnormal increase in ATPs after spin-off ex-dates. Panel B reports the proportion of parent firms with abnormal reduction in ATPs after spin-off ex-dates. Panel C reports abnormal changes in *ATP* of pro forma firms from before spin-off announcement dates to after spin-off ex-dates. Panel D reports the proportion of pro forma firms with excess reduction in ATPs after spin-off ex-dates. In all panels, the difference in means is equal to the mean of the high-ATP sub-sample less that of the low-ATP sub-sample. The corresponding *p*-value is obtained from a *t*-test of equality of means between the two groups. In Column 7 of Panels A and C, *p*-values for median tests are based on Wilcoxon rank test.

Whole sample (*N*)	High ATP (*N*)	Medium ATP (*N*)	Low-ATP (*N*)	High–low	*t*-Test *p*-value	Wilcoxon rank test *p*-value
Panel A: Abnormal changes in ATP for parent firms after spin-off ex-dates						
0.291	−1.276***	0.021	2.006***	−3.28	.0001***	.0001***
(110)	(29)	(47)	(34)			

High ATP (*N*)	Medium ATP (*N*)	Low-ATP (*N*)	High–low	*t*-Test *p*-value
Panel B: Proportion of parents with abnormal reductions in ATP after spin-off ex-dates				
0.621	0.280	0.206	0.42	.0001***
(29)	(47)	(34)		

Whole sample (*N*)	High ATP (*N*)	Medium ATP (*N*)	Low-ATP (*N*)	High–low	*t*-Test *p*-value	Wilcoxon rank test *p*-value
Panel C: Abnormal changes in ATP for pro forma firms after spin-off ex-dates						
0.614	−1.538**	0.075	2.491***	−4.03	.0001***	.0001***
(56)	(14)	(20)	(22)			

High ATP (*N*)	Medium ATP (*N*)	Low-ATP (*N*)	High–low	*t*-Test *p*-value
Panel D: Proportion of pro forma firms with abnormal reductions in ATP after spin-off ex-dates				
0.857	0.600	0.136		
(14)	(20)	(22)	0.72	.0001***

* Significance levels of 10%.
** Significance levels of 5%.
*** Significance levels of 1%.

for low-ATP firms. In this section, we ask three related questions. First, do firms change their ATPs after spin-offs? Second, are changes in ATPs related to operating performance improvements? And third, how do firms assign ATPs to the parent and the spun-off unit after spin-offs?

6.1. Changes in ATPs

The change in ATPs may be different between high-ATP firms and low-ATP firms. In particular, it is plausible that high-ATP firms are more likely to reduce their ATPs than low-ATP firms because of mean reversion (the number of ATPs is measured with error). To avoid the potential bias associated with firms' existing ATPs, we examine abnormal changes in ATPs. For that purpose, we select a matching firm for each sample firm. The matching firm is the firm with the closest market value, the same Fama and French (1997) 48 industry classification, and the same number of ATPs as the sample firm at the end of the month of the spin-off announcement.

We define the abnormal change in *ATP* (*EATPC*) as the change in *ATP* of the parent firm less that of the matching firm. That is, $EATPC = (ATP_{after} - ATP_{before})_{parent} - (ATP_{after} - ATP_{before})_{match}$. $EATPC > 0$ means that parents have an abnormal increase in ATPs after spin-off ex-dates. Panel A of Table 5 reports abnormal changes in ATPs for parent firms. For the whole sample, the average abnormal change is 0.291 and is not statistically significant. We then divide our sample into three groups and examine the abnormal changes in ATPs in each group. For high-ATP firms (with $ATP > 11$), parent firms, on average, decrease the number of ATPs by 1.276, whereas for low-ATP firms (with $ATP < 9$), there is an average increase of 2.006 in the parent firm's ATP. Both changes are statistically significant at the 1% level, and the difference in changes between the two groups is also statistically significant at the 1% level, by either a means test or a medians test. In contrast, the parent firms of medium-ATP firms ($11 \geqslant ATP \geqslant 9$) do not have statistically significant abnormal changes in ATPs. Panel B of Table 5 shows that 62.1% of high-ATP firms have abnormal reductions in ATPs, while only 20.6% of low-ATP firms have abnormal reductions in ATPs, with the difference between the two groups statistically significant at the 1% level.

In Panel C of Table 5, we examine abnormal changes in the market value-weighted *ATP* of pro forma firms after spin-off ex-dates.[6] For the whole sample of 56 observations, the average abnormal change in ATPs is 0.614 and is not statistically significant. For high-ATP firms (with $ATP > 11$), the pro forma firms, on average, decrease their ATPs by 1.538; in contrast, low-ATP firms (with $ATP < 9$) increase theirs by 2.491. As in Panel A, both changes, as well as the difference in changes between the two groups, are statistically significant. Panel D shows that 85.7% of high-ATP firms have abnormal decreases in ATPs on a pro forma basis versus about 13.6% for low-ATP firms, and the difference between the two groups is statistically significant at the 1% level. In summary, we find that after spin-offs, low-ATP firms have abnormal increases in ATPs and high-ATP firms have abnormal decreases in ATPs.

6.2. Relation between changes in ATPs and improvements in operating performance

In Table 6, we examine the relation between changes in ATPs after spin-off ex-dates and the improvement in operating performance. Panel A shows that if the parent firm decreases its ATPs after a spin-off, the average improvement in operating performance is positive and statistically significant. For example, the average improvement from year −1 to year 1 is 1.82%. The firms that do not decrease their ATPs do not have significant improvement in operating performance. The difference between the

[6] We first calculate the change in ATPs for the pro forma firm, which is the *ATP* of the pro forma firm after the spin-off ex-date minus that of the parent firm before the spin-off announcement. We then deduct from that value the change in ATPs for the matching firm, and the difference is the abnormal change in ATPs for the pro forma firm.

Table 6
Operating performance improvements and changes in ATPs. This table provides results on the relation between operating performance improvements and ATP changes after spin-off ex-dates. Panel A compares parent firms' operating performance improvements between ATP-decreasing and non-ATP-decreasing firms. Panel B compares pro forma firms' operating performance improvements between ATP-decreasing and non-ATP-decreasing firms. Pro forma firm's ATPs are calculated as the market value-weighted ATPs of the parent and the spun-off unit. The operating performance improvements from Year −1 to Year 1, from Year −1 to Year 2, and from Year −2 to Year 2 are defined as $CAOP_{-1,1} = AOP_1 - AOP_{-1}$, $CAOP_{-1,2} = (1 + AOP_1)(1 + AOP_2) - (1 + AOP_{-1})$, and $CAOP_{-2,2} = (1 + AOP_1)(1 + AOP_2) - (1 + AOP_{-1})(1 + AOP_{-2})$, respectively. In both panels, the difference in means is calculated as the mean of the ATP-decreasing firms less that of non-ATP-decreasing firms. We obtain *p*-values from a *t*-test of equality of means between the two groups. In Column 6, *p*-values for median tests are based on Wilcoxon rank test.

	ATP-decreasing (*N*)	Non-ATP-decreasing (*N*)	Difference in mean	*t*-Test *p*-value	Wilcoxon rank test *p*-value
Panel A: Operating performance improvements and ATP changes of parent firms: ATP-decreasing versus non-ATP-decreasing firms					
$CAOP_{-1,1}$	1.820**	−0.015	1.835	0.103*	0.097*
	(30)	(96)			
$CAOP_{-1,2}$	4.990**	0.400	4.590	0.088*	0.065*
	(30)	(96)			
$CAOP_{-2,2}$	4.210*	0.100	4.110	0.133	0.059*
	(30)	(96)			
Panel B: Operating performance improvements and ATP changes of pro forma firms: ATP-decreasing versus non-ATP-decreasing firms					
$CAOP_{-1,1}$	2.150**	0.050	2.100	0.108*	0.039**
	(21)	(36)			
$CAOP_{-1,2}$	5.640*	−0.600	6.240	0.062*	0.065*
	(21)	(36)			
$CAOP_{-2,2}$	5.740**	−0.700	6.500	0.021**	0.023**
	(21)	(36)			

* Significance levels of 10%.
** Significance levels of 5%.
*** Significance levels of 1%.

decreasing-ATP and non-decreasing-ATP groups is statistically significant in most cases; only the difference in $CAOP_{-2,2}$ is not significant by a means test.

In Panel B, we examine the relation between changes in the market value-weighted *ATP* of pro forma firms after spin-off ex-dates and the improvement in operating performance. If a pro forma firm decreases its *ATP* after a spin-off, the average improvement in operating performance is positive and statistically significant. For example, the average improvement from year −2 to year 2 is 5.74%. The firms that do not decrease their ATPs do not have significant improvement in operating performance. The difference between decreasing-ATP and non-decreasing-ATP groups is statistically significant for all three measures of operating performance improvement by both means and medians tests. This evidence establishes a direct link between changes in ATPs and the improvement in operating performance.

6.3. Difference in ATPs between the parent and the spun-off unit after spin-offs

In this subsection, we examine the difference in ATPs between parent firms and spun-off units after spin-off ex-dates and the determinants of the difference, which may shed some light on how firms choose the number of ATPs. We run a multivariate logistic regression. The dependent variable is a dummy with value 1 if the parent has strictly more ATPs than the spun-off unit and 0 otherwise. *CEO* is a dummy variable with value 1 if the parent CEO before spin-off announcement becomes the CEO of the parent firm after spin-off but not the CEO of the spun-off unit, with value 0 if the parent CEO before spin-off announcement becomes the CEO of both parent and spun-off unit after spin-off or neither. There is only one case of the CEO becoming the CEO of spun-off unit but not the parent, and we delete the observation to facilitate our analysis.[7] We obtain CEO data from ExecuComp as well as (through hand-collection) the *Wall Street Journal* and other financial media. We include the difference in the abnormal operating performance between the parent and the spun-off unit, *Aopdif*, to control for the effect of performance on ATP allocation. We also include Tobin's Q of the pre-spin-off firm, *TobinQ*, to control for the firm's growth prospects. Since coefficients in logistic regressions do not have a natural economic interpretation, we report marginal effects.

Table 7 shows that if the parent CEO before the spin-off remains as the CEO of the parent firm, but not the CEO of the spun-off unit, then after the spin-off, the parent firm is more likely to have more ATPs than the spun-off unit. The difference is both statistically significant (at the 5% level) and economically significant. The probability of the parent having more ATPs than the spun-off unit in these firms is 49.03% higher than otherwise (see model 2). The coefficient on the difference in book-to-market ratio between the parent and the spun-off unit is negative and significant, indicating that the firm is more likely to assign more ATPs to the parent if the parent firm has a lower book-to-market ratio (i.e., greater growth prospects) than the spun-off unit. The coefficients on other control variables are not significant.

To summarize this section, we find that high-ATP firms are more likely than low-ATP firms to reduce their ATPs after spin-offs. The operating performance improvements are the greatest among firms that reduce their ATPs after spin-offs. If the CEO of the pre-spin-off firm continues to be the CEO of the parent but not the subsidiary, he is more likely to assign more ATPs to the parent than to the subsidiary, compared to the case when he remains as the CEO of both the parent and the subsidiary or neither. The above findings support the managerial entrenchment hypothesis but not the shareholders' interest hypothesis.

7. Endogeneity and other governance features

7.1. Endogeneity

One issue we have not addressed so far is the endogeneity problem. It is possible that ATPs *per se* do not cause entrenchment/inefficiency in a firm and the spin-off decision. Rather, certain firm and industry characteristics may determine both whether a firm conducts a spin-off and how many ATPs the firm adopts. One possibility is that management quality drives both decisions: firms with less competent managers adopt more ATPs to entrench themselves; at the same time, these firms are less efficiently run before spin-offs and the gains from spin-offs are greater. Therefore, we

[7] Our results hold when we keep this observation and set the CEO dummy to −1.

Table 7
Logistic regression results on the difference in ATPs between the parent and the subsidiary after spin-offs This table provides marginal effect from logistic regressions on what determines the difference in ATPs between the parent and the subsidiary after spin-offs ex-dates. The dependent variable is a dummy variable with value 1 if the parent has strictly more ATPs than the subsidiary and 0 otherwise. *CEO* is a dummy variable with value 1 if the parent CEO before spin-off announcement becomes the CEO of the parent firm after spin-off but not the CEO of the spun-off unit, with value 0 if the parent CEO before spin-off announcement becomes the CEO of both parent and spun-off unit after spin-off or neither. *TobinQ* is the ratio of the market value of assets and the book value of assets for the parent firm: the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes. The market value of equity is measured at the year end prior to spin-off announcement, and the accounting variables are measured in the corresponding fiscal year. *Bkdif* is the difference between book-to-market ratio of the parent firm and that of the spun-off unit at the end of the month of the spin-off ex-date. *Aopdif* is the difference in one-year operating performance between the parent firm and the spun-off unit after spin-off ex-date. Other control variables are defined in Appendix A. We report *p-values* in parentheses.

CEO	*Focus*	*Offsize*	*Logsize*	*TobinQ*	*Bkdif*	*Aopdif*	*Pri*	*Ebc*	*N*	Pseudo R^2
0.4578	0.0254	0.0932	0.0002	0.0452	−0.0784	−0.0765	−0.0611		45	0.372
(0.016)	(0.793)	(0.241)	(0.995)	(0.418)	(0.037)	(0.450)	(0.426)			
0.4903	0.0187	0.0969	0.0101	0.0681	−0.0801	−0.0377	−0.0691	−0.0289	42	0.354
(0.015)	(0.852)	(0.238)	(0.838)	(0.330)	(0.052)	(0.407)	(0.388)	(0.544)		

will observe a positive relation between the number of ATPs and the announcement return and the improvement in operating performance after spin-offs. Another possibility is that the firm's investment opportunities and business environment determine both decisions. For example, firms in a declining industry with few investment opportunities may adopt more ATPs to fend off takeover threats. At the same time, these firms may benefit more from a spin-off. Therefore, we observe a positive relation between the number of ATPs and the gains from a spin-off.

We use a two-step procedure to address the above concerns. In the first step, we predict a firm's number of ATPs using different firm and industry characteristics, including management quality and the firm's investment opportunities and business environment. In the second step, we repeat our regression analyses in Tables 2 and 4 using the unpredicted ATP levels. Similar to Masulis et al. (2007), we use industry-adjusted operating income growth over the three-year period prior to the spin-off announcement (the variable *OPgr* we construct earlier) to measure management quality. We follow Masulis et al. (2007) and construct three industry-level variables: industry-median Tobin's Q, leverage, and free cash flow. See Appendix A for the detailed variable definitions.

To avoid look-ahead bias, we run rolling regressions in the first step to estimate predicted ATPs. Specifically, we first sort our spin-off sample by announcement date. We then run the following regression using the first 15 observations

$$ATP_i = a + bX_i + \varepsilon, \quad i = 1, 2, \ldots, 15, \tag{5}$$

where X_i is a vector of firm and industry characteristics, including firm size (*Logsize)*, book-to-market ratio (*Bkratio*), management quality (*OPgr*), and business environment (*Industry TobinQ, Industry Leverage*, and *Industry Fcash*). The predicted *ATP* for the 16th spin-off is the product of its firm and industry characteristics and the coefficients estimated from Eq. (5). We then use the estimated coefficients from the first 16 observations to calculate the predicted *ATP* for the 17th spin-off, and so on. In the second step, we regress abnormal announcement returns or operating performance improvements on unpredicted ATPs, which is defined as the difference between the actual *ATP* and the predicted *ATP* (denoted by *ABATP*), and other control variables. We report results from the second-step regressions in Panel A of Table 8.

The first column shows that when the dependent variable is the abnormal announcement return, *CAR3*, the coefficient on *ABATP* is positive and statistically significant at the 5% level. When we change the dependent variable to operating performance improvements $CAOP_{-1,1}$, $CAOP_{-1,2}$, and $CAOP_{-2,2}$, the coefficients on *ABATP* continue to be positive and statistically significant. For example, the second column shows that when the dependent variable is $CAOP_{-1,1}$, the coefficient on *ABATP* is positive and statistically significant at the 5% level.

To summarize, we find that our results on abnormal announcement returns and improvements in operating performance continue to hold after we account for the possibility that management quality and the firm's business environment determine both the spin-off decision and the number of ATPs.

7.2. Controlling for other corporate governance measures

The firm's other corporate governance features likely affect both firm performance and ATPs. For example, Wintoki et al. (2008) argue that corporate governance and firm performance are likely to dynamically influence each other. In this subsection, we examine whether our results hold if we allow for the possibility that other corporate governance features determine both firm performance and the number of ATPs. We include two sets of governance measures: product market competition and board characteristics.

Product market competition can discipline managers and reduce entrenchment (Allen and Gale, 2000; Cunat and Guadalupe, 2009). We use *Cmptiv*, a dummy variable based on the Herfindahl index, and *Unique*, a dummy variable for product uniqueness to measure product market competition. Another effective corporate governance mechanism is the board of directors (Carline et al., 2009). We control for board size, board independence, and CEO/chairman duality. We obtain board information from the RiskMetrics board database and construct three variables: *Duality* for the duality role of CEO and Chairman in a firm, *Bsize* for the size of the board, and *Indrd* for the independence of the board. See Appendix A for the detailed variable definitions.

We use a two-step procedure similar to that in Section 7.1. In the first step, we predict a firm's number of ATPs using firm size (*Logsize)*, book-to-market ratio (*Bkratio*), board characteristics (*Duality, Bsize, and Indrd*), and product market competition (*Cmptiv* and *Unique*). We start with the 16th spin-off using rolling regressions. In the second step, we regress abnormal announcement returns or operating performance improvements on unpredicted ATPs, which is defined as the difference between the actual *ATP* and the predicted *ATP* (denoted by *ABATP*), and other control variables. We report results from the second-step regressions in Panel B of Table 8. The first column shows that when the dependent variable is the abnormal announcement return, *CAR3*, the coefficient on *ABATP* is still positive and statistically significant at the 10% level. When we change the dependent variable to operating performance improvements $CAOP_{-1,1}$ or $CAOP_{-2,2}$, the coefficients on *ABATP* continue to be positive and statistically significant. The coefficient on *ABATP* is no longer significant when the dependent variable is $CAOP_{-1,2}$. The reduced statistical significance levels in Panel B may be due to the fact that board information is available only after 1996 and our sample size is reduced to 63 as a result.

To summarize, our results on abnormal announcement returns and improvements in operating performance continue to hold after

Table 8
Regression results using unpredicted ATPs. This table provides regression results using unpredicted ATPs. In Panel A, we calculate unpredicted ATPs (*ABATP*) using management quality and business environment. First, we run rolling regressions to estimate predicted ATPs. Specifically, after sorting our spin-off sample by announcement dates, we run the following regression using the first 15 observations $ATP_i = a + bX_i + \varepsilon$, $i = 1, 2, \ldots, 15$, where X_i is a vector of firm and industry characteristics, including firm size (*Logsize*), book-to-market ratio (*Bkratio*), management quality (*OPgr*), and business environment (*Industry TobinQ*, *Industry Leverage*, and *Industry Fcash*). The predicted *ATP* for the 16th spin-off is the product of its firm and industry characteristics and the coefficients estimated. We then use the estimated coefficients from the first 16 observations to calculate the predicted *ATP* for the 17th spin-off, and so on. Second, we regress abnormal announcement returns or operating performance improvements on *ABATP*, defined as the difference between the actual *ATP* and predicted *ATP*. In Panel B, we obtain unpredicted ATPs (*ABATP*) similarly as in Panel A, except that we use firm size (*Logsize*), book-to-market ratio (*Bkratio*), board characteristics (*Duality*, *Bsize*, and *Indrd*) and product market competition (*Cmptiv* and *Unique*) to predict *ATP*. Appendix A defines all variables. We report *p-values* in parentheses.

	CAR3	$CAOP_{-1,1}$	$CAOP_{-1,2}$	$CAOP_{-2,2}$
Panel A: Unpredicted ATPs using management quality and business environment				
Intercept	−0.4048	−0.1406	−0.2952	−0.2815
	(<.0001)	(0.124)	(0.112)	(0.110)
ABATP	0.0072	0.0081	0.0099	0.0091
	(0.027)	(0.047)	(0.051)	(0.077)
Focus	0.0040	0.0109	0.0052	0.0064
	(0.767)	(0.450)	(0.860)	(0.817)
Offsize	0.0615	0.0450	0.0175	0.0624
	(0.187)	(0.186)	(0.819)	(0.390)
Logsize	0.0165	0.0056	0.0087	0.0148
	(0.001)	(0.285)	(0.415)	(0.143)
Bkratio	0.1410	0.0140	0.0148	0.0582
	(.001)	(0.550)	(0.756)	(0.199)
Pri	0.0259	0.0187	0.0370	0.0414
	(0.168)	(0.343)	(0.356)	
OPgr	−0.0035	0.0006	−0.0001	0.0006
	(0.009)	(0.587)	(0.975)	(0.759)
Industry TobinQ	0.1038	0.0290	0.0944	0.0543
	(0.010)	(0.378)	(0.159)	(0.391)
Industry leverage	0.2827	0.1156	0.4057	0.0976
	(0.030)	(0.393)	(0.142)	(0.708)
Industry Fcash	0.2407	0.5917	1.1446	1.0136
	(0.134)	(0.070)	(0.001)	(0.002)
N	105	102	102	102
Adj. R^2	0.2520	0.1278	0.1018	0.0866
Panel B: Unpredicted ATPs using board characteristics and product market competition				
Intercept	−0.0193	−0.0997	−0.0619	−0.1256
	(0.854)	(0.289)	(0.757)	(0.540)
ABATP	0.0056	0.0054	0.0069	0.0154
	(0.085)	(0.074)	(0.122)	(0.021)
Focus	0.0294	0.0136	0.0320	0.0088
	(0.197)	(0.499)	(0.457)	(0.841)
Offsize	0.0311	0.0309	0.0966	0.0045
	(0.679)	(0.644)	(0.501)	(0.976)
Logsize	0.0030	0.0018	0.0001	0.0059
	(0.706)	(0.803)	(0.993)	(0.704)
Bkratio	0.1085	0.0192	0.0021	0.0283
	(0.002)	(0.521)	(0.974)	(0.666)
Pri	−0.0187	0.0273	0.0633	0.0593
	(0.513)	(0.285)	(0.248)	(0.291)
Duality	0.0185	0.0304	0.0462	0.0510
	(0.515)	(0.232)	(0.394)	(0.359)
Bsize	−0.0017	0.0040	0.0033	−0.0001
	(0.732)	(0.370)	(0.723)	(0.988)
Indrd	0.0029	0.0116	0.0103	0.0072
	(0.923)	(0.663)	(0.856)	(0.902)
Cmptiv	−0.0231	−0.0125	−0.0485	−0.0206
	(0.394)	(0.602)	(0.348)	(0.695)
Unique	−0.0265	−0.0159	−0.0434	−0.0139
	(0.321)	(0.503)	(0.393)	(0.788)
N	66	63	63	63
Adj. R^2	0.1573	0.0039	0.0038	0.0030

we account for the possibility that other corporate governance measures endogenously determine both the firm performance and ATPs.

8. Conclusion

Researchers and practitioners are still debating whether ATPs increase or decrease firm value. Most studies maintain that ATPs tend to entrench management and increase agency costs, thereby reducing shareholder value. However, other studies argue that ATPs may benefit shareholders for various reasons. We shed new light on this debate by examining the relation between ATPs and the performance of spin-offs. Specifically, we test the managerial entrenchment hypothesis and the shareholders' interest hypothesis in the context of spin-offs, according to the opposing views on how ATPs affect shareholder value in spin-offs.

We find that firms protected by more ATPs before spin-offs have higher abnormal announcement returns and greater improvement in post-spin-off operating performance than firms with fewer ATPs.

Firms that reduce the number of ATPs after spin-offs have greater improvements in operating performance than firms otherwise. Furthermore, the CEO of the pre-spin-off firm tends to retain more ATPs in the parent firm and assign fewer ATPs to the spun-off unit if he remains as the CEO of the parent but not the spun-off unit after the spin-off. The above findings are consistent with the managerial entrenchment hypothesis instead of the shareholders' interest hypothesis. Overall, there seems to be a positive relation between pre-spin-off ATPs and corporate performance in spin-off firms.

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Appendix A. Definitions of variables

ATP: Number of a firm's ATPs, compiled by Gompers et al. (2003).
ATP6: Number of a firm's ATPs, compiled by Bebchuk et al. (2009).
Focus: Dummy variable indicating whether the spin-off is a focus-increasing one (unrelated spin-off), with value 1 if the parent and the spun-off unit have different two-digit SIC codes, and 0 otherwise.
Offsize: Ratio of *Valtrans* to *Size*, where *Valtrans* and *Size* are the market values of the spun-off unit (at the spin-off execution date) and the parent firm (before the spin-off announcement date).
Logsize: Natural logarithm of the size of the parent firm (before the spin-off announcement date).
Bkratio: Book-to-market ratio of the parent firm in the month before the spin-off announcement date.
OPgr: Industry-adjusted operating income growth rate in the three-year period before the spin-off announcement date.
Pri: Dummy variable indicating whether the spun-off unit is a private entity (i.e., does not have publicly-traded stock) before the spin-off, with value 1 if yes, and 0 otherwise.
Ebc: Equity-based compensation, defined as the sum of the value of new stock options (using the modified Black-Scholes method) granted to the top five executives as a percentage of total compensation paid to them in the fiscal year before the spin-off announcement.
Industry TobinQ: Industry median of Tobin's Q. Tobin's Q is defined as market value of assets (Compustat annual item 6 minus item 60 plus the product of items 25 and 199) divided by book value of assets (item 6). The industry classification follows Fama and French (1997).
Industry Leverage: Industry median of leverage. Leverage is defined as book value of debts (item 34 + item 9) divided by market value of assets.
Industry Fcash: Industry median of free cash flow. Free cash flow is operating income before depreciation (item 13) minus interest expense (item 15) minus income taxes (item 16) minus capital expenditure (item 128), divided by book value of assets.
Duality: Dummy variable indicating CEO/Chairman duality, with value 1 if the pre-spin-off CEO is also chairman of the board, 0 otherwise.
Bsize: Number of directors on the pre-spin-off firm's board.
Indrd: Dummy variable indicating independent board, with value 1 if over 50% of directors are independent, 0 otherwise.
Cmptiv: Dummy variable indicating whether the firm's industry is competitive, with value 1 if the industry's Herfindahl index is in the bottom quartile of all 48 Fama–French industries, and 0 otherwise.
Unique: Dummy variable indicating whether the firm's industry is unique, with value 1 if the industry's median ratio of selling expenses to sales is in the top quartile of all 48 industries, and 0 otherwise.

References

Ahn, S., Denis, D.J., 2004. Internal capital markets and investment policy: evidence from corporate spin-offs. Journal of Financial Economics 71, 489–517.
Allen, F., Gale, D., 2000. Corporate governance and competition. In: Vives, X. (Ed.), Corporate Governance. Theoretical and Empirical Perspectives. Cambridge University Press, London.
Bebchuk, L.A., Cohen, A., Ferrell, A., 2009. What matters in corporate governance? Review of Financial Studies 22, 783–827.
Bhagat, S., Romano, R., 2002. Event studies and the law. Part II: Empirical studies of corporate law. American Law and Economics Review 4, 380–423.
Carline, N., Linn, S., Yadav, P., 2009. Operating performance changes associated with corporate mergers and the role of corporate governance. Journal of Banking & Finance 33, 1829–1841.
Chemmanur, T., Jiao, Y., 2005. Dual class IPOs, share recapitalization, and unifications: a theoretical analysis. Working paper, Boston College and Rensselaer Polytechnic Institute.
Chemmanur, T., Nandy, A., 2006. How do spin-offs increase efficiency? A look inside the black box. Working paper, Boston College and York University.
Chemmanur, T., Yan, A., 2004. A theory of corporate spin-offs. Journal of Financial Economics 72, 259–290.
Colak, G., Whited, T., 2007. Spin-offs, divestitures, and conglomerate investment. Review of Financial Studies 20, 557–595.
Comment, R., Schwert, G.W., 1995. Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures. Journal of Financial Economics 39, 3–43.
Core, J., Guay, W., Rusticus, T., 2006. Does weak governance cause weak stock returns? An examination of firm operating performance and analysts' expectations. Journal of Finance 61, 655–687.
Cunat, V., Guadalupe, M., 2009. Executive compensation and competition in the banking and financial sectors. Journal of Banking & Finance 33, 495–504.
Daley, L., Mehrotra, V., Sivakumar, R., 1997. Corporate focus and value creation: evidence from spin-offs. Journal of Financial Economics 45, 257–281.
Desai, H., Jain, P., 1999. Firm performance and focus: long-run stock market performance following spin-offs. Journal of Financial Economics 54, 75–101.
Fama, E.F., French, K.R., 1997. Industry costs of equity. Journal of Financial Economics 43, 153–194.
Field, L., Karpoff, J., 2002. Takeover defenses of IPO firms. Journal of Finance 57, 1857–1889.
Garvey, G., Hanka, G., 1999. Capital structure and corporate control: the effect of antitakeover statutes on firm leverage. Journal of Finance 54, 519–546.
Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. The Quarterly Journal of Economics 118, 107–155.
Hagendorff, J., Collins, M., Keasey, K., 2008. Investor protection and the value effects of bank merger announcements in Europe and the US. Journal of Banking & Finance 32, 1333–1348.
Harris, O., Glegg, C., 2009. Governance quality and privately negotiated stock repurchases: evidence of agency conflict. Journal of Banking & Finance 33, 317–325.
Masulis, R.W., Wang, C., Xie, F., 2007. Corporate governance and acquirer returns. Journal of Finance 62, 1851–1889.
Morey, M., Gottesman, A., Baker, E., Godridge, B., 2009. Does better corporate governance result in higher valuations in emerging markets? Another examination using a new data set. Journal of Banking & Finance 33, 254–262.
Schipper, K., Smith, A., 1983. Effects of recontracting on shareholder wealth: the case of voluntary spin-offs. Journal of Financial Economics 12, 437–467.
Veld, C., Veld-Merkoulova, Y.V., 2004. Do spin-offs really create value? The European case. Journal of Banking & Finance 28, 1111–1135.
Wintoki, B., Linck, J., Netter, J., 2008. Endogeneity and the dynamics of corporate governance. Working paper, University of Kansas and University of Georgia.