CEO turnover and the firm's investment decisions

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Abstract

This paper examines the relation between management turnover and divestitures of recently acquired divisions. The empirical results indicate that at the time of a management change, there is an increased probability of divesting an acquisition at a loss or one considered unprofitable by the press. The probability increases by about the same amount regardless of whether the change is an apparent age-65 retirement or a resignation. Overall, the results are consistent with a variety of agency-based theories of corporate investment and suggest that management changes are important events for corporations because they lead to reversals of poor prior decisions.

Key words: CEO turnover; Divestitures; Managerial theories of investment
JEL classification: D23; G34; J33; L14

1. Introduction

The academic and business press have focused considerable attention on corporate management succession. One potential reason for this focus is that changes in management signal changes in future corporate decisions, perhaps involving reversals of past errors, or the establishment of new policies that

reflect the differing viewpoints and abilities of the new management. While the academic literature documents stock price patterns prior to and coincident with management changes, the nature of the real changes underlying these stock price movements has remained largely unexplored.

The focus of prior research on stock returns most likely reflects the difficulty in observing actual managerial decisions. However, one action a new CEO can undertake that is easily observable by an outsider is to change the asset structure of the firm through acquisitions and divestitures. Divestitures of recently acquired assets occur with surprising frequency and can alter corporate structure dramatically (Ravenscraft and Scherer, 1987; Porter, 1987; Kaplan and Weisbach, 1992). Hence, divestitures lend themselves to the study of the real effects of changes in management.

This paper presents an analysis of the extent to which corporate divestitures coincide with CEO changes. I examine a sample of 270 large acquisitions that occurred between 1971 and 1982. Of these 270 acquisitions, 152 are still owned by the acquiring company or its acquiror at the end of 1989, 88 are sold by the acquiring company, and 30 are sold by a third party after acquiring the acquiror. I document the extent to which CEO changes within the acquiring company are related to the probability that the acquiror will sell the acquisition. The results suggest that the probability of divesting a poorly-performing acquisition (where performance is assessed both by gain or loss on sale and by press reports) rises following the departure of the CEO during whose tenure the acquisition was made. This result is consistent with a variety of managerial models of investment, including models in which managers make acquisitions that are not in the shareholders' interest, models in which managers are resistant to selling investments that prove to be mistakes, and models in which successor managers desire to sell assets solely to create losses that can be blamed on their predecessors.

It is possible that my findings merely reflect the endogeneity of management changes, whereby poor acquisition decisions potentially lead an active board to replace management and simultaneously to divest the divisions the previous management was responsible for acquiring. To evaluate this explanation, I compare management changes that occur at 'normal' retirement age to those that are potentially 'forced'. I find that both forced departures and normal retirements are associated with an increased probability of divesting prior acquisitions that are performing poorly. There is no measurable difference between the different types of management turnover in their effect on divestiture probabilities. While some divestitures reflect an active board simultaneously firing a CEO and reversing some of his decisions, divestitures of poorly performing assets also occur following planned successions in which the outgoing CEO chooses his successor.[1]

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[1] Vancil (1987) documents that in cases where the CEO is not forced out by the board and is allowed to retire at normal retirement age, successors are almost always chosen by a process controlled by the outgoing CEO.

This result suggests that mandatory retirement, in addition to allowing for better career-oriented incentives in the sense of Lazear (1979), is part of the error-correction process which has evolved in corporations. Many boards are limited in their ability to force CEOs out, so normal retirement provisions provide an opportunity to correct managerial mistakes. The evidence in this paper indicates that such corrections regularly take place after turnover, suggesting that mandatory retirement provisions are one of the mechanisms that helps control agency problems with the CEO.

The paper proceeds as follows: Section 2 considers a number of potential reasons why the choice of CEO could affect the firm's investment decisions. Section 3 briefly reviews existing evidence on the causes and effects of management turnover. Section 4 discusses the data. Section 5 presents evidence on the univariate relation between management turnover and divestitures, while Section 6 presents multivariate econometric tests of this relation. Section 7 discusses in some detail the cases in which management changes are associated with divestitures. Section 8 concludes.

2. Management changes and investment theory

The relation between changes in management and changes in investment policy depends on management's role in the investment process, including their role in the decisions to acquire and sell assets and their impact on the profitability of the assets while the company owns them. A number of arguments have been put forth concerning management's role in the investment process. These arguments generally rest on one of three broad assumptions: 1) only value-maximizing investments are taken by managers; 2) initial managers take actions that are not in the shareholders' interest; and 3) replacement managers take actions that are not in the shareholders' interest. Each assumption has implications for the potential association between management changes and asset changes, as well as implications for the profitability of divested assets.

2.1. Investment changes around management changes when all investments are value-maximizing

Even if all investment decisions are value-maximizing, one might expect a change in investment policy around the time of a change in management for two reasons. First, the optimal set of assets to own will vary across managers because different managers have different sets of skills. That is, managers and assets are 'matched' (see Holmes and Schmitz, 1992, for a related set of arguments). Second, a common factor, such as the performance of the project in question, can influence both the timing of the management change as well as the decision to keep or to sell the project.

Under the matching story, management changes are exogenous. A firm can buy additional assets in a competitive market, and the potential investment has market value p and can be bought or sold at this price with no transactions cost in each period. With an average manager, the firm can produce R dollars of per-period revenues from this new investment, where R potentially differs across firms because of firm-specific 'matches', but does not change over time. Suppose that the firm gets a new manager each period, who contributes to the productivity of the asset by adding m to the per-period revenues produced by the new asset.[2] Given these assumptions, the decision to buy the asset depends only on its profitability in the first period. In this case, buying the asset and then reselling it after one period at the same price will be a positive net present value project for the firm if and only if $(R + m + p)/p > 1 + r$ or, equivalently, $(R + m)/p > r$, where r is the required rate of return.[3] In such a world, we would observe divestitures occurring around the time of a management change when a drop in m lowers the rate of return on the new asset to below r. A clear implication of this analysis is that assets divested around management changes will have been profitable during the period in which they were owned, since during this period they earned a rate of return in excess of r.

An extension of this model could allow m or R to be uncertain until the assets are actually owned by the firm and the manager's skill at running this business, as well as the complementarities with the firm's other assets, can be learned. In this version of the model, we would expect to see a number of divestitures occurring if there is a bad realization of m or R. These would be unprofitable for the period during which they were owned. However, there would be no reason to wait until a management change to divest assets that turn out to be unprofitable. The optimal strategy would be to divest poorly performing assets as soon as possible, since holding onto them earns a lower return than selling them and investing the proceeds at rate r. The divestitures occurring around the time of a management change would be previously profitable acquisitions that should now be sold because of the different skills of the new management.

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[2] The value of m represents the additional manager-specific revenues in the new business. Note that m will vary across managers, and only reflects the manager's skill at the new business, so that some of the time it will be optimal for firms to hire managers with a low m, presumably because they are particularly good at managing other parts of the company.

Of the three variables affecting profitability (p, R, and m), m is the only one allowed to vary over time. I am particularly interested in this case because it generates divestitures around the time of management changes. Changes in p or R would also lead to divestitures, but they would not be related to management changes. In particular, if R/p drops sufficiently, the firm will find it optimal to divest the assets, because a low R/p means that the assets are relatively more valuable to an outside buyer than they are to the firm.

[3] The key assumption here is that the asset or a close subsitute can be bought or sold in every period. Because of this assumption, assets can be evaluated on a period-by-period basis, and we can ignore consideration of the value of the option to keep an asset that might not be available next period.

Another extension could allow potential new managers' skills at running the project in question to be an attribute that is considered when choosing a manager. In the context of the model, managers with a relatively high m would be preferable, and thus, all other things equal, we would see new managers with higher values of m, reducing the effect of management changes on divestiture activity.

Alternatively, suppose that the board of directors hires a manager whose quality is uncertain. If the manager's actions lower the board's perception of his quality sufficiently, the board will replace the manager with someone of higher anticipated quality. An investment project that turns out not to fit well with the rest of the firm's assets could potentially reduce the board's perception of the manager who chose the project and lead to the manager's dismissal. In addition, the poor fit is also likely to lead to a sale of the assets because they will be more highly valued elsewhere. Thus, endogeneity of management replacement could lead to an association between management changes and divestiture activity.

In this case, management changes will be associated with divestitures of poorly-performing acquisitions but not of profitable acquisitions. In addition, divestiture activity around management changes will increase only for unexpected management changes and not for planned retirements. These predictions are tested in the empirical section below.

2.2. Investment changes around management changes when the outgoing manager takes suboptimal actions

Managerial models in the spirit of Marris (1963) and Williamson (1964) also have implications for the impact of managerial changes on investment decisions. Suppose that a manager values a project more highly than do shareholders, so that if actual revenues will be R, the manager makes the investment decision as if revenues will be $R + m$. If the shareholders had complete information and could dictate which projects to undertake, the manager's personal valuations of the projects would be irrelevant. However, a number of authors have argued that because shareholders' monitoring is imperfect, managers can choose the projects the firm takes based on personal considerations. Demsetz (1983) argues that managers simply enjoy managing certain projects more than others and take this enjoyment into account when they make investment decisions. In Roll (1986), managers honestly overestimate their abilities to manage certain kinds of businesses, so they end up overinvesting in these types of businesses. Jensen (1986) emphasizes that managers' compensation is often a function of the size of the firm, so that in the absence of external monitoring, managers will undertake projects that increase firm size but not profitability. Finally, Shleifer and Vishny (1989) argue that a manager has incentives to invest in projects that increase his bargaining power with the firm because they complement his own skills. In this

case m can be thought of as the additional rents the CEO receives from having this extra bargaining power.[4]

Suppose that, for one of these reasons, a firm buys a project even though it is expected to be unprofitable, so $(R + m)/p > r > R/p$. This project is a strong candidate for divestiture after a change in management if the new manager values the project less highly than the outgoing manager.[5] In other words, if a primary reason for making investments is a manager's proclivity for projects (a relatively high m) and if this proclivity varies across managers, we would expect to see high divestiture rates around management changes. The increase in divestitures will be primarily among poorly-performing acquisitions.

A related story has been suggested by Kanodia, Bushman, and Dickhaut (1989) and Boot (1992). These authors argue that managers will be reluctant to give up on their projects because doing so would convey a negative signal to the market about their ability. Using the notation from above, suppose that R is random and known only inside the firm and only after the project is acquired. Then, even if $R/p < r$, the manager might choose not to sell the assets because the potential sale would convey negative information about him personally. His replacement, who does not care about the first manager's reputation, would have no such reason for holding onto the assets, and will tend to sell the assets relatively quickly. This argument also leads to sales of unprofitable assets coinciding with management changes.

2.3. Investment changes around management changes when replacement managers take suboptimal actions

A final explanation for asset sales around management changes is related to what is known in the accounting literature as the 'big bath' hypothesis. This hypothesis states that new management has incentives to decrease earnings immediately because of both direct compensation plans and the managerial labor market.[6] While accountants generally emphasize accounting manipulation that generates losses, the same incentives can lead management to make real decisions that generate short-term losses, even if these decisions are value-reducing. For example, suppose the firm buys an asset and then demand for the

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[4]A number of studies have examined this view empirically, including Lang, Stulz, and Walking (1991), Lehn and Poulsen (1989), May (1992), Morck, Shleifer, and Vishny (1990), and Seyhun (1990).

[5]Note that I am assuming that the firm is buying an asset at the market price, but that the asset does not produce as many revenues inside the firm as it does in its next best use. An alternative assumption is that the firm overpays for assets that are most highly valued inside the firm. I do not explore this alternative form of managerialism because while it leads to losses on these investments due to overpayment, it does not predict any adjustments in the firm's assets when managers change.

[6]See Elliot and Shaw (1988), DeAngelo (1988), Murphy and Zimmerman (1993), or Pourciau (1993) for more discussion and evidence on this hypothesis.

products produced by the asset drops, reducing both R and p, but leaving $R/p > r$. In this case, the value of the asset has dropped, but it is still relatively more valuable under the firm's management than in its next best use and so should not be sold. But if the new manager's compensation is based on improvement in earnings during his regime, then by selling the asset quickly, the new manager can report a loss immediately and easily improve earnings later on. In addition, such an action could potentially increase the manager's value in the labor market, because it would isolate the blame for management of the asset on the previous manager. As a result of these earnings baths, we would expect to see sales of unprofitable assets around the time of management changes.

One drawback of the big bath hypothesis is that it does not explain why managers do not alternatively write down the assets to their market values, which would reduce income without incurring the same economic cost. A potential reason for sales rather than write-downs may be that writing down the assets does not send the same signal to the managerial labor market because of the discretion involved in asset write-downs (see Hirshleifer, 1993, for a good summary of related literature). Whether such a model could be constructed is an open question.

To summarize, there are a number of alternative models that predict divestitures coinciding with management changes. Divestitures of poorly-performing acquisitions around planned management changes can occur for a variety of reasons, all of which involve suboptimal actions on the part of either the outgoing or successor managers. In addition to the earnings-bath explanation, divestitures of poorly-performing acquisitions can occur if there are managerial reasons for the original purchase of the acquisition or for the decision to sell or hold onto it by the manager who made the acquisition. In contrast to these managerial models, models in which managers and boards always act in the interest of shareholders imply that asset sales associated with planned changes in managers will be of previously profitable assets. This result follows because when all investments are optimal, divestitures around management changes occur when drops in m lower the rate of return below r. For this to occur, the rate of return on the assets prior to the management change must have been at least r. However, asset changes around the time of abnormal, board-initiated changes in management are likely to be of poorly-performing assets, the acquisition of which is one reason for the management change.

3. Evidence on the causes and consequences of management turnover

In the last few years there have been a number of studies examining the contracts of CEOs of large industrial corporations. Their terms average eight to ten years and are generally not specified in advance except for a provision for mandatory retirement, usually at age 65. Econometric evidence indicates that

firm performance prior to CEO turnover is generally worse than average, which suggests that some CEOs are fired for poor performance (Coughlan and Schmidt, 1985; Jensen and Murphy, 1990; Warner, Watts, and Wruck, 1988; Weisbach, 1988). On the other hand, these papers also provide evidence that poor performance is not a dominant factor in the majority of CEO departures. In fact, based on interviews with a large number of CEOs and directors, Vancil (1987) estimates that only 20% of CEOs are asked to resign before normal retirement.

Even though only a small fraction of CEO departures are 'forced', departures convey information to the stock market: a number of papers document abnormal price movements around turnover, with the direction of the movements varying with the particular sample chosen (see Warner, Watts, and Wruck, 1988, or Furtado and Karan, 1990, for a survey of these papers). In addition, Warner, Watts, and Wruck (1988) document that the variance of event-day residuals is abnormally high on the announcement of management departures. However, the information revealed by these stock price movements could reflect either poor prior performance (causing the CEO to be fired), or changes in expected future business decisions because of the change in management. Therefore, the appropriate inference to make from the observed stock price movements around management turnover is not clear.

The literature has documented that management turnover is abnormally high around unusual financial events, such as bankruptcy or a proxy fight (Gilson, 1989, 1990; DeAngelo and DeAngelo, 1989). Since asset changes also follow these financial events (Asquith, Gertner, and Scharfstein, 1991; DeAngelo and DeAngelo, 1989) it appears that, at least in extreme circumstances, management changes are part of the corporate reorganization process.

Agency considerations arising from turnover and earnings-based compensation plans suggest a number of hypotheses that have been tested in the literature. Dechow and Sloan (1991) document that managers reduce research and development expenditures prior to turnover, presumably to maximize current earnings and hence their compensation. Pourciau (1993) and Murphy and Zimmerman (1993) test the view that new CEOs tend to take an earnings bath subsequent to turnover, and find mixed support for this hypothesis.

While the prior literature emphasizes changes in accounting policies, there is at least casual evidence that real changes also occur following a management change. For instance, after Rand Araskog took over at ITT in 1979, he sold $9 billion in assets during the 1980's, most of which were prior acquisitions engineered by Harold Geneen (Barrons, August 31, 1987). After Armand Hammer died in December 1990, his successor at Occidental Petroleum, Ray Irani, sold over $2 billion dollars worth of assets in the following year (Forbes, September 2, 1991; Wall Street Journal, October 22, 1991). Recently, General Dynamics began a major divestiture program, prompted by the appointment of William Anders as CEO in January 1990 (Business Week, June 22, 1992; Dial

and Murphy, 1994). In addition, Jack Welch reversed General Electric's policy of 'strategic business planning' when he became CEO in 1981 (*Business Week*, September 17, 1984), dramatically altering the assignment of decision rights inside that organization. It seems clear that these management changes prompted substantial departures from the policies of the previous CEOs, including divestitures of previously acquired assets.

A recent paper suggests that these cases are not simply isolated incidents. Denis and Denis (1994) find that management changes are followed by increased operating improvements. Forced resignations are followed by restructurings that include large declines in employment, capital expenditures, and total assets. Both forced resignations and normal successions are followed by increases in operating performance, although the increase is much larger following forced resignations.

Perhaps the most closely related prior work is Ravenscraft and Scherer (1987). These authors examine line-of-business data from 1974 to 1977 and find that the probability of a sell-off of a line of business rises when there is a management change in the parent company. This paper extends their results in a number of directions. First, I am able to link the 'acquiring' CEO and the divestiture decision directly; I can thus identify which of a particular CEO's acquisitions were divested. Second, I can identify the exact interval between a management change and a divestiture. In contrast, Ravenscraft and Scherer know only that both events occur some time during their sample period. Third, the lines of business used by Ravenscraft and Scherer do not always correspond to economic markets. The observations in this study are large and visible enough to enable me to ensure that each acquisition is distinct. Finally, this paper complements Ravenscraft and Scherer because it uses a different type of sample from a different time period. The results from both studies suggest that restructurings, including divestitures, following management changes are a universal, rather than a period-specific, phenomenon.

4. Data

4.1. Sample selection

My sample is taken from Kaplan and Weisbach (1992), who use the *Mergers and Acquisitions* magazine list of the largest completed mergers each year. Kaplan and Weisbach consider acquisitions of at least $100 million (in 1982 dollars) made between 1971 and 1982 by American companies listed on the CRSP tapes. They further restrict the sample to the 282 cases in which the target's market value is at least 5% of the acquiror's.

Kaplan and Weisbach then determine the subsequent history of the acquisition. For 11 of the 282 acquisitions, they are unable to document whether or not

Table 1
The timing of acquisitions, divestitures, and CEO departures

Sample consists of 270 acquisitions of at least $100 million (in 1982 dollars) by 200 firms during the period 1971–1982.

Year	Number of acquisitions	Number divested by original acquiror	Number divested by acquiror's acquiror	Number internally-generated departures of original CEO
1971	8			
1972	4			
1973	8			
1974	7			2
1975	7			3
1976	16			1
1977	30			1
1978	39	2		9
1979	45			16
1980	30			13
1981	34	6	1	12
1982	42	2	3	14
1983		7		20
1984		9	3	16
1985		20	5	29
1986		18	8	15
1987		9	3	10
1988		12	4	6
1989		3	3	4
Total	270	88	30	171

the acquiring company still owns the assets at the end of 1989. These 11 observations are dropped from the sample, leaving 271 observations. In addition, I eliminate Searle's acquisition of Will Ross because I am unable to obtain an accurate divestiture date, leaving a sample of 270 acquisitions by 200 separate acquirors, 118 of which are divested by the end of 1989 (88 by the original acquiror and 30 after a third-party takeover).

The first column in Table 1 documents the pattern of acquisitions in the sample. It is clear that acquisition activity increased over the sample period, with the most activity occurring between 1977 and 1982. The second column documents the pattern of divestitures. These divestitures appear to be bunched toward the middle-to-late 1980s. This bunching is probably due to a natural lag between acquisition and divestitures, as well as to the general increase in merger and acquisition activity that occurred during the 1980s.

4.2. CEO turnover

I track the identities of the CEOs of the acquiring firms to determine when they leave office. Announcements of CEO changes are obtained from the *Wall Street Journal*. Of the 270 CEOs (some of whom enter the sample more than once because they make more than one major acquisition during their tenure), 43 are still in office at the end of 1989, 56 lose their jobs following an external control change, and 171 leave through an internal change. These statistics classify all cases in which the acquiring firm itself is taken over as having external management turnover, ignoring the possibility that the manager remains with the new entity, potentially managing exactly the same assets as before. The distribution of the internal CEO departures over time are listed in the fourth column of Table 1. The most common year for departures is 1985, with 29 departures. The median CEO who leaves through internal succession departs four years following the acquisition and has been in office for six years at the time of the acquisition.

5. Univariate tests

5.1. The univariate relation between CEO turnover and divestitures

Table 2 presents the time pattern of the divestitures relative to CEO changes. Divestitures are broken down by their timing relative to the turnover of the CEO who was in office when the original acquisition was made. Both the divestiture date and the turnover date are defined by their first listing in the *Wall Street Journal*. I use the initial public announcement of both events to approximate as closely as possible the time when the change in power actually takes place. While it is impossible for an outsider to observe exactly which manager is responsible for any decision, it seems likely that once a management change is announced, the new CEO largely controls the decisions of the corporation.

In fact, it is possible that the new manager's control occurs even sooner, especially in cases of forced resignation. For one of my observations, Mobil's acquisition and sale of Montgomery Ward, it seems evident that the new manager's influence occurred prior to the announcement of the change in control. Mobil announced that it would take a $500 million charge against earnings as part of its plan to sell Montgomery Ward only three days before the *Wall Street Journal* reported that Allen Murray would succeed Rawleigh Warner as CEO (see *WSJ*, May 7–10, 1985). In this case, the two events were clearly related; the divestiture decision was part of a major restructuring initiated by Murray that, in addition to asset sales, included trimming payroll, upgrading refineries, and slashing capital spending (*Industry Week*, March 17,1986; *Business Week*, December 15, 1985).

Table 2

The timing of divestitures relative to CEO departures

Sample consists of 61 divested acquisitions for which the CEO left the firm through the internal succession process. The 12 cases where the CEO left through the external control market (either a management buyout or a takeover by a third party) and the 15 cases where the CEO was still in office at the end of 1989 are excluded from the sample. The acquisitions are of at least $100 million (in 1982 dollars) and occur during the period 1971–1982.

Timing of divestiture relative to departure of acquiring CEO[a]	All divestitures	Divestitures of unsuccessful acquisitions[b]	Divestitures of successful acquisitions
4 years prior	1	1	0
3 years prior	1	0	1
2 years prior	4	3	1
1 year prior	3	3	0
Both occur in same year	10	8	2
1 year subsequent	3	0	3
2 years subsequent	8	4	4
3 years subsequent	7	3	4
4 years subsequent	6	2	4
5 years subsequent	4	1	3
6 years subsequent	4	0	4
7 years subsequent	5	2	3
8 years subsequent	2	2	0
9 years subsequent	3	0	3
Total	61	29	32

[a] The timing of the observations is calculated using *Wall Street Journal* announcement dates, so that, for example, the '1 year prior' category contains all observations for which the initial *Wall Street Journal* announcement of the divestiture occurs during the calender year prior to the initial *Wall Street Journal* announcement of the management change.

[b] Divested acquisitions are classified as 'unsuccessful' if there is a loss on sale or the *Wall Street Journal* indicates that the acquisition had not performed as well as the firm had hoped *ex ante*. All other acquisitions are classified as 'successful'.

The second column of Table 2 documents the relation between management changes and divestitures of divisions acquired by the deposed management. This column indicates that there is a large increase in divestiture activity beginning in the year of the management change. There are ten divestitures occurring in the year of the management change and another 24 divestitures in the first four years of the new CEO's term.[7] Overall, 56% of the divestitures for which the CEO leaves through an interally generated management change and 39% of all

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[7] The pattern within this four-year period might strike the reader as a little strange; only three divestitures occur in the year following the management change, while 21 occur in the second, third, and fourth years. One explanation is that prior management sometimes controls the board for a year or two following a management change (see Vancil, 1987). Hermalin and Weisbach (1988) find that

divestitures by the acquiring firms occur in this five-year period around the CEO change. From these results, it appears that there is a high level of divestiture activity around the time of a CEO change.

5.2. Measuring success ex post

Since alternative theories of the managerial role in the investment process have different predictions for the profitability of the acquisitions that are sold, I attempt to measure the *ex post* success of the acquisitions in my sample. Admittedly, any measure will be imperfect. I rely on the classification used by Kaplan and Weisbach (1992), who call an acquisition 'unsuccessful' if it registers a loss on sale, or if the *Wall Street Journal* or other business publication indicates that the reason for the divestiture was that the acquisition did not have the expected synergies with the company's other assets. These authors present some evidence suggesting that this classification is reasonable. First, they document that the two measures are highly correlated with one another, suggesting that both are at least partially measuring the same phenomenon. Second, they document that these *ex post* measures are correlated with stock price reactions to the original acquisitions, suggesting both that the market has reasonable ability to forecast success and that this success is captured by these measures. Of the 88 internally-generated divestitures in my sample, 33 are classified as 'unsuccessful' by these measures, while 55 are classified as 'successful'.

The third and fourth columns of Table 2 consider the relations between management changes and divestitures of unsuccessful and successful acquisitions. It is clear from these columns that the increase in divestiture activity around management changes derives primarily from divestitures of poorly-performing assets. Eight divestitures classified as unsuccessful occur in the same year as the management change, in contrast to only two divestitures classified as successful. (More detail on these observations and how they were classified as 'successful' or 'unsuccessful' is provided below in Section 7.) Moreover, divestitures of unsuccessful acquisitions occur sooner, relative to management changes, than divestitures of successful acquisitions. For example, six divestitures of unsuccessful acquisitions occur in the two years prior to a management change while only one divestiture of a successful acquisition occurs during this two-year period. This increase in divestiture activity prior to management changes for divestitures of unsuccessful but not successful acquisitions could potentially reflect active boards of directors that simultaneously fire CEOs and divest the acquisitions for which the CEO was responsible.

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board turnover increases in the years subsequent to management turnover. So, by the third or fourth year, the new CEO potentially has greater control of the board since he has appointed a number of his own directors, and is better able to reverse policies of his predecessor.

There are, however, a number of reasons for viewing the univariate comparisons in Table 2 with caution. First, any statistical test should also control for other factors likely to affect divestiture probabilities, such as calendar time and time held by the acquiror. In addition, Table 2 excludes the 15 observations in which divestitures occur even though the acquiring CEO does not leave the firm by 1989 and the 12 cases in which the firm is taken over subsequent to a divestiture but before the acquiring CEO departs. All CEOs eventually leave, so Table 2 is likely to understate the number of divestitures occurring prior to CEO departures. Finally, the number of potential divestitures that do not occur varies across the different categories. Clearly, any statistical test should measure the probability of a divestiture in a given period, not just the total number of divestitures. I therefore perform a multivariate analysis of divestiture probabilities, controlling for the effect of management changes in addition to other factors that are likely to affect the divestiture decision.

6. Multivariate tests

6.1. Other factors that affect divestiture probabilities

Table 3 describes how the incidence of divestiture activity varies with the time held by a particular acquiror. Very few acquisitions are sold in the first few years after they are acquired; only three of the 270 acquisitions are resold in the first two years. After a few years, the probability of divestiture rises, with the most common holding period being seven years. After seven years, the total number of divestitures declines, even though the fraction of acquisitions divested is relatively constant over different periods of time held. This pattern occurs because the number of acquisitions still owned by their original acquirors (and hence the number of potential divestitures) declines for three reasons: First, some acquisitions are divested. Second, some acquirors are themselves taken over by a third party. Third, I truncate the sample at the end of 1989.

Divestiture activity also varies with calendar time. From Table 1, it is evident that the probability of divestiture rises substantially during the 1980s. This trend probably reflects the general increase in merger and acquisition activity during this period. Potential causes of this general increase are financial innovations (Jensen, 1989) and relaxed antitrust policy (Shleifer and Vishny, 1990). Regardless of the reason for this secular increase in divestiture activity, one should clearly control for calendar time to avoid spurious correlations.

Finally, as Kaplan and Weisbach (1992) document, divestitures of diversifying acquisitions are far more common than divestitures of related acquisitions. Therefore, even if there is no theoretical reason to suspect that CEO turnover rates are correlated with the extent to which the acquiring companies are prone to make diversifying or related mergers, I control for the type of acquisition to improve the power of my statistical tests.

Table 3
Divestiture probabilities as a function of years held

Sample consists of 270 acquisitions of at least $100 million (in 1982 dollars) by 200 firms during the period 1971–1982. Divestitures all occur by 1989.

Years held	Number of divestitures	Number of possible divestitures[a]	Probability of divestiture
1	1	266	0.0037
2	2	259	0.0076
3	4	249	0.0160
4	10	238	0.0418
5	10	220	0.0452
6	11	199	0.0550
7	13	184	0.0703
8	10	153	0.0649
9	8	121	0.0656
10	7	99	0.0700
11	3	68	0.0435
12	4	44	0.0909
13	2	24	0.0833
14	0	16	0.0000
15	1	14	0.0714
16	1	8	0.1250
17	1	5	0.2000
18	0	4	0.0000
19	0	3	0.0000
Entire sample	88	2174	0.0405

[a]This column contains the number of acquisitions that were still with their original owner a certain number of years following the acquisition. The number declines with time for three reasons: 1) some acquisitions are divested by their original owners, 2) some original owners are themselves acquired, and 3) after 1989, I do not know the status of an acquisition.

6.2. Econometric specification

To measure the effect of management changes on divestiture activity, I estimate a model that predicts the probability of a divestiture in a given period. I hypothesize that the probability of a divestiture will be a function of whether the management has recently changed as well as control variables for time held, calendar time, and whether or not the acquisition was diversifying or related.

To estimate this model, I pool observations across firms and years. Firms are included for all years between the year they made the acquisitions and 1989, unless they either divested the acquisition or were taken over by a third party. In these cases, the last year included is the year the divestiture occurred or the year the third-party takeover occurred. If both a divestiture and a third-party takeover occur in the same year, I count the divestiture only if it occurs prior to

the takeover. Divestitures by third parties, while relatively common (30 cases in my sample), are not considered because they do not reflect changes of policies brought on by internal control mechanisms.

My dependent variable is a dichotomous variable that equals one if an acquisition is divested in a given year. Consequently, I use a logistic specification that models the probability of a divestiture in a given year as $e^{x\beta}/[1 + e^{x\beta}]$, where x is a vector of attributes and β is the parameter vector to be estimated by maximum likelihood.

The main independent variable I use is a dummy variable that equals one if there is a CEO change in a given year. I also control for a number of other variables that potentially affect divestiture probabilities. If the target and the acquiror share one of the four most important SIC codes (based on the *Million Dollar Directory*), the acquisition is considered related. My specification includes a dummy variable equal to one if the acquisition is considered related and zero otherwise (i.e., if it is considered diversifying). To control for calendar time, I include dummy variables for different time periods. These periods roughly approximate the empirical distribution of divestitures over time (Table 1), although the results are not sensitive to the periods chosen. To control for length of time held, I include dummy variables indicating whether the acquisition was held for less than four years or between four and eight years. These cutoffs are suggested by the empirical distribution of divestitures with respect to time held (Table 3). Again, the results are not sensitive to different choices for this variable.

The resulting equation is:

$$\log\left(\frac{\text{divestiture probability}}{1 - \text{divestiture probability}}\right)$$

$$= \alpha + \beta_1 \text{ dummy if management change}$$

$$+ \beta_2 \text{ dummy if related} + \beta_3 \text{ dummy if before 1982}$$

$$+ \beta_4 \text{ dummy if 1982–1985} + \beta_5 \text{ dummy if held less than 4 years}$$

$$+ \beta_6 \text{ dummy if held 4–8 years}$$

6.3. Multivariate results

The estimated equation is presented in the second column of Table 4. The coefficient of 0.517 on the management change variable is positive and marginally significantly different from zero (at the 10% level using a one-tailed test). In Table 4, the numbers in brackets are the predicted probabilities when the variable equals one and all other variables in the equation except the constant equal zero. They indicate that the estimated annual probability of divestiture increases by about 50% (from 0.115 to 0.178) when there is a management

change during the year and all other independent variables equal zero (so that these numbers represent divestiture probabilities for a diversifying acquisition that had been held more than eight years after 1985). This result suggests that management changes have a substantial impact on corporate policies.

The other variables in the equation also have a significant impact on divestiture probabilities. Consistent with Kaplan and Weisbach (1992), acquisitions of unrelated businesses are much more likely to be divested than acquisitions of related businesses. The coefficient of − 1.828 on the related acquisition dummy variable indicates that the probability of a divestiture of a related acquisition in a given year is only 2.0%, compared to 11.5% for a comparable unrelated acquisition. As suggested by Table 1, the probability of a divestiture rises through the 1980s, suggesting that financial innovations and relaxed antitrust policy increased the probability of a sale. Finally, as suggested by Table 3, it appears that the probability of a divestiture is very low during the first few years an acquisition is owned and then rises and stays relatively constant.

I also estimate equations that predict separately the divestiture probabilities of 'successful' and 'unsuccessful' acquisitions using the specification described above. Here, the dependent variable equals one only in the cases where the acquisition divested is either successful or unsuccessful (so that, for example, in the successful divestitures equation, the dependent variable equals one only in the 55 cases where the acquisition divested is successful and equals zero in the 33 cases where the acquisition divested is unsuccessful). The estimated equations are presented in the third and fourth columns of Table 4. The results indicate that the probability of divesting an unsuccessful acquisition increases substantially when there is a management change, while the estimated probability of divesting a successful acquisition actually decreases with a management change. The coefficient of 1.440 from the unsuccessful equation in the fourth column is highly significant and seems quite large; the probability of an unsuccessful divestiture rises from 3.6% to 13.7% if a CEO change occurs during the year. In contrast, the coefficient of − 0.770 on the CEO change variable in the successful divestitures equation is negative, although it is insignificantly different from zero.

Based on a likelihood-ratio test of the hypothesis that all coefficients are the same across the two equations, the chi-square statistic of 13.29 (with six degrees of freedom) rejects the hypothesis that the coefficients in the two equations are the same at the 5% level. I also test the hypothesis that the coefficients predicting divestitures of unsuccessful acquisitions are the same as the coefficients from the comparable equation predicting the overall divestiture probabilities. A likelihood-ratio test rejects the hypothesis that all coefficients are the same in the two equations at the 1% level (chi-square statistic of 21.61 with six degrees of freedom).

I also estimate the Table 4 equations using a number of alternative definitions of the management change variable. To ensure that my results are robust to measurement intervals, I use windows starting in both year 0 (the year of the

Table 4

Logit equations predicting divestitures of successful and unsuccessful acquisitions as a function of management turnover

Sample consists of 2,174 firm-years between 1971 and 1989. Firm-years are constructed from a sample of 270 acquisitions of at least $100 million (in 1982 dollars) by 200 firms during the period 1971–1982. Firms are included for all years subsequent to acquisition until either the acquisition is divested or the firm is taken over by a third party. Asymptotic t-statistics are in parentheses. In brackets are predicted probabilities when the independent variable equals one and all other independent variables equal zero.

Dependent variable	Dependent variable equals 1 if acquisition is divested	Dependent variable equals 1 if acquisition is divested and considered 'successful'[a]	Dependent variable equals 1 if acquisition is divested and considered 'unsuccessful'[a]
Constant	− 2.044	− 2.471	− 3.279
	(− 9.38)	(− 9.40)	(− 9.01)
Dummy equal to 1 if the CEO changed during the year	0.517	− 0.770	1.440
	(1.44)	(− 1.06)	(3.36)
	[0.178]	[0.038]	[0.137]
Dummy equal to 1 if a related acquisition	− 1.828	− 1.559	− 2.325
	(− 5.11)	(− 3.79)	(− 3.17)
	[0.020]	[0.017]	[0.004]
Dummy equal to 1 if before 1982	− 1.628	− 1.371	− 2.033
	(− 3.74)	(− 2.66)	(− 2.51)
	[0.025]	[0.021]	[0.005]
Dummy equal to 1 if 1982–1985	− 0.528	− 0.463	− 0.564
	(− 2.04)	(− 1.425)	(− 1.40)
	[0.071]	[0.050]	[0.021]
Dummy equal to 1 if held less than 4 years	− 1.239	− 1.232	− 1.243
	(− 2.54)	(− 2.106)	(− 1.43)
	[0.036]	[0.024]	[0.011]
Dummy equal to 1 if held 4–8 years	0.060	0.066	0.262
	(0.224)	(0.201)	(0.602)
	[0.121]	[0.073]	[0.047]
Predicted probability when all independent variables = 0	0.115	0.078	0.036
Log-likelihood	− 321.75	− 231.91	− 144.46

[a]Divested acquisitions are classified as 'unsuccessful' if there is a loss on sale or the *Wall Street Journal* indicates that the acquisition had not performed as well as the firm had hoped *ex ante*. All other acquisition are classified as 'successful'. By this definition, 33 divested acquisitions are classified as unsuccessful, while 55 are classified as successful.

management change) and year -1 (because it seems likely that actual changes in control occur before the public announcement of the control change) and finishing in years 1, 2, and 3 after the change. Table 5 presents the coefficients and p-values of the management change variable for each of these specifications. From this table, the impact of a management change on the probability of divesting an unprofitable acquisition is significantly different from zero regardless of the window used. However, the effect of management changes on overall divestiture probabilities is not robust to alternative measurement windows. In addition, it is evident that management changes do not increase the probability of divesting a profitable acquisition. In no case is the coefficient from the successful divestitures equation significantly positive; in fact, when the windows start in year -1, the estimated coefficient indicates that divestiture probabilities are significantly lower around a management change.

I also estimate these equations using both 'fixed-effects' and 'random-effects' specifications using a linear probability model. A fixed-effects specification assumes that there is a fixed component u_i that affects probabilities systematically across observations. A random-effects specification differs from the fixed-effects model in that it assumes that u_i is part of the residual (so that each residual equals $u_i + \varepsilon_{it}$, where u_i is constant over time and ε_{it} varies both cross-sectionally and over time). I use two different versions of each model. First, I consider the possibility that there is an acquiror-specific effect, so that u_i is constant for all the acquisitions made by a given acquiror. (A number of acquiring firms made more than one major acquisition over this time period.) Second, I allow each acquisition to have a separate effect, so that u_i is constant for a given acquisition over time but different across acquisitions. In each case, the results are similar to those reported below. In particular, using each of these alternative specifications, the coefficient on the management change variable in the equation that predicts divestitures of poorly-performing acquisitions is significantly greater than zero at the 5% level. See Hausman and Taylor (1981) or Hsiao (1986) for more discussion of this model.

Despite the fact that many acquisitions that are divested appear to have been reasonably profitable (55 of 88 cases), management changes appear to increase the divestiture probabilities of poorly-performing acquisitions only. The effect of management changes on the probability of divesting an unprofitable acquisition is noticeably larger and significantly different from the effect of management changes on either overall divestiture probabilities or on the probabilities of divesting profitable acquisitions. In addition, there is weak evidence that the probability of divesting a profitable acquisition decreases around a management change.

Overall, the evidence that management changes increase the probability of divesting poorly performing acquisitions but not successful ones is consistent with managerial-based models as well as endogenous-retirement models. To differentiate among the alternative managerial models, I rely on their different implications regarding which acquisitions will be divested following a management change. If the increased divestiture activity is due to managers buying

Table 5

The effect of management changes on divestiture probabilities: The impact of alternative measurement windows

Sample consists of 2,174 firm-years between 1971 and 1989. Firm-years are constructed from a sample of 270 acquisitions of at least $100 million (in 1982 dollars) by 200 firms during the period 1971–1982. Firms are included for all years subsequent to acquisition until either the acquisition is divested or the firm is taken over by a third party.

Window	Coefficient (p-value) on management change in overall divestitures equation	Coefficient (p-value) on management change in successful divestitures equation[a]	Coefficient (p-value) on management change in unsuccessful divestitures equation[a]
Year 0	0.517 (0.075)	− 0.770 (0.292)	1.440 (0.0004)
Year − 1 to year 0	0.119 (0.353)	− 1.450 (0.023)	1.219 (0.001)
Year 0 to year 1	0.017 (0.479)	− 0.539 (0.130)	0.625 (0.068)
Year − 1 to year 1	− 0.169 (0.280)	− 0.975 (0.020)	0.659 (0.042)
Year 0 to year 2	0.074 (0.389)	− 0.491 (0.141)	0.661 (0.038)
Year − 1 to year 2	− 0.076 (0.381)	− 0.732 (0.025)	0.724 (0.022)
Year 0 to year 3	0.079 (0.372)	− 0.333 (0.154)	0.639 (0.038)
Year − 1 to year 3	− 0.052 (0.412)	− 0.618 (0.029)	0.733 (0.020)

Coefficients and one-tailed p-values are for the estimated impact of a management change on divestiture probabilities (β_1) from the following equation:

$$\log\left(\frac{\text{divestiture probability}}{1 - \text{divestiture probability}}\right)$$

$$= \alpha + \beta_1 \text{ dummy if management change} + \beta_2 \text{ dummy if related}$$

$$+ \beta_3 \text{ dummy if before 1982} + \beta_4 \text{ dummy if 1982–1985}$$

$$+ \beta_5 \text{ dummy if held less than 4 years} + \beta_6 \text{ dummy if held 4–8 years}$$

The measurement of the management change dummy variables varies across the rows of the table.

[a]Divested acquisitions are classified as 'unsuccessful' if there is a loss on sale or the *Wall Street Journal* indicates that the acquisition had not performed as well as the firm had hoped *ex ante*. All other acquisitions are classified as 'successful'. By this definition, 33 divested acquisitions are classified as unsuccessful, while 55 are classified as successful.

projects that are not in the shareholders' interest, we would expect the increase in divestiture rates to be made up primarily of acquisitions that were valued negatively at the time they were made. If, on the other hand, the reason for the increase is that acquiring managers are reluctant to divest acquisitions that might have appeared reasonable *ex ante* but turn out badly *ex post*, or that replacement managers want to take a 'bath' at the beginning of their terms, we would expect the increase in divestitures following management changes to be primarily made up of acquisitions that performed poorly *ex post*, but did not necessarily appear to be bad projects at the time they were made.[8]

To differentiate between these explanations, I split the sample based on the market's reaction to the acquisition at the time it was made and estimate the equation in the second column of Table 4 (predicting all divestitures) separately for acquisitions in which the acquiror's abnormal return at the time of the original acquisition is positive or zero, and for those acquisitions for which the abnormal return is negative. Cumulative abnormal returns are calculated from five trading days before the day of the initial *Wall Street Journal* announcement of the acquisitions until five days after the final bid. Returns are computed using parameters from a market model estimated from 300 to 61 trading days before the initial announcement.

The results indicate that most of the divested acquisitions associated with CEO changes are negatively valued by the market at the time they are acquired. When we restrict the sample to those acquisitions that are valued negatively by the market at the time they are made, the coefficient of 0.818 on the CEO change variable is positive and significantly different from zero at the 5% level. The estimated probability of divesting an acquisition which reduces share value when it is acquired rises from 11.0% to 21.9% if there is a CEO change. In contrast, for the subsample with positive abnormal returns at the time of the acquisition, the coefficient on the management change variable is very small and negative, indicating that there is virtually no effect of a management change on the probability of divesting an acquisition that originally increased the market value of the acquiring firm.

It would seem that most of the acquisitions that are divested following management changes are originally perceived by the market to have negative net present values, supporting the view that the agency problem is primarily at the time of the acquisition. However, these results should be viewed cautiously; while the coefficient for the negative abnormal-return subsample is significantly

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[8]*Ex ante* expectations and *ex post* performance will in general be correlated (see Kaplan and Weisbach, 1992, for evidence that they are correlated in this sample). However, the market's forecasting ability is not perfect and there are a number of cases in which acquisitions performed well despite a negative initial reaction and a number of other cases in which acquisitions performed badly despite a positive initial reaction.

different from zero, we cannot reject the cross-equation restriction that the coefficients on management changes are significantly different from each other at conventional levels. In addition, the results appear to be sensitive to the alternative measurement windows presented in Table 5. While the signs of the coefficients on the management change variables do vary with the sign of the acquiring date return, so that the coefficient is positive when the subsample of negative returns are used and is negative when the subsample of positive returns is used, none of these coefficients are significantly different from zero or one another. Thus, it appears to be relatively difficult to differentiate clearly between the alternative managerial models.

6.4. Are CEO retirements endogenous?

The literature has documented that poor firm performance tends to precede CEO turnover, suggesting that CEOs are fired for poor performance (Warner, Watts, and Wruck, 1988; Weisbach, 1988). In addition, voluntary restructurings, including asset sales, tend to follow poor performance (Brickley and Van Drunen, 1990; John, Lang, and Netter, 1992). It is possible that the econometric evidence presented above could merely reflect the endogeneity of turnover and be consistent with firms making optimal acquisition and divestiture decisions independent of the identity of management. In other words, it could be that firms always divest poorly performing divisions when it is apparent that keeping them is no longer value-maximizing. The relation estimated above could merely reflect that firms optimally fire managers when it is realized that their acquisitions do not fit well with the rest of the organization and should be sold.

To distinguish this explanation from the view that management changes actually cause changes in divestiture decisions, I rely on the institution of mandatory retirement at age 65. While not all firms have this policy, there is evidence that most firms do. First of all, the incidence of departures at or around age 65 is dramatically higher than at other ages. In my sample, departures at ages 64, 65 or 66 make up 40% (68 of 171) of all internally generated departures.[9] Secondly, Weisbach (1988) and Murphy and Zimmerman (1993) have documented that resignations at around age 65 are generally not preceded by poor performance, in contrast to other resignations. This evidence suggests that retirements at around age 65 are indeed 'mandatory' in that their incidence does not appear to be affected by performance.

To evaluate the extent to which my previous results reflect the endogeneity of resignations, I reestimate the equations using one variable for retirement age

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[9]The reason that I (and other authors) use ages 64, 65, and 66 rather than just age 65 is the quality of data available. *Forbes* compensation surveys provide a CEO's age (in years) at the time of publication. Thus, inferences about the CEO's age at resignation from these data are accurate only to within one year.

Table 6
Logit equations predicting divestitures as a function of age-65 retirements and other turnover

Sample consists of 2,174 firm-years between 1971 and 1989. Firm-years are constructed from a sample of 270 acquisitions of at least $100 million (in 1982 dollars) by 200 firms during the period 1971–1982. Firms are included for all years subsequent to acquisition until either the acquisition is divested or the firm is taken over by a third party. Asymptotic t-statistics are in parentheses. In brackets are predicted probabilities when the independent variable equals one and all other independent variables equal zero.

Dependent variable	All divestitures	Divestitures of unsuccessful acquisitions
Constant	(− 2.047	(− 3.299
	(− 9.39)	(− 9.03)
Dummy equal to 1 if the CEO changed at other than retirement age[b]	0.427	1.134
	(0.95)	(2.01)
	[0.165]	[0.102]
Dummy equal to 1 if the CEO changed at retirement age[c]	0.671	1.876
	(1.21)	(3.20)
	[0.201]	[0.194]
Dummy equal to 1 if a related acquisition	− 1.830	− 2.339
	(− 5.11)	(− 3.19)
	[0.020]	[0.004]
Dummy equal to 1 if before 1982	− 1.629	− 2.034
	(− 3.74)	(− 2.50)
	[0.25]	[0.005]
Dummy equal to 1 if 1982–1985	− 0.524	− 0.536
	(− 2.02)	(− 1.33)
	[0.071]	[0.021]
Dummy equal to 1 if held less than 4 years	− 1.238	− 1.234
	(− 2.54)	(− 1.42)
	[0.036]	[0.011]
Dummy equal to 1 if held 4–8 years	0.062	0.276
	(0.23)	(0.63)
	[0.121]	[0.046]
Predicted probability when all independent variables = 0	0.114	0.036
Log-likelihood	− 321.68	− 143.99

[a]Divested acquisitions are classified as 'unsuccessful' if there is a loss on sale or the *Wall Street Journal* indicates that the acquisition had not performed as well as the firm had hoped *ex ante*. All other acquisitions are classified as 'successful'. By this definition, 33 divested acquisitions are classified as unsuccessful, while 55 are classified as successful.

[b]This variable takes the value one if the CEO turned over in a given year and if the outgoing CEO was not 64, 65, or 66 in that year.

[c]This variable takes the value one if the CEO turned over in a given year and if the outgoing CEO was 64, 65, or 66 in that year.

(64, 65, and 66) departures and another variable for all other resignations. The results are presented in Table 6. The second column contains the equation including all divestitures as the dependent variable. The coefficient on the turnover variables are both positive and fairly large in magnitude, although neither is significantly different from zero. The coefficient on departures at other than retirement age is larger than the coefficient on retirement-age departures, but the difference between the coefficients is not large and they are not significantly different from each other. The third column estimates the probability of divesting an unsuccessful acquisition as a function of these variables. The coefficients on the two turnover variables are positive and significantly different from zero at conventional levels. The coefficient on the retirement age dummy variable is actually larger than the coefficient on the nonretirement age dummy, although the coefficients again are not significantly different from one another.

These results imply that sales of poorly performing acquisitions are just as prevalent following mandatory retirements as following other resignations. Some of the time, CEOs are fired and the acquisitions for which they are responsible are sold. Other times, the board does not fire the manager but waits until he retires at age 65 before selling his acquisitions. As such, these results suggest a view of mandatory retirement different from Lazear (1979). The institution of mandatory retirement gives the board, whose ability to replace a manager is sometimes quite restricted, more control on the firm. It makes sense to limit the term of a CEO who eventually could be powerful enough to block his own dismissal. In this way, if the CEO becomes too attached to a project that does not fit well with the rest of the corporation, it can be divested by his successor. The evidence presented here is consistent with the logic in Becker (1992), in that it appears that successors do reverse some of the bad decisions CEOs make.[10]

6.5. Other sources of variation in successors

It is often argued that one reason for choosing a CEO from outside the firm is to initiate a change in policy (see Parrino, 1992; Gilson and Vetsuypens, 1992). Given this view, one might expect to find a higher incidence of divestitures following appointments of outsiders than following appointments of insiders. In

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[10]While a formal model generating fixed-term contracts for this reason is beyond the scope of this paper, the following would seem to be necessary ingredients for such a model: 1) enough uncertainty so that a board cannot prespecify the investment projects that should be taken in advance and 2) a board of directors whose ability and willingness to replace a CEO decreases over time. In support of this second hypothesis are the examples in Mace (1971) that indicate that in time, the CEO usually chooses the new directors, who are likely to be loyal to him and less prone to dismiss him. In addition, Hermalin and Weisbach (1988) find that the percentage of outsiders on the board decreases over a CEO's tenure, presumably decreasing the board's vigilance.

my sample there are 21 cases of internally-appointed replacement CEOs who spent less than three years with their firms before becoming CEO. In none of these cases was the acquisition divested in the year of the appointment; one was divested (and had been profitable) in the year following the succession, while four were divested two years following the succession (three of the four were unprofitable). While the low number of observations makes any statistical inferences difficult, it appears that, if anything, divestiture probabilities decrease rather than increase when successors are appointed from the outside.

Similarly, if the divested acquisitions were originally acquired for managerial reasons, one might expect the new managers to be more reluctant to divest acquisitions if they were partially responsible for making the acquisition earlier in their career. To explore this possibility, I use proxy statements to determine if the successor CEO was on the board of directors at the time of the original acquisition. I then estimate equations similar to those in Table 6, using one variable for turnover when the replacement CEO was on the board at the time of the original acquisition and another variable for turnover where he was not on the board at that time. The results suggest that both variables have almost identical effects on divestiture probabilities. In the overall divestitures equation, the coefficients on the management-change variables are 0.551 for successors not on the board at the time of the acquisition and 0.485 for successors on the board at the time of the acquisition. Neither coefficient is significantly different from zero, nor are they significantly different from each other. In the equation predicting divestitures of unsuccessful acquisitions, the corresponding coefficients are 1.46 and 1.41. These coefficients are each significantly different from zero at the 1% level, but are not significantly different from each other. The results suggest that being on the board at the time a decision is made has no effect on subsequent actions regarding that decision and is consistent with the view that the CEO is the primary decision-maker for large acquisitions.

7. When divestitures coincide with management changes

To provide additional evidence on the reasons for acquisitions and divestitures, I examine in more detail the cases in which divestitures occur in the same year as management changes to evaluate the magnitudes of the losses involved with the divested acquisitions. In particular, I want to ensure that the divestitures that occur in the year of the management change are not profitable acquisitions somehow misclassified as unsuccessful, possibly because of accounting manipulation by incoming managers who seek to 'blame' their predecessors for a poor acquisition.

Table 7 provides some descriptive statistics on the ten cases in which a divestiture takes place during the same year as a management change. Of the ten divestitures, eight are classified as unsuccessful. Five of the cases were obviously

Table 7

Descriptive statistics on ten cases in which the CEO departs in the year of a divestiture

Acquiror/Target (*WSJ* announcement of acquisition)	Divestiture announcement in *WSJ*	CEO name and date *WSJ* announces departure	Gain or loss on sale	Reason for the divestiture cited by *Wall Street Journal*	Classification as 'successful' or 'unsuccessful'
Air Products & Chemicals/ Steams Roger (2/25/82)	2/25/86	Edward Donley 9/23/86	Negative (sold with other assets)	No reason given	Unsuccessful
Allegheny Ludlum/ Chemetron (9/2/77)	9/2/86	Robert Buckley 8/11/86	Positive (sold with other assets)	No reason given	Successful
Armco, Inc./ NN Corp. (8/21/80)	1/31/84	Harry Holiday 12/19/84	– $962 million (before taxes)	"Financial problems (from) ... continuing difficulties with insurance subsidiary." (*WSJ* 4/2/85)	Unsuccesful
Baker Oil Tools/ Reed Tool Co. (7/18/75)	3/18/87	Ernest Clark 4/3/87	– $48 million (before taxes)	"... sale ... was a provision of a Justice Department consent decree that Baker signed to overcome antitrust objections." (*WSJ* 3/18/87)	Unsuccessful
Exxon/ Reliance Electric (5/21/79)	12/12/86	Clifton Garvin 8/28/86	$270 million (after taxes)	"'It's been their albatross' ... 'Exxon could get much better returns by investing its money in its oil and gas businesses.'" (*WSJ* 12/12/86)	Unsuccessful

Mobil/Marcor (Montgomery Ward) (6/18/74)	5/7/85	Rawleigh Warner 5/10/85	− $925 million (after taxes)	"disappointing nine-year endeavor in retailing.... 'Mobil didn't understand the first thing about retailing.'" (WSJ 5/7/85)	Unsuccessful
National Distillers/ Indiana Group (10/30/78)	3/20/85	Drummond Bell 8/6/85	− $24.7 million (after taxes)	"National Distillers is 'concentrating on its primary business'... Indianapolis-based insurance unit was unprofitable in 1985." (WSJ 3/20/85)	Unsuccessful
United Technologies/ Mostek Corp. (8/28/79)	10/18/85	Harry Gray 9/24/85	− $546 million (before taxes)	"...close one troubled business... a move that wasn't entirely unexpected in view of Mostek's continuing losses...a slump in orders and continuing competition from Japanese companies." (WSJ 10/18/85)	Unsuccessful
Warner–Lambert/ Imed Corp. (6/8/82)	11/27/85	Ward Hagen 6/25/85	− $646 million (before taxes)	"...a disappointment for Warner-Lambert...a drag on the company's profit margins." (WSJ 11/27/85)	Unsuccessful
Xereox Corp./ WUI Inc. (1/19/79)	12/16/81	C. Peter McColough 9/30/81	$54 million (before taxes)	No reason given	Successful

very unprofitable for the acquirors: Armco/NN Corp., Exxon/Reliance Electric, Mobil/Marcor, United Technologies/Mostek, and Warner Lambert/Imed. All five were considered to be big mistakes by the *Wall Street Journal* as well as other business publications.[11] Four of the five lost over $500 million, and while Exxon had an accounting gain on the sale of Reliance Electric, it was generally considered an extremely poor investment by the both the press and analysts (*Wall Street Journal*, December 12, 1986; *Fortune*, April 30, 1984). Two other unsuccessful divestitures occurring in the year of a management change were Air Products/Stearns Roger and National Distillers/Indiana Group, both of which had a loss on sale, but for which the *Wall Street Journal* did not speculate on the reasons for the divestiture. The remaining unsuccessful divestiture, Baker Oil Tool's divestiture of Reed Tool Co., was ordered by the Justice Department for antitrust reasons.

Overall, the acquisitions divested in the year of the management change appear to have been particularly unprofitable. Given the highly public nature of the failure of these acquisitions, it seems unlikely that I measured an increase in divestitures of poorly-performing acquisitions around management changes only because of misclassification. All indications suggest that these acquisitions should not have been made, and that it is more than a coincidence that they were sold around the time of the management change.

8. Conclusion

Management changes are often in the public eye. However, their importance depends on the extent to which they lead to real changes in the firms in which they occur. This paper examines one area of change by documenting that the probability of selling a poorly-performing acquisition increases after a management change. Management changes that are initiated by the board and normal retirements at age 65 both lead to divestitures of poorly-performing assets. These results are consistent with a variety of managerial models of the investment process. They suggest that CEO turnover is important because it is part of the process of reversing managerially-motivated acquisitions.

It is likely that divestitures of poorly-performing acquisitions are symptomatic of other harder-to-observe, yet equally important, changes that also occur around the time of a management change. Personnel practices, marketing techniques, and general strategic approaches are among the many sorts of policies in which we might expect to find changes when a new CEO takes office.

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[11]See, for example, 'Sweeping Clean at Mostek' (*Business Week*, February 22, 1982, p. 460), 'Did Warner–Lambert Make a $468 Million Mistake?' (*Business Week*, November 21, 1983), 'Diversification Proves to be High-Stakes Game' (*National Underwriter*, August 10, 1985, pp. 16–17), or 'The Decase's Worst Mergers' (*Fortune*, April 30, 1984, pp. 262–270), containing Mobil/Marcor and Exxon/Reliance Electric on their list of the 'worst' mergers of the decade.

An open question for future research is the extent to which these other real changes tend to follow management turnover and how these changes affect overall corporate performance.

References

Asquith, Paul, Robert Gertner, and David Scharfstein, 1991, Anatomy of financial distress: An examination of junk bond issuers, Working paper (Massachusetts Institute of Technology, Cambridge, MA).

Becker, Gary, 1992, The problem is not what CEOs get – it's getting them to go, Business Week, March 2, 1992, p. 18.

Boot, Arnoud, 1992, Why hang on to losers? Divestitures and takeovers, Journal of Finance 47, 1401–1423.

Brickley, James and Leonard Van Drunen, 1990, Internal corporate restructuring: An empirical analysis, Journal of Accounting and Economics 12, 251–280.

Coughlan, Anne and Ronald Schmidt, 1985, Executive compensation, management turnover, and firm performance: An empirical investigation, Journal of Accounting and Economics 7, 43–66.

DeAngelo, Harry and Linda DeAngelo, 1989, Proxy contests and the governance of publicly held corporations, Journal of Financial Economics 23, 29–61.

DeAngelo, Linda, 1988, Managerial competition, information costs, and corporate governance: The use of accounting performance measures in proxy contests, Journal of Accounting and Economics 10, 3–36.

Dechow, Patricia and Richard Sloan, 1991, Executive incentives and the horizon problem, Journal of Accounting and Economics 14, 51–89.

Demsetz, Harold, 1983, The structure of ownership and the theory of the firm, Journal of Law and Economics 26, 375–390.

Denis, David and Diane Denis, 1994, Management turnover and firm performance, Working paper (Virginia Polytechnic Institute, Blacksburg, VA).

Dial, Jay and Kevin Murphy, 1994, Executive compensation and corporate strategy at General Dynamics, Journal of Financial Economics, forthcoming.

Elliot, John and Wayne Shaw, 1988, Write-offs as accounting procedures to manage perceptions, Journal of Accounting Research 26, Suppl., 91–119.

Furtado, Eugene and Vijay Karan, 1990, Causes, consequences, and shareholder wealth effects of management turnover: A review of the empirical evidence, Financial Management 19, 60–75.

Gilson, Stuart, 1989, Management turnover and financial distress, Journal of Financial Economics 25, 241–262.

Gilson, Stuart, 1990, Bankruptcy, boards, banks, and blockholders: Evidence on changes in corporate ownership and control when firms default, Journal of Financial Economics 27, 355–389.

Gilson, Stuart and Michael Vetsuypens, 1993, CEO compensation in financially distressed firms: An empirical analysis, Journal of Finance 48, 425–458.

Hausman, Jerry and William Taylor, 1981, Panel data and unobservable individual effects, Econometrica 46, 1377–1398.

Hermalin, Benjamin and Michael Weisbach, 1988, The determinants of board composition, Rand Journal of Economics 19, 589–606.

Hirshleifer, David, 1993, Managerial reputation and corporate investment decisions, Financial Management 22, 145–160.

Holmes, Thomas and James Schmitz, 1992, On the turnover of business firms and business managers, Working paper (University of Wisconsin, Madison, WI).

Hsiao, C., 1986, Analysis of panel data (Cambridge University Press, Cambridge).

Jensen, Michael, 1986, Agency costs of free cash flow, corporate finance, and takeovers, American Economic Review 76, 323–329.

Jensen, Michael, 1989, The eclipse of the public corporation, Harvard Business Review 67, 61–74.

Jensen, Michael and Kevin Murphy, 1990, Performance pay and top-management incentives, Journal of Political Economy 98, 225–264.

John, Kose, Larry Lang, and Jeffry Netter, 1992, The voluntary restructuring of large firms in response to performance decline, Journal of Finance 47, 891–918.

Kanodia, Chandra, Robert Bushman, and John Dickhaut, 1989, Escalation errors and the sunk cost effect: An explanation based on reputation and information asymmetries, Journal of Accounting Research 27, 59–77.

Kaplan, Steven and Michael Weisbach, 1992, The success of acquisitions: Evidence from divestitures, Journal of Finance 47, 107–138.

Lang, Larry, René Stulz, and Ralph Walkling, 1991, A test of the free cash flow hypothesis: The case of bidder returns, Journal of Financial Economics 29, 315–336.

Lazear, Edward, 1979, Why is there mandatory retirement?, Journal of Political Economy 87, 1261–1284.

Lehn, Kenneth and Annette Poulsen, 1989, Free cash flow and stockholder gains in going private transactions, Journal of Finance 44, 771–789.

Mace, Miles, 1971, Directors: Myth and reality (Harvard Business School Press, Boston, MA).

Marris, Robin, 1963, A model of the managerial enterprise, Quarterly Journal of Economics 77, 110–120.

May, Don, 1992, CEO motive, opportunity, and the firm's investment decisions, Working paper (University of Chicago, Chicago, IL).

Morck, Randall, Andrei Shleifer, and Robert Vishny, 1990, Do managerial motives drive bad acquisitions?, Journal of Finance 45, 31–48.

Murphy, Kevin and Jerold Zimmerman, 1993, Financial performance surrounding CEO turnover, Journal of Accounting and Economics 16, 273–316.

Parrino, Robert, 1992, CEO turnover and outside succession: A cross-sectional analysis, Working paper (University of Texas, Austin, TX).

Porter, Michael, 1987, From competitive advantage to corporate strategy, Harvard Business Review, 43–59.

Pourciau, Susan, 1993, Earnings management and non-routine executive changes, Journal of Accounting and Economics 16, 317–336.

Ravenscraft, David and Frederick Scherer, 1987, Mergers, selloffs, and economic efficiency (Brookings Institution, Washington, DC).

Roll, Richard, 1986, The hubris hypothesis of corporate takeovers, Journal of Business 59, 197–216.

Seyhun, Nejat, 1990, Do bidder managers knowingly pay too much for target firms?, Journal of Business 63, 439–464.

Shleifer, Andrei and Robert Vishny, 1989, Managerial entrenchment: The case of firm-specific assets, Journal of Financial Economics 25, 123–139.

Shleifer, Andrei and Robert Vishny, 1990, The takeover wave of the 1990's, Science 249, 745–749.

Vancil, Richard, 1987, Passing the baton: Managing the process of CEO succession (Harvard Business School Press, Boston, MA).

Warner, Jerold, Ross Watts, and Karen Wruck, 1988, Stock prices and top management changes, Journal of Financial Economics 20, 461–492.

Weisbach, Michael, 1988, Outside directors and CEO turnover, Journal of Financial Economics 20, 431–460.

Williamson, Oliver, 1964, The economics of discretionary behavior: Managerial objectives in a theory of the firm (Prentice-Hall, Englewood Cliffs, NJ).