

# External Management Succession, Human Capital, and Firm Performance: An Integrative Analysis

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Economic analysis of human capital leads to a somewhat different question than that addressed by other management research on external succession: do differences between external successors in the transferability of their human capital affect firm performance, and if so, how? By comparing external successors that have within-industry and related-industry skills, we find that successors with less transferable (related-industry) skills have greater variance of firm performance. Our analysis provides an example of the benefits of integrating economic concepts with empirical research in competitive strategy, on a topic of central concern in the traditional strategic management literature, namely, top executives. Copyright © 2003 John Wiley & Sons, Ltd.

## INTRODUCTION

When considering the question of the integration of economics and strategic management, it is important to examine the issue not only of theoretical integration, but also of empirical integration. Researchers in strategic management (or competitive strategy) have traditionally viewed their area of inquiry as, first and foremost, empirical in nature, due to the importance of real world business phenomena. Although strategic management research in fact includes many important theoretical contributions, empirical research remains a large and prominent component of academic work. Among the central concerns of the traditional literature in strategic management is the role of top executives. This traditional concern with the top executive goes back at least as far as the seminal work of Chester

Barnard (1938), and more recently plays an important role in work such as that of Andrews (1987). If we are to ask what benefit the integration of economic analysis might or might not provide for empirical research in competitive strategy (and *vice versa*), an analysis of the impact of top management on organizational performance is of prime concern.

In the field of strategic management, top managers have traditionally been viewed as making a positive contribution to the firm (see, for example, Andrews, 1987; Katz, 1974). Economic analyses, in contrast, often focus on the importance of monitoring and controlling managers who otherwise might underperform. These contrasting approaches and 'world views' lead to an obvious question regarding whether economics can be integrated with the more traditional and favorable strategic management approach to top executives. Our answer is a resounding 'yes.' For example, the managerial rents model of Castanias and Helfat (1991, 1992) draws on human capital theory (Becker, 1964) from economics, and analyzes top

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management as a critical resource that may create positive value for the firm. By integrating economic logic with strategic management issues, in a manner not constrained by traditional economic research questions and points of view, the managerial rents model provides an example of rigorous integration of economics and strategic management. In addition, the model is highly applicable to practical issues that firms face.

With regard to top management, one of the most important practical issues that firms face is whom to hire as CEO. A significant minority of large corporations hires chief executive officers (CEOs) from outside of the firm, and the prevalence of external succession has been increasing over time. Prior management research has investigated influences that lead a firm to hire an external rather than an internal successor, and has analyzed subsequent differences in firm performance (e.g. Boeker and Goodstein, 1993; Cannella and Lubatkin, 1993; Dalton and Kesner, 1985; Friedman and Singh, 1989; Reinganum, 1985; Zajac, 1990). The managerial rents model, however, leads us to ask a somewhat different question than other management research on external succession has addressed. In particular, the analysis of human capital in the model, which is derived from economics, directs attention to the extent of transferability of managerial skills between firms. We ask: do differences between external successors in the transferability of their skills affect subsequent firm performance, and if so, how?

For purposes of this study, we define managerial skills (and human capital) as a set of abilities, expertise, and knowledge that managers acquire in part from previous work experience. We construct a hierarchy of managerial human capital that reflects the degree of skill transferability between firms, because only those skills that are transferable between firms can have an impact on the performance of a firm that hires a CEO externally. Our analysis of human capital (Becker, 1964) utilizes the managerial rents model (Castanias and Helfat, 1991, 1992) to distinguish between firm-specific, industry-specific, and generic (i.e., non-specific) skills of CEOs. To this we add a new dimension of related-industry 'competitive cycle' skills, drawing on Williams' (1992) taxonomy of markets. This competitive cycle framework, like the managerial rents model that we employ, also integrates economics and resource-based analysis with traditional concerns of strategic management

(in this case, regarding sustained competitive advantage). After incorporating related-industry competitive cycle skills into the managerial rents model, the resulting categories of managerial skills—firm-specific, industry-specific, related-industry, and generic—reflect differing levels of transferability between firms, from most easily transferable between firms (generic skills) to least easily transferable (firm-specific skills).

To our knowledge, this is one of the first empirical studies to evaluate the impact of differences between skills sets of external successors on firm performance. Thus, our study provides an example of how integrating economic logic with strategic management can lead us to ask and answer new and different questions about important management issues. In our analysis, we distinguish between the transferable skills of external CEOs appointed from within the same industry, from a related industry (in the same competitive cycle), and from an unrelated industry. We then evaluate whether the degree of transferability of external successor skills affects the mean as well as the variance of firm performance over time. Here again, integrating an approach from economics (the analysis of risk) leads us to ask an empirical question that is of concern to the firm, but which the strategic management literature on CEO succession has left largely unexplored. Additionally, in our analysis of the performance risks associated with differences in the transferability of CEO skills, we go beyond traditional analyses in both economics and strategic management to develop new hypotheses specific to the setting of external succession.

Throughout this study, we draw attention to ways in which economics complements our traditional understanding of management issues. First, in order to situate our study in the context of traditional strategic management literature, we discuss the relationship of CEO skills to the decision by the Board of Directors to hire a CEO, and an external CEO in particular. Then we explain the classification of CEO human capital used in this study, with particular attention to the new dimension of related-industry skills. Subsequently, we develop testable hypotheses, and describe the data and empirical methodology. The particular methodology that we employ, namely, a matched-pair statistical design, has been more commonly employed in economics and in the behavioral sciences than in strategic management

(see, for e.g., Lev and Mandelker, 1972; Teece, 1981; Helfat and Teece, 1987; Thorne, 1989). Here again, we bring together economics and strategic management. Then we present our findings, and discuss the results, which have important practical implications for Boards of Directors when hiring external successors. Finally, a concluding section reflects back on what we learned by integrating economics and strategic management in this study. We also discuss implications of the integrative approach used here for both theoretical and empirical research in strategic management more generally. We suggest that the integration of economic analysis with competitive strategy can lead to new questions, empirical tests, research findings, and practical implications for firms.

### THE SUCCESSION DECISION AND CEO SKILLS

Much traditional management research suggests the importance of the characteristics of the CEO to the strategy and performance of the firm (e.g. Finkelstein and Hambrick, 1996; Hambrick and Mason, 1984; Lubatkin *et al.*, 1989). Conger *et al.* (1998) report that boards of directors consider succession planning and the selection of the new CEO to be one of their most important duties. Researchers such as Vancil (1987) and Finkelstein and Hambrick (1996) have suggested that, as part of the succession process, the Board should analyze prospective market opportunities and threats in each major line of business, and make an assessment of the key management skills required to successfully lead the firm in light of the future needs of the firm. Vancil (1987) terms this assessment the 'strategic mandate' of the new CEO. The Board then should seek to match the skills of each candidate to the forward-looking skill needs of the corporation (Vancil, 1987). As argued by Pfeffer and Salancik (1978, p. 236), 'those in power should tend to select individuals who are capable of coping with the critical problems facing the organization.'

In recent years, a good deal of management research has also emphasized the social and political factors involved in the selection of a new CEO by the board of directors (e.g. Boeker and Goodstein, 1993). This socio-political approach, while clearly important, has tended to

obscure long-standing concerns about the fit of the new CEO with the needs of the firm. The economic logic of the managerial rents model, by focusing on the human capital that managers contribute to the firm, provides a helpful counterbalance to the recent emphasis on power and politics in the succession process. We next briefly provide an overview of this process.

As the time for executive succession draws near, the Board generally considers only a few candidates seriously (Cannella and Lubatkin, 1993; Vancil, 1987; Zajac, 1990). Directors usually have more complete information about the skills and personalities of internal candidates (Zajac, 1990), who are senior executives in the firm with whom the Board has had prior contact, often as fellow members of the Board. The current CEO provides additional input in terms of the strengths and weaknesses of these candidates, and often acts as in partnership with the Board in the succession process (Vancil, 1987).

The simplest succession process occurs in a relay process, where the Board promotes an heir apparent that the firm has groomed for succession, such as a chief operating officer (Vancil, 1987). A more complex process occurs when the Board identifies more than one internal candidate with high potential as the next CEO, and may previously have set up a 'horserace' among the candidates. In a diversified firm, the candidates frequently come from different lines of business. In firms with more than one internal candidate, a typical selection process involves interviews with the candidates and with key stakeholders, such as large customers, current and former Board members, the senior management team, and key outside advisors.

A third process occurs when the Board has concerns about internal candidates. For example, if poor firm performance stems from poor performance of current management, the Board may be more open to the need to search externally for a CEO (Boeker, 1989; Boeker and Goodstein, 1993; Parrino, 1997). As another example, a firm may have good but not exceptional internal candidates, and therefore the Board may feel it necessary to search externally. A Board also may desire a change from internal management when the firm's external environment is changing (e.g. due to deregulation, see Hambrick and Finkelstein, 1987) or the firm has recently experienced ethical or criminal violations by top management.



Additionally, in firms that are too small to have a well developed internal managerial labor market, the Board may find no internal candidates with the skills needed to lead the company (Dalton and Kesner, 1983; Furtado and Rozeff, 1987). In all of these instances, the Board may consider external candidates solely or in addition to internal candidates (Vancil, 1987).

### External Successors

Much prior management research suggests that external successors may have a greater ability to instigate change, because they are not wedded to current ways of operating and managing within the firm (see e.g. Cannella and Lubatkin, 1993; Guest, 1962; among many, many other studies). Research on organizational learning also suggests that because leaders from outside of the organization have different backgrounds from incumbent management, external successors are likely to search for new organizational routines (Newman, 1999). Similarly, Hambrick *et al.* (1993) note that firms that hire CEOs externally may perceive insiders as overly committed to the *status quo*.

In searching for an external successor, the Board may consider candidates either from within or outside of the industries in which the hiring firm participates. Firms in some industries may benefit from managerial knowledge of unique and complex industries, such as banking or hospitals (Moskowitz, 1996). Boards also may search more widely if the current industry has a limited number of viable candidates or if the firm desires a change from 'industry recipes' Spender (1989) that are perceived to be detrimental to future firm performance.

With regard to the matching of the skills of external candidates to firm needs, economic logic regarding information asymmetries merits consideration. In particular, the Board faces greater difficulties in acquiring information about external candidates, relative to an internal succession process (Furtado and Rozeff, 1987; Harris and Helfat, 1997; Zajac, 1990). An external search for a CEO generally takes more time in order to locate suitable candidates and to gather information about the skills of candidates, perhaps including the use of an executive search firm. Even after investing in this information gathering activity, the Board still may have less information about external than internal candidates.

Similarly, with regard to external candidates as a group, the Board may have less good information about the skills of candidates from outside of the industry than about candidates from within the hiring firm's industry. Boards frequently have comparative data used to benchmark performance of firms within an industry, and have a large amount of information about executive talent for the best managed units in the industry. For external candidates from outside of the hiring firm's industry, however, Boards do not have access to as good information about talent levels or about the fit between the skills of potential candidates and the needs of the firm.

In summary, the match between successor skills and the future needs of the corporation is of critical importance to the success of the firm. Finkelstein and Hambrick (1996) suggest that with each succession, a firm 'refits' CEO competencies to firm needs, which may have shifted since the prior succession. An outside researcher, however, cannot directly observe the Board's decision process. Indeed, the outside observer does not even have access to the short list of serious candidates. But we can obtain information about the backgrounds and work-related experience of external successors once chosen, indicative of managerial human capital. We also can track the subsequent performance of the hiring firm, as an indicator of the outcome of the match between the skills of the CEO and firm needs.

Research has yet to address the question of how differences in the skills of external successors affect firm performance. The human capital approach to CEO skills can help to address this issue of skill and performance differences, since as we next explain, the approach focuses on the differential transferability of skills between jobs. Here is an instance where a model in strategic management that incorporates economic logic, the managerial rents model in this case, pushes us to ask and empirically try to answer a question regarding an important management issue.

### TRANSFERABLE SKILLS

Managers acquire knowledge, develop expertise, and perfect their abilities in part through prior work experience. Although books and other sources of information can impart knowledge

relevant to managerial tasks, effective management also involves learning-by-doing and requires practice (Mintzberg, 1973). Thus, an important portion of the transferable skills that an external successor brings to a new firm stems from the executive's prior work experience.

### Managerial Rents and Transferable Skills

Human capital theory (Becker, 1964) categorizes learned skills, and human capital more generally, in a manner that reflects the degree of transferability of human capital between firms. Becker's analysis dealt with general versus specific training for a job.<sup>1</sup> General training increases the marginal productivity of workers by exactly the same amount in the firm providing the training as in other firms. At the other end of the spectrum, completely specific training has no effect on the productivity of workers that would be useful in other firms. Much on-the-job training falls somewhere in between these two extremes by increasing productivity by different amounts in firms providing the training and in other firms. Becker (1964) gives the example of a doctor trained (interned) at one hospital. With the exception of rules and procedures specific to individual hospitals, most of the doctor's training readily transfers within the industry. These skills are useful at other hospitals, but do not transfer to other industries, such as steel or aircraft.

Castanias and Helfat (1991, 1992) expand upon Becker's (1964) theory with reference to chief executive officers. Their managerial rents model characterizes CEOs as firm resources that possess varying qualities and quantities of generic (or general), industry-specific, and firm-specific skills. Castanias and Helfat (1991, 1992) also note that these skills nest in a hierarchy from most to least transferable between firms. Generic skills have the greatest mobility, since they have applicability across industries and firms.

Industry-specific skills have less mobility, since an individual can transfer them within an industry but not across industries. In a relatively homogeneous industry (that is, firms in the industry have similar customers, products, and capabilities), intra-industry appointments are more likely due to the high value of industry-specific skills to other firms in the industry (see, e.g. Parrino, 1997). Thus, it is not surprising to see a senior executive of a regional bank in North Carolina appointed as

the new CEO of a regional bank in South Carolina, for example. Even when an industry is defined more broadly than regional banking in one area of the US, some industry-specific knowledge will transfer when, for example, a senior executive of Ford is appointed as CEO at Chrysler or a senior executive at Paramount Films is appointed as CEO at Walt Disney.

Finally, firm-specific human capital, involving an in-depth understanding of a company's history, personnel, culture, and internal strengths and weaknesses, has limited value outside of the firm. With regard to external successors, their industry-specific and generic skills potentially have value to the hiring firm, but firm-specific skills do not, except as information useful in benchmarking or conducting competitive analysis.

### Related-Industry Transferable Skills

In addition to the foregoing three categories of skills, our observation of external successions leads us to add a fourth category—related-industry skills. For example, consider the fact that Alcoa's CEO, an external successor, previously held a top executive position at International Paper, and the new CEO at International Paper was in turn selected from a top post at DuPont. The skills required to manage these firms have a good deal in common—they involve the ability to manage high-volume production processes and sales of commodity products in mature, cyclical businesses. These skills are not generic, however, in that they would not necessarily transfer well to all industries, such as those that sell highly differentiated consumer products in niche markets. In a similar spirit, in classifying CEOs by degree of 'outsiderness', Finkelstein and Hambrick (1996, p. 184) note that some external successors come from related industries, rather than from the same industries in which they were previously employed or from unrelated industries.<sup>2</sup>

In order to make the idea of related-industry managerial skills more precise, we require a taxonomy of industries that takes into account the types of firm resources that must be managed and the competitive conditions that top managers face. The literature on diversification uses the term 'related' to refer to similarities of businesses within a company. In his pioneering study, Rumelt (1974, p. 29) states that 'businesses are related to one another when a common skill, resource, market or

purpose applies to each.' Although Rumelt (1974) used his best judgment about all of these factors to classify the companies in his sample into various portfolios of businesses, subsequent studies have most frequently classified relatedness in diversification based on concentric measures of SIC (Standard Industrial Classification) product categories see e.g. (Montgomery, 1994 for a review). Using these measures, businesses in different 2-digit SIC codes (the broadest product categories) are considered essentially unrelated to one another.

From the managerial skills perspective, however, the use of product-based SIC codes to define industry relatedness creates fundamental problems. Consider the previous example of Alcoa and International Paper. These companies' products are classified as completely different two-digit SIC codes, yet as described above, the managerial skills need to manage both the inputs and sale of the outputs have a good deal in common. Since an SIC code measure of relatedness does not adequately capture relatedness of managerial resources across industries, we examined other possible industry classifications.

In a review of the literature, Grant (1998) points to a few main classifications of industries according to: stages of the product life-cycle, strategic environment (Boston Consulting Group matrix), and competitive cycles (Williams, 1992).<sup>3</sup> Of these three classifications, only the Williams (1992) taxonomy directly uses types of firm resources, as well as competitive conditions and consumer needs, in categorizing industries. As indicated in the traditional strategic management literature, the job of the chief executive entails managing company resources effectively in the context of the external environment (Andrews, 1987). We therefore infer that CEOs managing similar resources in similar markets must require similar related-industry skills. Williams' (1992) competitive cycle classification of markets thus provides a promising taxonomy that we can use to categorize managerial work experience that is transferable beyond a single industry to related industries.

#### Related Industries and Competitive Cycles

Williams (1992) distinguishes between fast-cycle, standard-cycle, and slow-cycle markets, based on the speed of erosion of firm competitive advantage as products are copied or rendered obsolete. The

Williams model defines each competitive cycle according to common types of competitive conditions, consumer needs, and company resources and capabilities that are linked to the sustainability of competitive advantage. The greatest sustainability of competitive advantage occurs in slow-cycle markets, characterized by resources and capabilities that are durable over long time periods. For example, products and services that benefit from local monopolies often rely on capabilities and resources that are difficult for others to replicate, due to strong isolating mechanisms (Rumelt, 1984) such as superior geographic location, long-term buyer-supplier relationships, or strong intellectual property rights. In addition, governmental policies (e.g. patent policy or market entry regulation) may promote and help to sustain local monopoly advantages for firms in slow-cycle markets, as well as handicap new entrants. Slow-cycle capabilities create a dynamic lock-in that, once established, is extremely difficult to displace by rivals. Examples of firms in slow-cycle markets include those with strong intellectual property positions, such as Microsoft in personal computer operating systems and prescription drug companies.

Unlike slow-cycle markets, fast-cycle markets have short product development cycles and no product sustains first-mover advantage for long. Companies operating in these markets face the highest resource and product imitation pressures. Maintaining competitive advantage requires a never-ending barrage of new products. Important firm capabilities and resources for continued competitive advantage include rapid product development capabilities and the ability to get new products to market quickly. Examples of fast-cycle markets include semiconductors, in which firms rapidly introduce new chips that replace old chips, and the fashion industry, in which firms also face a high velocity of new product introduction and replacement.

Lastly, standard-cycle markets are mass market and market share oriented. In standard-cycle markets, the benefits of scale help firms to sustain competitive advantage. Rather than profiting from local monopoly (slow-cycle markets) or continual new product introduction (fast-cycle markets), firms in standard-cycle markets utilize manufacturing and distribution processes standardized for production at high volume with tight cost control, supported by aggressive advertising. Important firm resources and capabilities include efficient,



low-cost, large-scale production processes and marketing and advertising to build brand loyalty. Additionally, the large size of major firms in each market tends to drive out smaller players (except in market niches), often resulting in oligopoly markets. Examples of these markets include automobiles, fast-food chains, and packaged goods.

### Classification of Transferable Managerial Skills

With regard to managerial skills, we would expect businesses in different competitive cycles to require different types of skills. When a manager runs a particular business, he or she learns not only about managing in that firm and in the associated industry, but also about managing in the associated competitive cycle. Slow-cycle managers must nurture their protected markets, which often involves building stable long-term relationships with buyers and suppliers based upon close personal contact. Standard-cycle managers must learn to take full advantage of economies of scale and scope, to build brand loyalty, and to know when and how to best build market share. Fast-cycle managers must be skilled at market timing and speed to market; they must be able to extract profits quickly (before they erode), and to understand the shifting channels of distribution and the new ideas being generated.

We note that competitive cycles imply a degree of managerial skill transferability between firms that falls in between industry-specific and generic skills. As a result, we can graft Williams' (1992) taxonomy of industries onto the managerial rents model to produce a more fine-grained hierarchy of managerial human capital. As Figure 1 shows, managerial skills can be ranked from most to least specific: (1) firm-specific skills, (2) industry-specific

skills, (3) related-industry competitive cycle skills, (4) generic skills.<sup>4</sup> In terms of the degree of transferability of skills, the ranking is the mirror image of specificity, with firm-specific skills being the least transferable and so on, up to generic skills as most transferable. Internal CEOs possess all four types of skills. External successors can transfer only limited firm-specific knowledge from their old firm, useful in benchmarking and competitive analysis. External successors from within the same industry possess transferable industry-specific, competitive cycle and generic skills, whereas external successors without industry experience can transfer generic skills and may or may not also have related-industry skills.

Using this categorization of managerial skills, a researcher can infer information about the skills from publicly available data on executives' work experience. Because this is a nested hierarchy of skills, an executive that switches firms within the same industry presumably possesses not only industry-specific skills, but also related-industry (competitive cycle) and generic skills applicable to the new job. An executive that switches industries brings generic skills to the new job, and may or may not bring related-industry skills as well, depending on whether the CEO has prior work experience in the same competitive cycle as the businesses of the hiring firm. Because the transferability of firm-specific skills is relatively limited, we do not analyze it in this study.

This categorization of managerial skills is informed by both economics and traditional strategic management concerns. This classification of skills also means that, in order to apply the framework empirically, it is necessary to collect more detailed data about executives' work experience than is easily available from sources such as the *Business Week* or *Forbes* annual compensation



Figure 1. Transferability/specificity of CEO human capital.

surveys. These surveys, for example, indicate only CEO tenure in the job and at the firm, and functional area skills (which often are classified imprecisely).<sup>5</sup> By collecting more fine-grained data about managerial human capital, we can ask and answer more fine-grained questions about the performance implications of differences between managers in the transferability of their human capital. As we next explain, the setting of external CEO succession enables us to address some of these issues.

## IMPLICATIONS FOR FIRM PERFORMANCE

In matching external successor skills to firm needs, the Board of Directors essentially must make a prediction about the level of firm performance as a result of the succession. Additionally, economic logic suggests that risk accompanies return. The Board therefore also must consider the risk that future firm performance may be worse or better than expected. To capture both aspects, our analysis tests hypotheses about the level and the variance of profitability (to capture the risk that firm performance differs from that expected).

### Level of Firm Performance

With regard to the level of firm performance for external successors with different transferable skills, prior research suggests three alternative predictions, as next explained. These predictions have yet to be tested, since research on succession generally has not dealt with differences between external successors in their human capital (for exceptions, see Boeker, 1997; Harris and Helfat, 1997).

The first prediction contained in the literature is related to the proposition that external successors benefit the firm by providing a fresh perspective, particularly when a firm has performed poorly or has future needs that involve a major departure from the past.<sup>6</sup> Researchers have argued that internal successors have strong allegiance to established ways of doing things and thus are less able to instigate and guide change (e.g. Hambrick *et al.* 1993). Moreover, Geletkanycz and Hambrick (1997, p. 659) argue that external ties of executives (e.g. through board directorships) 'to entities outside of the industry impart more novel infor-

mation and exposure to diverse profiles and practices' than do ties within the industry. Extension of this logic to external succession suggests that when firms hire external successors primarily to gain a fresh perspective, the less industry-specific experience possessed by the CEO the better (Harris and Helfat, 1997). Therefore, in the hierarchy of industry-specific, related-industry, and generic transferable skills, the less full complement of these skills that an external successor possesses, the better will be the level of firm performance.

A second prediction that is implicit but not well developed in the literature on CEO succession reflects a contrary argument that firms may need as full a complement of CEO skills as possible when hiring external successors. As noted in our earlier discussion of the succession planning process, the Board may search externally when a firm lacks a well-developed internal managerial labor market. For example, research has shown that as firm size increases, the incidence of external succession decreases (Dalton and Kesner, 1983; Furtado and Rozeff, 1987). That is, firm size may affect the ability to find a CEO internally that has a full complement of top management skills. When lack of a well-developed internal labor market prompts the Board to search externally, the Board may seek the largest possible set of transferable skills in an external successor.

The divergence in the prior two predictions from the literature occurs in part because firms may hire CEOs externally for different reasons. The first prediction reflects a situation where the Board desires a fresh perspective and therefore a less full complement of transferable skills. In the second instance, an external search is motivated by the lack of a well-developed internal managerial labor market rather than the need for major strategic change, and the Board may desire as full a complement of transferable skills as possible.

These contrasting predictions suggest a third prediction that is also consistent with the management literature on the matching of CEO skills to firm needs as part of the succession planning process (e.g. Finkelstein and Hambrick, 1996; Pfeffer and Salancik, 1978; Vancil, 1987). When firms differ in their needs for CEO skills, they may hire externally for different reasons. If Boards of Directors of firms with different needs are equally effective in matching the skills of new CEOs to future firm needs, we may observe no differences in



firm performance between external successors that have different sets of transferable skills. That is, different types of external successors may perform equally well if their skills are equally well matched to firm needs. As a result, the average level of firm performance for external successors that possess industry, related-industry, and generic skills may not differ from the performance of external successors with related-industry and generic skills only.

As a refinement to this argument regarding lack of performance differences, we can take into account not only the types of transferable skills, as analyzed thus far, but also the quality of the external candidates' transferable skills. For example, consider the situation where the Board of Directors hires externally because internal candidates do not have a full complement of managerial skills. If an external successor from outside of the industry has above-average transferable related-industry and generic skills that make up for the lack of industry-specific skills, then the Board may hire from outside of the industry because on balance it expects the best performance from that particular candidate. More generally, if Boards match the skills of external successors to firm needs, firm performance may not differ according to the complement of transferable skills that external successors bring with them.

In what follows, we test the first two predictions from the literature, since they have clear testable implications. Lack of support for both of these hypotheses would provide some, but obviously not conclusive, evidence in favor of the third prediction. The two hypotheses that we test are as follows:

*H1a:* The average level of firm performance is least when external successors have a full complement of transferable skills, namely successors that have industry-specific, related-industry, and generic skills.

*H1b:* The average level of firm performance is greatest when external successors have a full complement of transferable skills, namely successors that have industry-specific, related-industry, and generic skills.

In testing the foregoing hypotheses, we compare firm performance between external successors that possess all three types of transferable skills (generic, related-industry, and industry-specific) and external successors that possess only related-industry

plus generic skills. We do not further test for differences between successors that have only generic skills and successors that also have related-industry skills, because it turns out that very few of the external successors in our sample have solely generic skills.

### Variance of Firm Performance

In addition to the level of firm performance subsequent to external succession, performance may differ positively or negatively from the mean. Cannella and Lubatkin (1993) note that most research on executive succession examines only the level of return. Their study examines the variance of firm returns prior to succession. Our study is one of the first to analyze the variance of firm returns subsequent to succession.

At least two factors related to transferable skills of external successors may affect the variance of post-succession firm performance. First, as noted earlier, Boards generally have less information about successors that lack industry experience (Furtado and Rozeff, 1987; Zajac, 1990; Harris and Helfat, 1997). As a result, Boards cannot as precisely match the skills of these CEOs to the forward looking needs of firms. Firm performance therefore will have greater variance for external successors that have only generic and competitive cycle skills (from outside of the industry) than for external successors that also have industry-specific skills, all else equal.<sup>7</sup>

Secondly, if external successors bring a fresh perspective to the firms that hire them, those successors with the freshest perspective, e.g., that have the fewest transferable skills, may seek the greatest amount of organizational change. The impact of large changes such as major restructurings may be less predictable, and therefore may produce greater variability of returns, than a strategy that deviates less from the firm's current approach.

The foregoing arguments regarding information about types of skills and the nature of the skills lead to the following hypothesis:

*H2:* The variance of firm performance for external successors that have a less full complement of transferable skills (generic and related-industry skills only) exceeds the variance of firm performance for external successors that also have industry-specific skills and work experience.

In the next sections, we describe our measure of firm performance, the sample of external successors, our data on their prior work experience, and the classification of their transferable skills based on these data. Then we describe our empirical methodology and report our findings.

### MEASURE OF FIRM PERFORMANCE

For each external succession in our sample, we use the following measure of firm performance:

$$\text{PERF} = (\text{Post-succession hiring firm ROA} \\ - \text{Pre-succession hiring firm ROA}) \\ - (\text{Post-succession control ROA} \\ - \text{Pre-succession control ROA}).$$

This measure equals the difference in return on assets (ROA) of the hiring firm before and after succession, less the difference in return on assets during the same years for a set of control firms with internal CEOs. For each external succession, the control firms have similar businesses, firm size, and return on assets to the hiring firm prior to the external succession. This formula can be rewritten as follows:

$$\text{PERF} = (\text{Post-succession hiring firm ROA} \\ - \text{Post-succession control ROA}) \\ - (\text{Pre-succession hiring firm ROA} \\ - \text{Pre-succession control ROA}).$$

As this arithmetic reformulation shows, the PERF measure is an industry and size adjusted measure of post-succession profitability that also controls for the prior adjusted performance of the hiring firm.

This performance measure reflects a statistical design that works particularly well for small samples. Because external succession occurs infrequently, we sample on the dependent variable.<sup>8</sup> Although the relative infrequency of external succession results in a small sample of successors, well established statistical procedures enable an analysis of small samples in a manner that also controls for factors other than the phenomenon of interest. The methodology utilizes a matched pair design that has been employed in a number of studies in economics (e.g. Lev and Mandelker, 1972; Teece, 1981; Helfat and Teece, 1987) and is

common in the behavioral sciences (see for example, Thorne, 1989).

Based on this matched pair statistical design, we use control firms matched as closely as possible to each hiring firm on a number of relevant dimensions that might affect firm performance other than the transferable skills of successors. In a subsequent section dealing with the control firms, we explain the rationale for selecting control firms on the basis of industries of operation, firm size, and returns prior to external succession. But first we discuss other aspects of the performance measure.

Return on assets (ROA) is computed as pre-tax operating income divided by total firm assets. The use of pre-tax income has the advantage that differences in company tax structures do not affect the performance measure, nor do extraordinary charges to income, such as those associated with any organizational restructurings that CEOs may have undertaken. Pre-tax income includes interest income (and expense), which is an important part of the income of the financial institutions in our sample. Therefore, we do not exclude interest income from our income measure. The income and asset data come from Compustat. Data missing from the Compustat tapes were obtained from company annual reports and Moody's manuals.

Pre-succession ROA is the average of annual return on assets for the 2 years prior to the year in which each external succession occurred. The use of more than 1 year to compute pre-succession ROA has the advantage that it reduces the influence on the pre-succession performance measure of any idiosyncratic events that occurred in a single year. We include only 2 years of pre-succession firm performance data, however, because we seek to control for firm performance prior to succession rather than over an extended time period.

We compute post-succession ROA separately for the first, second, and third years following the year of each succession. That is, we compute PERF three times for each succession, in order to track firm performance over time. The post-succession ROAs for the second and third years are cumulative measures, as follows. The post-succession ROA measure for the second year equals the average of the annual ROAs for the first and second years following the year of succession. And the post-succession ROA measure for the third year equals the average of the annual

ROAs for all three years following the year in which each succession occurred.

We terminate our analysis of post-succession performance after 3 years, primarily because beyond that point, a third of our sample of external successors no longer held the same job. Therefore, an analysis of post-succession performance beyond 3 years might have suffered from a pronounced 'selection effect,' whereby the remaining sample contained only the best performing external successors. Additionally, beyond 3 years post-succession, the sample size becomes small, which would result in very low power of any statistical tests.

In computing PERF, we exclude ROA for the year in which each succession occurred. Because most of the successions in our sample did not occur on January 1, the ROA for the year of succession reflects the performance of the old as well as the new CEO. Additionally, research has shown that firms frequently take large charges against income in the year of succession (Weisbach, 1988; Pourciau, 1993; Murphy and Zimmerman, 1993), which could confound our results.

Our study encompasses the years 1976 through 1990. Since the external successions in our sample took place during the years 1978 through 1987, the pre-succession period begins in 1976 for the successions in 1978 and the post-succession period ends in 1990 for the successions that occurred in 1987.

### SAMPLE OF EXTERNAL SUCCESSORS

Our sample of external successors derives from a larger sample of CEOs listed in *Forbes* magazine annual surveys of executive compensation in large US companies for the years 1978 through 1987. Our data come from the set of firms listed in all 10 years of the survey, which tend to be the largest US companies. Our sample includes 36 external successors, defined as CEOs who had 2 or fewer years of firm tenure prior to becoming CEO. Although some studies have defined external successors as those having longer tenure within the firm (even up to 10 years, as in Vancil, 1987), we defined external succession more narrowly, since our study characterizes external successors as those with minimal firm-specific expertise.<sup>9</sup> Other studies, such as Cannella and Lubatkin (1993),

also have used the 2-year cutoff in defining external successors.<sup>10</sup> The external successors in our sample comprise nearly 12 percent of the sample of internal and external successors from which they were drawn, consistent with other studies using data from a similar time period (e.g. Cannella and Lubatkin, 1993; Zajac, 1990).<sup>11</sup>

### TRANSFERABLE SKILLS OF EXTERNAL SUCCESSORS

We classified each external successor in our sample into one of three categories according to their transferable skills, based on prior work experience: (1) generic skills only, (2) generic plus related-industry skills, (3) generic plus related-industry plus industry-specific skills. For each external successor, we obtained information about prior work experience from proxy statements and from the often long and detailed *Wall Street Journal* article announcing the hiring. We supplemented this information with descriptions in Moody's manuals of the businesses that each successor had managed, and of the businesses in which the hiring firm participated in the year prior to succession. Next we identified whether the executive had prior work experience in one of the same industries in which the hiring firm did business. Then we identified whether the successor had prior work experience in the same competitive cycle, and therefore had related-industry skills. Successors that had neither industry-specific nor related-industry skills were classified as having only generic transferable skills. We next discuss the specific procedures we used to identify industry-specific and related-industry skills.

#### Industry-Specific Skills

In order to assess whether a successor had industry-specific work experience transferable to the hiring firm, we assigned a 4-digit SIC code to each major business in which the hiring firm operated in the year prior to succession, based on the business descriptions for each firm in Moody's manuals. For each successor, we assigned a 4-digit SIC code to each of the businesses for which the executive had had responsibility in previous jobs in the 5 years prior to moving to the hiring firm. We took into account the work experience of the



successor only within the previous 5 years in order to insure that we did not base our assessment on outdated knowledge and skills.

We then assessed whether the successor had prior work experience in at least one industry in which the hiring firm operated. If so, we classified the successor as having industry-specific transferable skills. We did not require that the successor have prior work experience in all of the businesses, or even the primary business, of each diversified firm in the sample. When the Board chooses a successor based on the future needs of a company, such needs may revolve around only some or even one of the businesses of the company. Thus, it is not surprising to see Burlington Northern, a railroad company with oil and coal reserves, choose an executive from the oil company Atlantic Richfield as its CEO. In almost all of the cases, the assessment of whether or not the successor had industry-specific experience was straightforward in terms of matching SIC codes.<sup>12</sup>

#### Related-Industry Skills

In order to assess whether a successor had transferable related-industry skills, we used Williams' three categories of cycle markets. Each business of each hiring firm was classified by type of cycle market, as were each of the businesses for which a successor had responsibility in the 5 years prior to moving to the hiring firm. Because the Williams framework has not been utilized frequently in empirical work, researchers have yet to develop a clear operational way to classify businesses according to cycle markets. Therefore, we enlisted the help of Williams himself. Both Williams and the author of this study who was most familiar with the Williams taxonomy independently made the cycle market classifications. In almost all of the cases, the two classifications agreed. In the few instances where there was a question about how to classify the cycle markets, the cases were reexamined and the revised classifications resulted in agreement regarding the correct classifications. We next explain the logic underlying the cycle market classifications in more detail.

In Williams' taxonomy, industries are defined narrowly, because broadly defined industries may include different segments that are in different cycle markets. For example, consider the US domestic airline industry shortly after deregulation

took place in 1978 (see Bailey and Williams, 1988). The local service airlines in the early 1980s had geographic local monopolies at their hub airports (slow-cycle markets) while the traditionally more dominant trunk (long-haul) carriers competed using standard-cycle capabilities to build brand identity and seek cost efficiencies. Over time, the markets have evolved through merger activity so that the industry now has a few large carriers that have taken control of individual hubs (slow-cycle local monopoly markets) while continuing to compete at the national level (requiring standard-cycle capabilities). Hence, a large domestic airline today operates in two types of cycle markets.

The companies in our sample operated only in slow-cycle and standard-cycle markets. There are two or three dimensions that largely determined the classification of a business by type of cycle market. For products (rather than services), slow-cycle businesses generally were characterized by industrial products with unique features, sometimes tailored to particular firms or built-to-order, frequently involving long-term relationships between buyers and suppliers. These characteristics often indicate local monopolies for expensive products. In contrast, standard-cycle product businesses generally were characterized by mass marketed consumer products, with high volume production, and repeat purchases per customer. For service businesses, regional or geographically specialized businesses were classified as slow-cycle, due to the frequency of local monopoly in regional markets. National service businesses were classified as standard-cycle, since national scope more often indicates large-scale, standardized operations.

Although many businesses could be identified as participating in a single cycle market, a few businesses involved aspects of both markets and we categorized these as hybrids that involved both cycles. Many of the hiring firms operated in more than one cycle market, and many of the successors had prior work experience in more than one cycle market. If a successor had prior work experience in at least one type of cycle market in which the hiring firm operated, we classified the successor as having related-industry skills.<sup>13</sup>

#### CONTROL FIRMS

The matched-pair design that we employ controls for as many factors as possible other than the

work experience and transferable skills of external successors that might affect post-succession firm performance. In what follows, we provide a detailed explanation of the selection criteria and data for the control firms.

### Industry and Firm Size

First and foremost, we controlled for the industries in which the firms that hired externally participated, in order to insure that our results did not reflect the performance of a particular industry or industries. We therefore paired each firm that hired externally with control firms that participated in the same industries as did the hiring firm. We defined industries narrowly in order to capture similarity in the market environments and the resources and capabilities needed to compete effectively in these markets. For example, management of a money center bank is very different from management of a regional bank. We therefore used only money center banks as control firms for the money center banks in our sample. We also paired regional banks with control firm regional banks, and in the same area of the country, in order to control for regional economic conditions. In sum, for each hiring firm, in the year prior to the external succession, the control firms operated in industries and markets very similar to those of the firm that hired externally.<sup>14</sup>

We also controlled for firm size, primarily because it may be more difficult for a CEO to have an impact on the accounting rate of return of a large firm than a small one. For example, a given dollar increase in income produces a smaller increase in ROA for a firm that has a larger asset base. Additionally, an executive may find it more difficult to change a large organization than a small one (Dalton and Kesner, 1983).

In order to identify a candidate set of control firms for each firm that hired an external successor, we needed to identify firms in the same industry or industries as the hiring firm and of similar size prior to succession. Although we used Compustat as the primary source of firm performance data, the Compustat data did not allow us to identify a comparison set of firms in the same industry for the following reasons. Although Compustat identifies companies by 4-digit SIC codes, company business descriptions in annual reports and Moody's manuals showed these codes to be outdated and inaccurate (including at the

2-digit and 3-digit level) for several of the companies that hired external successors in our sample. A spot-check of other companies in the Compustat data showed many inaccuracies as well. Therefore, we consulted Standard and Poor's (S&P) Annual Industry Surveys instead, which list the largest US corporations by industry. These lists, for the year prior to the hiring of each external successor, formed the starting point from which to identify control firms in the same industry(ies) and of similar size to each hiring firm.

The annual Standard and Poor's surveys define industries more broadly than in our study. Therefore, for each potential control company listed in the S&P surveys, we read through the company business description in Moody's manuals and annual reports to identify firms in similar businesses to the companies in our sample that hired external successors. For hiring companies in our sample that participated in more than one industry, we attempted to identify potential control firms that operated in the same or a very similar set of industries. When this was not possible, we identified a set of control firms for each industry in which the hiring firm operated. In total, we read through approximately 500 business descriptions of potential control companies.

The S&P Industry Surveys include only the largest firms in each industry, and the companies in our sample also are among the largest US firms. By using control firms drawn only from the S&P lists, we obtain rough controls for firm size by industry. (The size of the largest firms in each industry may differ by industry, due to factors such as government regulation, for example of public utilities and financial institutions.) Additionally, the matching of hiring firms to control firms by narrowly defined product-markets resulted in closer size matches than in the initial S&P list per industry. For example, smaller money center banks have somewhat different customer bases and less geographic reach than large money center banks. The smaller money center banks in our sample were therefore matched with money center banks that had similar customer bases and geographic reach, and that therefore also tended to be smaller.

We note that, subsequent to external succession, some hiring firms changed their size and/or the industries in which they competed, and some of the control firms may have done so as well. Major changes in firm size and industries of operation

generally are top management policy decisions. By matching firms based on pre-succession industries and size, we implicitly attribute firm performance changes due to changes in industry and firm size to the CEOs that initiated and/or oversaw these changes.

### Internal CEOs

As control firms, we included only firms that had internal CEOs during all of the years that each hiring firm appears in our sample. This insured that we did not confound our analysis of the performance implications of external succession by including external CEOs in the control firm sample.

In the matching process, after identifying potential control firms in the same industry or industries of operation and of similar size as the hiring firm, we ascertained whether all CEOs in these potential control firms were hired internally or not. We consulted annual volumes of Dun and Bradstreet's Reference Book of Corporate Management for a few hundred potential control firms in total, many of whom had multiple CEOs, over a several year time period. For each hiring firm, we included as control firms only companies that had internal CEOs throughout the entire time period that the hiring firm is in our sample.

### Regression to the Mean and Board Effectiveness

In addition to the foregoing factors, we controlled for regression to the mean in firm performance. It is well established that accounting measures of performance revert to the mean over time. That is, low performance tends to rise and vice versa. We therefore matched control firms to each hiring firm on the basis of ROA prior to each external succession, since performance will tend to revert to the mean over time regardless of the transferable skills of successors. Our measure of performance, PERF, then computes the difference between the change in ROA for firms that hired external successors and the change in ROA for control firms with similar pre-succession ROAs, thus controlling for regression to the mean.<sup>15</sup>

By matching hiring to control firms based on pre-succession firm performance, we also control at least in part for the pre-succession effectiveness of the Board of Directors. To the extent that Boards have an impact on firm performance, controlling for pre-succession performance pro-

vides a rough control for Board effectiveness.<sup>16</sup> As noted earlier, research also has suggested that the choice of an external versus internal successor is moderated by socio-political factors that have an impact on the effectiveness of the Board in picking a successor (e.g. Boeker and Goodstein, 1993; Cannella and Lubatkin, 1993). If firms that have similar pre-succession performance also have similarly effective (or ineffective) Boards, and if this applies to effectiveness in picking a successor as well, then it is helpful to match hiring firms with control firms that are equally effective in matching successor skills to firms. Then we can more confidently attribute any resulting performance differences between types of successors to their transferable skills, rather than to differential acumen of Boards in picking successors and associated socio-political factors.

In matching control firms to each hiring firm based on pre-succession ROA, we first identified the set of possible control firms in the same businesses and of similar size prior to succession, and that had internal CEOs. Then we screened for pre-succession return on assets. The final set of control firms for each hiring firm included companies that, prior to succession, had pre-tax return on assets (an average per company over the two years prior to the year of succession) within 30 percent (above or below) of the return on assets of the hiring firm. We used the 30 percent figure because it was the smallest range we could employ and not eliminate a large proportion of the potential control firms. In some cases, we had no potential control firms within the 30 percent range (generally because the industry had few firms to begin with), and we used the firm having the closest pre-succession return on assets to the hiring firm.

### Control ROAs

In the performance measure for each external succession, PERF, the pre-succession and post-succession control returns on assets are computed for the same years as for the hiring firm. For each external succession, the pre-succession control return on assets is the median of the pre-succession (2 year average) returns of the control firms. The post-succession return for each control firm is computed three times, for the 1-, 2-, and 3-year periods following each succession, in the same manner as the post-succession returns for the hiring firm. For each of the 1-, 2-, and 3-year



periods, the control ROA is the median of the individual control firm post-succession ROAs.

Thus, the PERF measure controls for some potentially large effects on firm performance other than the transferable skills of external successors. The measure controls for effects associated with individual years and periods of time (e.g. economy-wide factors affecting companies in each year they are in the sample), industries, firm size, regression to the mean, and to some extent, effectiveness of the Board in the years prior to succession. In addition, the control ROAs come only from firms that had internal CEOs. Obviously, the controls used in the analysis will affect the outcomes of our empirical tests. After reporting the results, we also investigate whether and how selection of the control firms might have affected the results.

#### PRELIMINARY OBSERVATIONS FROM THE DATA

Our data reveal several facts relevant to this study. First, companies hired few external successors with completely unrelated prior work experience: only four of the 36 external successors in our sample lacked competitive cycle skills. This simple observation provides a good deal of support for the proposition that firms seek transferable human capital, gained through prior work experience, when hiring external successors.<sup>17</sup> Additionally, the fact that two of the four external successors that lacked competitive cycle skills were hired by firms in the same city in which they were previously employed further suggests that these were not random hires. Instead, the Boards of the hiring firms may have had good information about the generic skills of these external successors because they came from firms in the same city. As noted previously, not only the expected quality of successors' skills, but also the precision of the information that Boards have about these skills, may affect hiring decisions.

Secondly, 21 of the external successors came from within one of the industries in which the hiring firms already participated, and 11 of the external successors came from related industries in the same competitive cycle as one or more of the businesses of the hiring firms. The fact that almost 60 percent of the sample had transferable industry-specific experience also suggests the importance of

transferable skills in the appointment of external successors.

Many of the hiring firms had experienced poor performance relative to firms in the same industries during the 2 years prior to succession. Two-thirds of the external successors were hired by companies that had lower pre-succession return on assets than the median return on assets for potential control firms in the same industry, of similar size, and that had internal CEOs. Furthermore, even the companies that hired external successors with pre-succession ROAs above the median for potential control firms tended to be in poorly performing industries, such as oil refining, airlines after deregulation, and banking. In fact, commercial banks and savings and loan institutions hired almost one-third (11) of the external successors in the sample. Of these 11 successors, eight had industry experience and three did not. As further indication that the firms in our sample had experienced difficulties, reports in the business press indicate that 25 percent (9) of the external successions were preceded by publicly forced departures of the prior CEO. This figure well exceeds the incidence of forced departures found in prior research. Cannella and Lubatkin (1993) reported that 14.5 percent of successors in their sample were dismissed, as did James and Soref (1981). Friedman and Singh (1989) found that 11 percent of successions were board initiated.

Finally, a number of forced departures occurred subsequent to the external successions. Based on publicly available information in the business press, we identified seven departures among the external successors as clearly forced by the Board. Here again, the forced departures of approximately 20 percent of our sample of external successors exceeds the 11–14.5 percent for all successions, internal and external, found in prior research. Our somewhat higher percentage of forced departures may have occurred simply because the troubled industries and firms in our sample presented strong managerial challenges. Additionally, the forced departures may reflect the difficulty of accurately matching the skills of successors to the needs of firms.

#### MATCHED PAIR METHODOLOGY

Because only four external successors fell into the category of generic skills only (from outside

of the competitive cycle), this was too small a number to analyze as a separate group.<sup>18</sup> Instead, we compared two groups of external successors: those with transferable industry-specific skills (from within the industry) and those with only transferable competitive cycle and generic skills (from outside of the industry). There are 21 external successors with transferable industry-specific skills and 15 without industry-specific skills. The results for the latter group obviously will depend importantly on the 11 successors that have transferable competitive cycle skills.

We tested our hypotheses using the full sample of external successors, and using a sub-sample that excluded external successors in financial institutions (commercial banks and savings and loan institutions). We conducted the sub-sample analysis for several reasons. First, the financial institutions have much smaller ROAs than do the other firms in the sample that hired externally, primarily because financial institutions require much larger asset bases for their operations. The large asset bases in turn lower reported ROAs. Secondly, the results for the full sample could be influenced by factors specific to financial institutions, since eight of the 21 within-industry successors were hired by financial institutions. The subsample analysis removes this potential influence. As a third consideration, two of the external successors in our sample were hired by the same firm, a savings and loan institution. The sub-sample that excludes financial institutions also excludes these two external successions that may not have been independent events.

## RESULTS

To conduct our analysis, we used non-parametric statistical measures and tests that are well suited to

both the small size of our sample and the fact that the sample contains some outliers in the performance measure, PERF. Table 1 reports median PERF for all of the external successors in the sample, and for those with and without industry-specific skills separately. The table also reports this information for the sub-sample that excludes financial institutions. All of the medians reported in Table 1 share the noticeable characteristic that they look to be close to zero in magnitude.

Table 2 reports information related to the variability of PERF for all the external successors in the sample, and for each of the two groups of external successors. For each set of external successors, the table reports the range of PERF (the difference between the smallest and largest values) and the inter-quartile range, sometimes termed the quartile range (the range of the middle 50 percent of the observations). The latter measure removes the influence of outliers on the ends of the full range. The table also reports the range and inter-quartile range of PERF for the sub-sample that excludes financial institutions. In Table 2, the inter-quartile ranges for external successors with only transferable competitive cycle and generic skills are between approximately two and six times that for successors that also had transferable industry-specific skills.

As shown in Table 3, a Mann-Whitney *U*-Test fails to reject the null hypothesis of no statistically significant difference in the expected value of PERF for the two types of external successors.<sup>19</sup> This result holds for all of the three years following the year of succession, in both the full sample and the financial institutions sub-sample. The results do not support either H1a that external successors with industry-specific skills perform better, or H1b that external successors without industry-specific skills perform better. These results, however, are

**Table 1. Median Values of PERF**

Year subsequent to succession	All successors	No. of observations	Within industry	No. of observations	Outside of industry	No. of observations
<i>Full sample</i>						
1	-0.00347	36	-0.00404	21	-0.00053	15
2	-0.00048	32	-0.00021	19	-0.00075	13
3	-0.00087	28	0.00004	18	-0.00155	10
<i>Sample excluding financial institutions</i>						
1	-0.00418	25	-0.00418	13	-0.00573	12
2	-0.00021	23	-0.00019	12	-0.00450	11
3	-0.00312	21	0.00251	12	-0.00327	9

**Table 2. Variability of PERF**

Year subsequent to succession	All successors		Within industry		Outside of industry	
	Range	Inter-quartile range <sup>a</sup>	Range	Inter-quartile range <sup>a</sup>	Range	Inter-quartile range <sup>a</sup>
<i>Full sample</i>						
1	0.335	0.031	0.270	0.015	0.234	0.098
2	0.280	0.026	0.242	0.019	0.261	0.124
3	0.291	0.023	0.281	0.021	0.235	0.114
<i>Sample excluding financial institutions</i>						
1	0.335	0.060	0.270	0.047	0.234	0.115
2	0.280	0.055	0.242	0.035	0.261	0.148
3	0.291	0.033	0.281	0.025	0.235	0.114

<sup>a</sup> Range of the middle 50 percent of the observations.

**Table 3. Mean Performance: Outside of Industry vs Within Industry External Successors**

Year subsequent to external succession	No. of observations		Smaller of $U$ or $U'$ <sup>a</sup>
	Outside of industry	Within industry	
<i>Full sample</i>			
1	15	21	143
2	13	19	119
3	10	18	79
<i>Sample excluding financial institutions</i>			
1	12	13	69
2	11	12	64
3	9	12	48

Mann-Whitney  $U$ -Test:  $E(\text{PERF})_{\text{Outside}} = E(\text{PERF})_{\text{Within}}$  vs  $E(\text{PERF})_{\text{Outside}} \neq E(\text{PERF})_{\text{Within}}$

<sup>a</sup> None of the  $U$  or  $U'$  values are statistically significant at the 10% level (two-tailed test).

**Table 4. Variance of Performance: Outside of Industry vs Within Industry External Successors**

Year subsequent to succession	No. of observations		$T^a$	Significance level of $T$
	Outside of industry	Within industry		
<i>Full sample</i>				
1	15	21	108	<0.75
2	13	19	75	<0.05
3	10	18	59	<0.075
<i>Sample excluding financial institutions</i>				
1	12	13	55	<0.11
2	11	12	33	<0.05
3	9	12	32	<0.075

Siegel-Tukey test:  $\text{Var}(\text{PERF})_{\text{Outside}} \leq \text{Var}(\text{PERF})_{\text{Within}}$  vs  $\text{Var}(\text{PERF})_{\text{Outside}} > \text{Var}(\text{PERF})_{\text{Within}}$

<sup>a</sup>  $T = S - [(n)(n+1)/2]$ , where  $S$  = sum of the ranks of  $\text{PERF}_{\text{Outside}}$  and  $n$  = # of outside of industry observations.

consistent with the prediction that when Boards differ in the reasons for hiring CEOs externally, firm performance will not differ on average for external successors with different transferable skills.

With regard to the variance of firm performance (Table 4), we use the Siegel-Tukey, (1960) test which is a modification of the Mann-Whitney  $U$ -test (Conover, 1971).<sup>20</sup> In accordance with hypothesis 2, we seek to reject the hypothesis that the variance of PERF for external successors with only competitive cycle and generic skills is less than or equal to the variance of PERF for external successors with industry-specific skills, against the alternative that the variance of PERF for external successors without industry-specific skills exceeds that for external successors with industry-specific skills. For this test, ranks in the full sample of

external successors are assigned as follows: rank 1 is assigned to the smallest value, rank 2 to the largest value, rank 3 to the next largest value, rank 4 to the second smallest value, rank 5 to the next smallest value, rank 6 to the next largest value, and so on. Since this is a directional test, we use a one-tailed test. This improves the power of the test when there is a small number of observations and when the test produces a statistically significant result in the direction hypothesized, both of which occur here. The test statistic is  $T = S - [(n)(n+1)/2]$ , where  $S$  equals the sum of the ranks of PERF for successors without industry-specific skills and  $n$  equals the number of successors without industry-specific skills (Conover, 1971).

The test shows that the variance of PERF for external successors without industry work experience exceeds that for external successors that have



industry experience. This result holds for all 3 years following the year of succession, for the full sample and the financial institutions sub-sample. (In one case, the level of statistical significance is just barely above 10 percent. In all of the other cases, the significance levels are below 7.5 percent.) These results provide support for H2 that the variability of firm performance is greater for external successors that have a less full complement of transferable skills. These results are consistent with our earlier arguments that Boards may have relatively poor information about the transferable skills of executives from outside of the industries in which the hiring firms operate, and that external successors from outside of the industry may also seek greater change.<sup>21</sup>

## DISCUSSION

These results provide support for hypothesis 2 that the variance of firm performance is greater for external successors with a less full complement of transferable skills, but the results do not support either of the hypotheses regarding the level of firm performance. We controlled for many factors other than the transferable skills of successors that could affect firm performance including: the prior performance of the hiring firm; performance of the industry or industries in which the hiring firm operated prior to each external succession; economy-wide factors that could affect performance (year effects) before and after succession; firm size prior to succession; regression to the mean in accounting rates of return; and implicitly, the pre-succession effectiveness of the board of directors. Although we controlled for a large number of factors, we next examine whether issues related to the structure of the analysis might have affected our results.

To probe the robustness of our finding regarding the variance of PERF, we examined several factors that could have affected the statistical analysis. First, we note that these results do not stem from outliers in the data, since we used non-parametric statistical tests. Secondly, the results are unlikely to be due to any noise introduced into the performance measure by using control firms. The range and inter-quartile range of the PERF measure are much lower than the range and inter-quartile range of the unadjusted change in ROA

for the hiring firms, for the full sample and for the two types of successors separately. That is, the use of control ROAs reduces variability in the data.

Third, we checked to see whether measurement error in the pre-succession matching of ROAs between the hiring and control firms might explain the difference in variance between types of external successors. We calculated the difference in pre-succession ROA between each hiring firm and its control ROA, and used a Wilcoxon signed ranks test to ascertain whether the expected value of this measure differed for the two types of external successors. It did not. On average, the pre-succession control ROAs provided equally close matches for both types of successors.

As yet another possibility, the greater variance in PERF of successors without industry-specific skills could arise if the firms that hired these successors had greater variance in ROA prior to succession than did the firms that hired successors with industry specific-skills. We tested this possibility using the sub-sample of non-financial institutions, since these are the firms that largely determine the variability in ROA (as the ranges and inter-quartile ranges in Table 2 indicate). A Siegel–Tukey test rejects this supposition at the 10% level of significance.

In short, the results regarding the variance of performance do not arise as an artifact of the data used to construct the PERF measure.

The results regarding the expected value of PERF fail to reject the null hypothesis of no difference in the post-succession performance of firms that hired external successors with industry-specific transferable skills versus those without these skills. This failure to reject the null hypothesis provides some support for the proposition that if firms differ in their needs for CEO skills and Boards of Directors also match the skills of CEOs to firm needs, then firm performance will not differ on average. We might ask, however, whether measurement error in matching control and hiring firms contributes to this result. Because, as just noted above, the pre-succession control ROAs provided equally close matches for both types of external successors, measurement error of this sort does not explain the results.

As another possibility, the control firms included internal CEOs that had different tenures in the job, which might affect the performance of the control firms. It is important to note that differences in the tenures of internal CEOs will

only affect the results if these tenures differ systematically between the control firms for the external successors with industry-specific skills and the control firms for the external successors without these skills. Given the large number of CEOs in the control firms (over a 100), however, by the law of large numbers it is likely that their tenures are distributed randomly between the two types of external successors.<sup>22</sup> More generally, in designing the criteria used to select the control firms, we obviously could not control for every conceivable factor that might affect firm performance. It is, however, a general statistical principle that as long as any omitted factors are not correlated with the phenomenon under investigation—the backgrounds of external successors in this case—omission of additional factors does not confound the results.

In sum, our investigation of the impact of transferable skills in external succession has found that very few companies hired external successors that had no transferable skills directly related to the industries in which the hiring firms participated. These data strongly suggest that the Boards of Directors of firms that hired CEOs externally viewed transferable knowledge in the form of both competitive cycle skills and industry-specific skills as important. We also found that the mean level of post-succession firm performance did not differ for external successors with and without transferable industry-specific skills. Although consistent with a fit between the skills of the CEO and the needs of the firm, the results suggest the need for further research on this issue.

We found as well that firms that hired external successors with a less full complement of transferable skills (from outside of the industry) had greater variance of post-succession performance. This result is consistent with the hypothesis that outsiders with an especially fresh perspective and fewer transferable skills may undertake more aggressive changes that in turn may have less certain outcomes. The result also is consistent with the observation that Boards of Directors generally have better information about external successors from within the industry and therefore can better estimate the level of future performance, resulting in less variance of performance after the fact.

These findings have practical implications for Boards of Directors that are contemplating external succession. In particular, the results suggest that Boards can go beyond current

industries of operation to hire outside successors from related industries without harming mean firm performance. It is important, however, that Boards seek as much information as possible about successors from related industries, in order to reduce the variance of performance (and downside risk) due to insufficient information about the match between successor skills and the needs of the firm.

## CONCLUSION

Our analysis of transferable managerial human capital and external succession provides an empirical integration of economic analysis and traditional approaches in strategic management. In particular, our study on a topic anchored in traditional strategic management research, also utilizes economic concepts and logic without superimposing an entire economic model on the analysis. Thus, we began with the logic of Becker's (1964) work on human capital, where skills are classified in a manner that reflects their transferability between jobs. We then elaborated on this basic logic with respect to chief executive officers, and added to it the category of related-industry skills based on observations of managers in the real world.

The focus on the transferability of managerial skills that is inherent in the analysis of the human capital of top executives led us to ask and answer new questions regarding CEO succession. Additional considerations from economics, with regard to information asymmetries and analysis of risk, further informed our study and led again to new hypotheses and empirical tests. Here again, we used concepts and logic from economics, but did not superimpose entire economic models on the research. Instead, we formulated hypotheses appropriate to the specific real world setting, namely, external succession in this case.

The more fine-grained analysis of managerial human capital in the managerial rents model also led us to collect more detailed data on the background and work experiences of CEOs than is common in many studies of executives. In addition, we used a matched pair statistical design and non-parametric statistics that we first encountered in the economics literature, and that are widely used in the behavioral sciences. Our results

have practical implications as well: although mean firm performance does not appear to suffer when Boards of Directors go outside the industry to hire external successors from related industries, Boards would be well advised to seek as much information as possible about related-industry successors in order to reduce the variance (and downside risk) of performance.

All of the foregoing points have important implications for the integration of economics and strategic management research in general, for both theoretical and empirical work. First and foremost, we need not import entire economic models in order for economics to be helpful in strategic management research. Indeed, our study suggests that economic logic and concepts, when utilized in a manner that is relevant to strategic management issues and real world phenomena, can add precision to the analysis and also lead to new questions and empirical tests. That is, economics need not constrain our areas of research inquiry, and instead has the potential to add to our knowledge about strategic management.

In undertaking empirical research, the new questions that we ask may lead us to collect new types of data and to utilize alternative statistical techniques. The use of a matched-pair design and non-parametric statistics, for example, has large potential for strategic management research, where important strategic events may occur infrequently. And the empirical findings that result from integrating economics and strategy research may have practical implications, such as those for boards of directors when hiring external successors.

Overall, economic analysis has much to bring to strategic management. Of equal importance, strategic management has much to offer economic analysis. A true integration of economics and strategic management, rather than an imposition of one on the other, has the potential to provide new research questions informed by real world phenomenon that can lead to new empirical findings and practical implications.

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#### NOTES

1. In Becker's (1964) analysis, a job and a firm are synonymous, and when workers switch jobs they also switch firms. We refer exclusively to firms in the remainder of this analysis.
2. Finkelstein and Hambrick (1996) do not go into more detail regarding what constitutes a related *versus* an unrelated industry.
3. Ghemawat (1991) provides a taxonomy of manufacturing markets only. Our sample, however, includes a sizeable percentage of non-manufacturing firms.
4. This hierarchy of skills does not explicitly deal with the skill of running a diversified firm independent of skills connected to the individual industries in which the firm participates. This skill can be thought of as a quasi-generic skill that transfers to diversified firms in all competitive cycles and industries.
5. We also note that in general, functional area skills are likely to have a firm-specific, an industry-specific, a related-industry, as well as a completely generic component (see, e.g. Boeker, 1997). As managers gain work experience in certain industries and competitive cycles, their functional skills become tailored at least in part to the contexts in which they manage. Additionally, because various types of functional skills are likely to be more important in some types of industries (Rajagopalan and Datta, 1996) and competitive cycles than in others, these various functional skills will be reflected in the relevant industry-specific and related-industry skills.
6. Although empirical evidence has varied, research has suggested that poorly performing firms are more likely to hire external rather than internal successors (Helmich and Brown, 1972; Salancik and Pfeffer, 1980). Dalton and Kesner's (1985) results suggest that prior poor firm performance provides a necessary but not sufficient condition for external succession (i.e. firms ought to look outside but often do not), and Cannella and Lubatkin (1993) found that factors other than firm performance moderate the impact of poor firm performance on external succession.
7. This argument also raises the possibility that when the Board has less good information about candidates, such as from outside of the industry, the Board requires a higher level of expected performance for the candidate. This implies that the expected level of performance is higher for external successors from outside of the industry than from within the industry, and provides additional logic supporting H1a. (See, e.g. Fazel and D'Itri (1997) who argue that if 'the efficiency of the new manager is greater than that of the former, the disruptive effect of succession is minimized.')



8. This is a standard procedure when analyzing infrequent events.
9. For this reason, we also did not include CEOs who became CEO for a second term in the same company, having left the company in the interim.
10. To preclude bias in the analysis of firm performance, the sample of external successors excludes executives who became CEOs under circumstances where subsequent firm performance would have been affected in major ways by highly idiosyncratic factors. In particular, we excluded one successor appointed CEO as part of a federal bailout of a bank with continuing government involvement in bank management, and we excluded two external successors who each apparently ran two companies simultaneously. We also excluded CEOs for whom we could not verify the date the person became CEO, and the date the person first started work for the company if not initially hired as CEO, based on proxy statements or reports in the business press. Finally, we excluded one successor for whom post-succession firm performance data were not available due to bankruptcy and one successor who was CEO for less than a year.
11. The sample of external successors is similar but not identical to that of Harris and Helfat (1997) dealing with CEO compensation. Our focus on firm performance rather than compensation allowed us to include two external successors not included in that sample for reasons having to do with compensation. We also excluded one external successor in the Harris and Helfat (1997) sample for which post-succession firm performance data were not available. For all of the external successors in our sample, we collected large amounts of new information about their backgrounds in order to analyze related-industry skills.
12. There was one successor who had managed a second mortgage business in a larger company and then moved as CEO to a savings and loan institution. Due to the similar nature of the two businesses, we classified this successor as having industry-specific skills.
13. Because a 4-digit industry may include more than one cycle market, as in the airline example, it was possible that we could have had successors with industry-specific work experience that lacked competitive cycle experience. We did not encounter this in our sample.
14. This contrasts with the approach we took in identifying industry-specific successor skills, where we defined industries more broadly at the 4-digit SIC code level, in order to make sure we included all relevant industry experience of the CEOs.
15. As an alternative approach to controlling for regression to the mean Smart and Waldfogel (1994) use an autoregression of each firm's performance history to predict expected performance changes that would have occurred absent the events under investigation, which are management buy-outs in their study. Unfortunately, large amounts of data in the Compustat Research files that we would need to implement a variant of this approach are missing.
16. We could not directly control for factors often thought to affect Board effectiveness, such as the percent of outside directors and stock ownership by the Board, due to data limitations.
17. This finding could also reflect a reluctance of executives to become CEOs of companies when they lack transferable skills. Companies, however, can use executive compensation, including golden parachutes, to help insure executives against such risk (Harris and Helfat, 1997).
18. Any results could be idiosyncratic to the very small number of individuals in this group.
19. The Mann-Whitney *U*-Test distinguishes between differences in two distributions. Where the distributions differ only by the location of the expected value, then the test is equivalent to testing for differences in the expected values of the two distributions. However, a subsequent test that we perform for differences in the variances of the two distributions suggests that the distributions may differ other than by the expected value. Nevertheless, the Mann-Whitney test does not pick up this difference.
20. The Siegel-Tukey test is not likely to detect differences if the median values in the two groups being compared differ significantly from one another. The median values of PERF for within-industry and outside-of-industry successors, however, are very close to one another.
21. We conducted an extensive search of business sources in an effort to assess whether outside-of-industry successors attempted greater change. It proved difficult to construct a reliable measure of the extent of attempted or actual change.
22. Almost all of the external successors were not previously CEOs but were very high-level executives in their prior jobs. Thus, differences in whether or not the successors had previously been CEO of another company do not explain the results either.

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