Strategic Management Journal
Strat. Mgmt. J., **21**: 429–453 (2000)

MODELING THE DYNAMICS OF STRATEGIC FIT: A NORMATIVE APPROACH TO STRATEGIC CHANGE

EDWARD J. ZAJAC[1]*, MATTHEW S. KRAATZ[2] and RUDI K. F. BRESSER[3]
[1]*J. L. Kellogg Graduate School of Management, Northwestern University, Evanston, Illinois, U.S.A.*
[2]*College of Commerce and Business Administration, University of Illinois, Champaign, Illinois, U.S.A.*
[3]*Department of Business Administration, Free University of Berlin, Berlin, Germany*

This study develops and tests a dynamic perspective on strategic fit. Drawing from contingency and resource-based arguments in the strategy and organizational theory literatures, we propose a distinctive analytical approach to identify environmental and organizational contingencies that should predict changes in a firm's strategy and the performance implications of such changes. We test our model using extensive longitudinal data from over 4000 U.S. savings and loan institutions during a period when many S&Ls considered changing strategic direction. The findings support our model of dynamic strategic fit. Specifically, we find that (1) the timing, direction, and magnitude of strategic changes can be logically predicted based on differences in specific environmental forces and organizational resources, and (2) organizations that deviated from our model's prediction of dynamic strategic fit (i.e., changed more or changed less than our model prescribed) experienced negative performance consequences. We conclude by discussing the implications of our approach and findings for future research on strategic fit and strategic change. Copyright © 2000 John Wiley & Sons, Ltd.

One of the most widely shared and enduring assumptions in the strategy formulation literature is that the appropriateness of a firm's strategy can be defined in terms of its fit, match, or congruence with the environmental or organizational contingencies facing the firm (Andrews, 1971; Hofer and Schendel, 1978). Strategic fit is a core concept in normative models of strategy formulation, and the pursuit of strategic fit has traditionally been viewed as having desirable performance implications (Ginsberg and Venkatraman, 1985; Miles and Snow, 1994). Yet despite the concept's historical centrality and intuitive appeal, one finds relatively little explicit attention to strategic fit in the most recent strategy literature (Kraatz and Zajac, forthcoming). We believe that this situation may be attributable to three potential problems that have hindered the theoretical development and empirical testing of the concept of strategic fit.

First, some researchers remain justifiably uncomfortable with the static orientation that the concept of fit has historically implied (Miller and Friesen, 1984; Zajac and Shortell, 1989; Rajagopalan and Spreitzer, 1997; Bresser, 1998). While fit seems to imply a match at a single point in time, understanding dynamic fit requires that any new perspective on strategic fit must also come to grips with the question of strategic change. Venkatraman (1989: 441), after having comprehensively reviewed research on strategic fit, concludes that existing studies 'have focused on static, cross-sectional approaches for specifying and testing fit within strategy research,' and he calls for research on 'the development of appropriate mechanisms to specify and test fit within a longitudinal perspective.' While one might expect such progress to be evident in the recently

Key words: strategic fit; strategic change; contingency theory; resources; performance
* Correspondence to: Edward J. Zajac, J. L. Kellogg Graduate School of Management, Northwestern University, Leverone Hall, 2001 Sheridan Road, Evanston, IL 60208-2001, U.S.A.

Received 1 July 1997
Final revision received 6 August 1999

expanding body of research on strategic change (Rajagopalan and Spreitzer, 1997), that literature has tended to emphasize process-related issues, such as inertial barriers to change. Thus, neither strategic fit nor strategic change research has offered the conceptual or methodological tools needed to predict and assess whether an organization's strategy will fit with changing environmental and organizational circumstances.[1]

A second problem relates to the multidimensionality of strategic fit. Simple bivariate approaches do not permit an accurate conceptualization or measurement of strategic fit, given that organizations face *multiple* environmental and organizational contingencies that can affect strategic fit. In addition, the fact that the contingencies are both environmental and organizational suggests a potential tension in a firm's seeking a fit between its strategy and its environmental situation vs. a fit between its strategy and its unique competencies. This tension is also amplified if one begins to conceptualize strategic fit in more dynamic terms, given that the desirability of changing strategy in response to changing environments becomes much more uncertain when it moves an organization away from its traditional or 'distinctive' competencies (Prahalad and Hamel, 1990; Ghemawat, 1991; Selznick, 1957).

A third problem in studying the dynamics of strategic fit is that it goes against a natural conservatism among researchers by requiring that a researcher 'go out on a limb' and develop a normative framework that will allow for predicting (or even prescribing) strategic fit. Developing such a framework necessitates making predictions as to which, when, in what direction, and how much organizations *should* change their strategies.[2] It also requires that one make *a priori* predictions about the performance consequences of specific changes for specific organizations. This is challenging given the inherent difficulty in specifying precisely which environmental and organizational contingencies a firm should take into account when formulating (and reformulating) its strategy to maximize firm performance. Ensuring that those contingencies are general enough to apply across contexts yet specific enough to accurately reflect the reality of the context under study represents another related challenge. Taken together, these challenges explain to some extent why researchers have generally opted to emphasize what might be behavioral barriers to strategic change, instead of attempting to provide a normative analysis, as described above.

In this study, we seek to address the three problems discussed above by developing and testing a model of strategic fit that is dynamic, multidimensional, and normative (see also Figure 1).[3] Our analytical approach is developed in subsequent sections, and can be summarized as follows: We first propose that within a given population of organizations the likely existence of significant cross-sectional and longitudinal differences in organizational resources and environmental conditions will create very different situations for firms attempting to maintain strategic fit over time. We classify these differing situations in terms of four prototypical change/performance relationships (two of which imply dynamic strategic fit, and two which imply misfit). We then identify the environmental and organizational circumstances under which each relationship should apply, utilizing insights from classical contingency arguments, the more recent resource-based perspective, as well as industry-specific knowledge. We then assess the validity of our predictions by assessing empirically the actual (vs. predicted) changes made by the organizations in our study, and the performance implications of those changes.[4]

We develop and test our approach in an indus-

[1] Miles and Snow's (1994) more recent discussion represents an important effort to discuss dynamic fit, but they are not specific in defining when a particular strategy is well suited (or poorly suited) to a particular environment. Their emphasis tends more to highlight the general value of linking strategy to internal organizational structure and processes.

[2] We use the term normative to distinguish among models that are primarily descriptive (i.e., this is what did happen), primarily predictive (i.e., this is what was expected to happen), and primarily normative (this is what *should* have happened). Note that frameworks can be predictive without being normative (e.g., the weather at time $t + 1$ can be predicted fairly well simply by taking the weather at time t). The latter two can also be tested empirically, of course.

[3] A fourth problem that may also have contributed to difficulties in research on fit relates to the measurement of the conceptualization of fit (Van de Ven and Drazin, 1985; Venkatraman, 1989). As this issue is more empirical in nature, we address it in our methods section.

[4] Our approach most closely resembles what Venkatraman (1989: 434) describes as the 'profile deviation' approach, which he suggests is 'particularly useful for testing the effects of environment–strategy coalignment.'

	Traditional view	Proposed View
Time frame	Static	Dynamic
Assumed Relationship	Bivariate	Multivariate
Dependent Variable	Organizational Structure	Organizational Strategy
Independent Variables	Environmental Factors	Environmental Factors and Organizational Contingencies
Fit: Common/Unique?	Fit is Common Across Organizations in Similar Environments	Fit is Largely Unique, Given Differences in Organizational Contingencies

Figure 1. Towards a new conceptualization of strategic fit

try-specific setting, using detailed longitudinal data from over 4000 U.S. savings and loan (S&L) institutions spanning the decade of the 1980s. We identify critical environmental and organizational factors facing S&Ls and discuss the likely effects of these contingencies on the desirability of a change in an S&L's longstanding core strategy of residential mortgage lending. We test the predictions of our contingency model regarding the magnitude, direction, and timing of changes in S&Ls' core strategies by comparing actual vs. expected strategic change, and we then examine the performance implications of adhering to vs. deviating from our model. By focusing on generating and testing a model of dynamic strategic fit, we hope to offer a distinctive analytical approach that contributes conceptually and empirically to the literature on strategic fit and strategic change.

THEORETICAL BACKGROUND

The concept of fit has theoretical roots in contingency perspectives found in both the strategy and organization theory literatures (Ginsberg and Venkatraman, 1985). As Venkatraman and Camillus (1984: 513) have noted: 'The field of business policy—the initial strategy paradigm (Schendel and Hofer, 1979: 8)—is rooted in the concept of "matching" or "aligning" organizational resources with environmental opportunities and threats (Andrews, 1971; Chandler, 1962).' Miles and Snow (1994: 12) suggest that 'the process of achieving fit begins, conceptually at least, by aligning the company to its marketplace … this process of alignment defines the company's strategy.'

In the organization theory literature, the notion of fit has long been associated with structural contingency theory (Thompson, 1967; Lawrence and Lorsch, 1967; Donaldson, 1995), which has tended to emphasize environment–structure relationships, rather than environment–strategy relationships (the focus of this study). Another important difference between the strategy and organizational theory literature's focus on fit is that the latter literature has been rather unambiguous in proposing that particular structures are more appropriate for given environments, and that changes in environmental conditions require a reassessment of the choice of structure.[5] Such predictions can be unambiguously made because the contingency factor in the environment–structure framework is essentially unidimensional: certain environmental conditions suggest certain structures.

The strategy literature's concept of matching and alignment, on the other hand, has historically been multidimensional, and hence more ambiguous in prediction: if environmental conditions change (either through the emergence of new opportunities or threats), it is not obvious that an organization should change its strategy to achieve better fit with environmental conditions if such changes would imply a clear 'misfit' with established organizational strengths. The older 'SWOT' framework in strategy certainly does not provide a resolution of this problem, and more recent theory-based frameworks in the strategy literature (i.e., industry and competitive analysis, and the resource-based approach) have also not addressed this problem directly, given that each emphasizes different halves of the SWOT framework (OT and SW, respectively).[6]

[5] There have been some debates in this literature as to whether environments vs. size vs. technology best determines appropriate organizational structure (e.g., Donaldson, 1995).

[6] An exception is the model developed by Amit and Schoemaker (1993), who propose that strategic industry factors need to be considered before a firm decides what strategic assets it wishes to build and leverage.

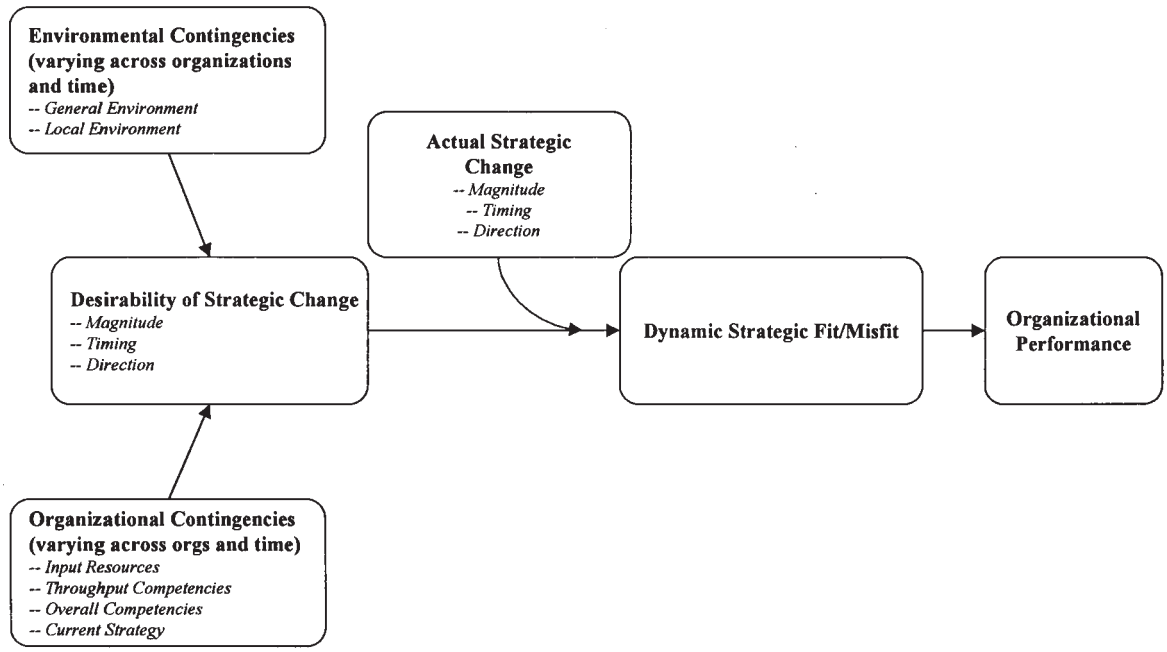

Figure 2. Towards a generic model of dynamic strategic fit: Antecedents and consequences

In addition, both the industry and resource-based perspectives have historically tended to emphasize static equilibria, and thus are not easily adapted to the discussion of strategic change. Other strategy researchers more centrally interested in strategic change and strategic fit have tended to emphasize process over content issues. For example, Quinn's (1980) discussion of strategic change and 'logical incrementalism' is useful in proposing a process for bringing together issues in strategy formulation, as is the more recent work on strategic fit by Miles and Snow (1994), but both stop short of proposing specifically how the content of an organization's strategy should fit (and/or be changed to fit) with its environmental and organizational context. In summary, what is needed is a distinctive analytical approach that simultaneously considers how multiple organizational *and* environmental factors should affect strategic fit over time, as well as subsequent firm performance.[7]

We seek to offer such an approach by proposing that (1) one can define a set of organizational and environmental factors that theoretically should define strategic fit, (2) variation in those factors implies variation in the necessity for strategic change (across organizations and/or across time), (3) the comparison of actual and necessary strategic change determines the degree of dynamic strategic fit, which should then influence subsequent organizational performance. This logic is summarized in Figure 2, which represents our generic model, on a construct-to-construct basis, of these antecedents and consequences of dynamic fit (we discuss the appropriateness of the specific variables in the model in the later section on hypotheses).

Given that the concept of dynamic strategic fit is at the center of our conceptual and empirical analyses, we also provide Figure 3 to highlight how, at the broadest level, the connection between strategic change, dynamic strategic fit, and organizational performance can be characterized in terms of four distinct situations. The vertical dimension in Figure 3 captures whether strategic change is necessary to establish dynamic strategic fit (as suggested by relevant environmental and organizational contingencies), and the horizontal dimension captures whether strategic change

[7] Similar concerns are raised by Miller and Friesen (1984), who offer a configurational approach that is generally consistent with our approach, with the following exceptions: they emphasize elements of organizational structure, rather than organizational resources, and their approach is more empirically driven, rather than based on *a priori* predictions (see also Venkatraman, 1989).

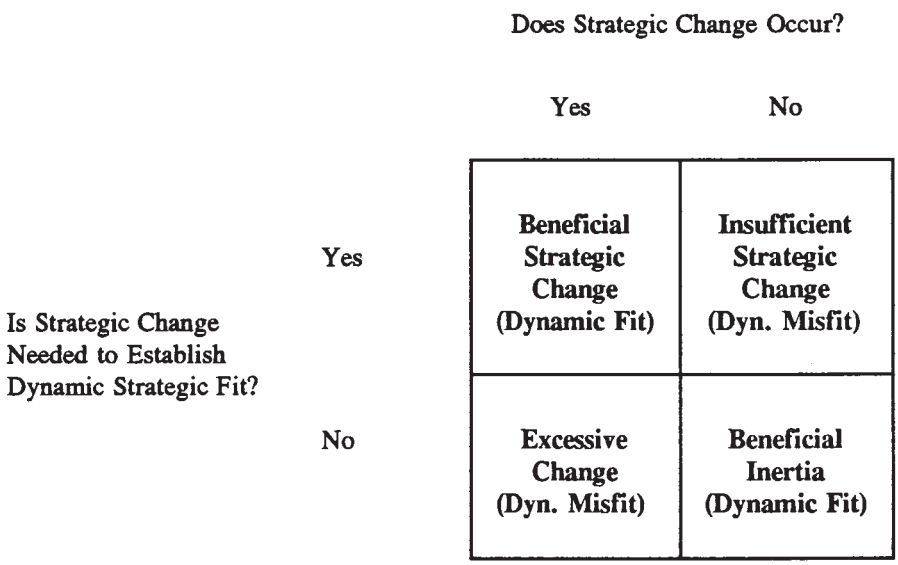

Figure 3. Four possible scenarios in the pursuit of dynamic strategic fit

occurs or not. The individual quadrants of this matrix highlight that strategic change may have very different performance consequences for organizations in a given population. These different consequences should be predictable based on an *a priori* assessment of the contingencies that suggest the necessity for strategic change in the pursuit of dynamic strategic fit. Each of the four quadrants in Figure 3 is discussed in greater detail below; taken together, they form the theoretical building blocks for our approach to analyzing dynamic strategic fit.[8]

Beneficial strategic change → Dynamic fit

This quadrant represents the situation where an organization faces the necessity to change (i.e., as defined by environmental and organizational contingencies) and does change as needed, resulting in a performance benefit. Environmental contingencies can encompass shifting consumer preferences, changes in government policy, competitors' actions, technological changes, and other exogenous shifts that can affect the viability of a firm's existing strategy. Organizational contingencies can also play a role in this situation, such as when a lack of organizational resources or competency prevents the successful implementation of a particular strategy, implying a need for strategic change.

Organizations confronting these types of unfavorable contingencies should achieve performance benefits as a result of altering their strategies. Firms that adapt their strategies in response to these contingencies are basically acting in accord with the recommendations of traditional perspectives on strategy and strategic change (Hofer and Schendel, 1978; Miles and Cameron, 1982; Zajac and Kraatz, 1993). These perspectives tend to view organizations as continually striving to achieve coalignment with changing environmental and organizational contexts, and also highlight the functional benefits of this search (Ginsberg, 1988; Kraatz and Zajac, 1996).[9]

Our effort to conceptualize fit in a way that is multidimensional, dynamic, and normative suggests several additional issues relating to ben-

[8] We recognize that fit is a continuous rather than a binary outcome (we use binary terms simply for ease of exposition), and we wish to note that Figure 1 is, of course, not intended to capture all the complexities involving strategic change, strategic fit, and organizational performance; rather, it serves as a useful starting point for our discussion of dynamic strategic fit.

[9] However, this characterization of the strategic adaptation perspective does not assume that organizations are highly proactive (i.e., changing even in the absence of environmental stimuli), or that organizations are able to instantaneously observe, recognize, and interpret changing environmental conditions. Rather, this conservative characterization simply views organizations as purposively and intendedly seeking to adapt to changing environmental and organizational conditions.

eficial strategic change. First, strategic change will be more beneficial when it increases fitness with multiple relevant contingencies. Changes that increase fitness with one contingency but significantly decrease fitness along other important dimensions are not likely to prove beneficial. Second, we must explicitly acknowledge that since contingencies will likely vary significantly over time, changes that are beneficial at one point in time are not necessarily beneficial if undertaken much sooner or much later. Third, we must recognize that strategic change is not a discrete or a unidirectional choice. Strategic changes in the pursuit of dynamic strategic fit will likely be of varying magnitudes and will move in different directions. Finally, an important implication of considering all these issues is that it highlights the uniqueness (across organizations and across time) of strategic fit, and that beneficial strategic change needs to be assessed in organization-specific and time-specific terms.

Insufficient strategic change → Dynamic misfit

This quadrant represents the situation wherein an organization faces the necessity for change but fails to respond adequately, resulting in a performance detriment. As the obverse of the beneficial change quadrant discussed above, it captures what strategists and adaptation theorists might envision as a 'worst case scenario,' i.e., an organization with a strategy that has become obsolete, outdated, or otherwise inappropriate in light of changing conditions. For organizations in this category of dynamic misfit, the nonoccurrence of such necessary change may be due to either an organizational inability or unwillingness to change, or perhaps an unawareness of the need to change.

The growing body of strategic change research has documented the various behavioral forces that may act as barriers to change (Rajagopalan and Spreitzer, 1997), and several studies have explicitly discussed—with some surprise—the situation whereby firms do not change strategies, but should. Oster (1982), for example, notes that firm strategies may be 'sticky' from a behavioral point of view; i.e., organizations may be unwilling or unable to change strategies which have become entrenched. Similarly, Henderson and Clark (1990) and Leonard-Barton (1992) discuss the problems that incumbent firms have with adapting to new environmental circumstances that are at odds with their existing capabilities. For purposes of our study, conceptualizing and measuring insufficient change in a dynamic, multidimensional sense create the same complexities noted earlier in our discussion of beneficial change. We must consider multiple contingencies and also consider the timing, magnitude, and direction of change in determining whether change is insufficient.

Beneficial inertia → Dynamic fit

This quadrant represents the situation wherein an organization faces no (or little) need to change its current strategy and does not change, enjoying a performance benefit as a result. Inertia is likely to be beneficial when fit has already been achieved, and is not threatened by shifting contingencies. An organization's general environment may be relatively unchanging, or its local environment may shelter it from larger changes in its industry. Our emphasis on environmental *and* organizational contingencies, however, suggests that factors internal to the organization may also play a significant role in defining when inertia is beneficial, such as the situation in which a firm possesses resources that offset external pressures for change.

In fact, Selznick's (1948, 1957) original concept of 'distinctive competencies' suggests that organizations pursuing a particular strategy have also been accumulating strategy-specific competencies, and that staying within these competencies may be a preferred course of action. In fact, Selznick (1957) does not see environmental coalignment as the ultimate organizational objective or solution. He suggests that there are multiple paths toward organizational viability and that resources can often provide meaningful protection from environmental changes for organizations that possess them. Miles and Cameron (1982: 237) echo this view, arguing that 'forms of inertia may also represent opportunities . . . it may be more important for executive leaders to understand the limits of their organization's distinctive competencies and predispositions than to try and change them.'

While this relative deemphasis on environmentally driven adaptation may seem unusual, one can find parallel arguments elsewhere in the strategy literature. Early work by Hofer and Schendel

(1978: 144), for instance, suggested that exceptional resources can 'parry the threats that [a firm] faces in its external environment' and thus mitigate its need for strategic adaptation to achieve environmental fitness. Also, more recent work in the resource-based view of the firm has emphasized the merits of constructing strategies designed to capitalize on an organization's historical strengths, and counseled the wisdom of adhering to these strategies over time (Barney, 1991; Ghemawat, 1991). From this perspective, a firm's unique, historically accumulated, inimitable resources may provide the only potential source of sustained competitive advantage and, in addition, there may be difficulties entailed in developing resources necessary to support and implement alternative strategies (Peteraf, 1993). This suggests that both environmental and organizational factors should be used to assess the possibility of beneficial inertia.

Excessive change → Dynamic misfit

This quadrant represents the situation whereby an organization's environmental and organizational contingencies do not suggest the need to change, but the organization does so anyway, resulting in a performance detriment. Such excessive change may be viewed as reflecting an organization's well-intentioned but miscalculated pursuit of strategic fit. In this situation, the organization may have changed too much, overshooting its target of dynamic coalignment with relevant environmental and organizational contingencies. Excessive change may also result when an organization rightly attempts to adapt its strategy to one element of its context (e.g., its competitive environment), but fails to take account of how this change will affect its fitness along other dimensions (e.g., its resource base). Excessive change might also reflect less well-intentioned motives that are unrelated to adaptation, such as change aimed at empire building, or unreflective 'change for change's sake.'[10]

The possibility of excessive change has received relatively little attention in either the strategy or organization theory literatures—with several notable exceptions. Selznick's (1957) initial work, for instance, specifically argues that adapting too readily to environmental changes may negatively affect organizational performance and damage organizational competencies. He warns repeatedly against the dangers of what he terms 'opportunistic adaptation,' defined as organizational change undertaken without sufficient consideration of the organization's historical competencies or commitments. Hedberg (1981) also suggests that if a firm pursuing a particular strategy has also been accumulating strategy-specific competencies, then a shift away from that strategy is likely to be costly (at least in the short run) in terms of learning new competencies or unlearning existing ones. Rumelt (1995) also argues that resources such as reputation and customer loyalty may be damaged if an organization attempts to enter expanding markets far from its traditional domain, or offers lower-quality products that could weaken customers' identification with the firm. Finally, some organizational ecologists have also made broader, noncontingent claims about the costliness of change and the benefits of inertia (Hannan and Freeman, 1984).

To summarize, Figure 3 provides the foundation for understanding the dynamic pursuit of strategic fit and its likely performance implications. One implication of Figure 3 is that an emphasis on strategic fit can allow for a more nuanced approach to conceptualizing and testing the relationship between strategic change and performance. More specifically, while theorists have debated whether adaptation is rare vs. common and whether it is beneficial vs. harmful (Astley and Van de Ven, 1983; Bourgeois, 1984), Figure 3 highlights that one should expect to find evidence for *each* of the situations discussed above: (1) some organizations will change as much as they should, (2) others will not change as much as they should, (3) yet others will not change and should not change, and finally (4) others will change more than they should. To explain this variety and predict its consequences, we suggest that it is necessary to conceptualize a model of dynamic strategic fit that identifies and incorporates the environmental and organizational contingencies that should make strategic change more likely (and advantageous) for a given organization at a particular point in time. This modeling approach reflects our view that strategic fit is organizationally and temporally unique (rather

[10] It is possible, of course, that such changes might also represent highly proactive or anticipative changes before contingencies are clear.

than common across many organizations in a given context).

Such an approach can then be used to (1) generate an organization- and time-specific prediction of how much an organization should be changing, (2) compare predicted change with actual change empirically, and (3) assess whether organizations not acting in accordance with the contingency model, i.e., those falling in the two quadrants of excessive change and insufficient change in Figure 3, are apt to experience poor subsequent performance. We develop and test such a model in a longitudinal analysis of the U.S. S&L industry, as discussed below.

HYPOTHESES AND EMPIRICAL CONTEXT

As noted earlier, surprisingly little attention has been devoted to identifying the environmental and organizational circumstances that might make change more vs. less beneficial, due partly to the complexity of the task, and due partly to concerns about possible limited generalizability. Certain factors may be relevant in one industry, but not in another, or relevant at one time, but not in another. We propose a two-step approach to remedy this concern. Specifically, we first identify several broad categories of organizational and environmental factors that can make strategic change more vs. less desirable (based on existing strategy and organization theory literatures), and then discuss the specific operationalization of such factors in conjunction with our industry and time-specific empirical context (the S&L industry in the 1980s).

We suggest that an ideal empirical context for developing and testing a contingency model of dynamic strategic fit and performance would have the following features. First, the organizations under study would be facing changing environmental conditions, suggesting a possible need for strategic change (otherwise, there would be much less—if any—general impetus for change). Second, within this changing industry-specific setting, there would also be differences in organizational attributes and local environmental conditions (otherwise, there would be much less—if any—organizational and local environmental heterogeneity). Third, there would also be some controversy/ambiguity surrounding the appropriateness of changing core strategies (otherwise, there would be no situation in which inertia would be considered a viable option). Fourth, the empirical context would be sufficiently well understood by observers such that specific relevant environmental and organizational factors likely to affect strategic fit could be identified (otherwise, one would have difficulty trying to identify the contingencies likely to affect the desirability of staying with vs. changing that core strategy). Finally, one would also be able to observe empirically both the changes in core strategies (otherwise, one could not compare predicted changes in strategy with actual changes), and the performance implications of such change (otherwise, one could not examine whether organizations following the contingency model of change outperform those that do not).

The American S&L industry provides an excellent arena for predicting and assessing empirically the likelihood and performance implications of changes in an organization's core strategy. It meets virtually all of the empirical desiderata mentioned above. In particular, the industry faced comprehensive and dramatic changes during the 1980s (White, 1991; Haveman, 1992). Traditionally, the central mission of firms in the S&L industry was to take in small deposits and make these funds available as residential mortgage loans within a particular geographic region (Eichler, 1989). These activities historically took place within a highly regulated environment with limited competition. However, in the late 1970s and early 1980s, S&Ls faced unprecedented and unanticipated major increases in interest rates, effectively threatening the capital base of the industry.[11] At that time, S&Ls, with their historical emphasis on long-term residential mortgage lending, were somewhat inflexible in their ability to pass these costs onto their customers. Congress also passed numerous acts that deregulated the industry (e.g., the Garn–St. Germain Depository Institutions Act of 1982), the effect of which was to allow S&Ls to move away, if they wished, from their traditional strategy of residential mortgage lending. The deregulation process was essentially

[11] A widely acknowledged and well-understood environmental feature that affects virtually all S&Ls is the interest rate structure for monies that S&Ls either collect as deposits or make available as loans.

complete by the beginning of 1984 (United States League of Savings Institutions, 1989).

Although the industry continued to be the major provider of residential mortgage loans (White, 1991), deregulation gave S&Ls broad new investment powers. New strategies emerged such as attempts by S&Ls to position themselves as providers of nonmortgage commercial and consumer loans. Further, many S&Ls ventured into real estate development as well as investments into stock and corporate debt securities (Balderston, 1985; Eichler, 1989; Haveman, 1992). Subsequently, however, a considerable number of thrifts experienced financial difficulties and required assistance from regulators. It should also be noted that the majority of S&Ls remained profitable and solvent during the turbulent period that followed deregulation (White, 1991). Clearly, some organizations changed their core strategy by altering their traditional reliance on residential mortgage lending, and some did not, and some benefited from changing while others did not. What is absent from the many discussions of the changes among S&Ls in this time period, however, is a more nuanced analysis that seeks to predict and explain this variety based on an understanding of the multivariate set of environmental and organizational contingencies facing each organization over this time period.[12]

Developing a model of strategic fit for S&Ls that is dynamic, multivariate, and normative, as offered below, may help in explaining why and when an S&L might move away from (or back toward) their traditional strategy of residential mortgage lending, and why some experienced financial performance and survival advantages from their specific actions while others did not. In other words, a contingency approach to dynamic strategic fit can predict and explain how each of the prototypical situations discussed earlier can be found in this industry: beneficial strategic change, beneficial inertia, insufficient strategic change, and excessive change. We now discuss the specific internal and external factors that comprise the multivariate model of dynamic strategic fit for S&Ls.[13]

Organizational factors: Competencies and resource advantages

As noted earlier, organizational resources and competencies can be critical contingencies for organizations contemplating strategic change (Selznick, 1957; Snow and Hrebiniak, 1980; Wernerfelt, 1984; Barney, 1991). Accordingly, we also propose that there exists a set of organizational competencies and input resource differences specific to the S&L industry that can provide an S&L with an advantage (or disadvantage) relative to other S&Ls.[14]

From our perspective, such resource differences and competencies serve as potentially important contingencies that can influence the desirability of an S&L's changing its reliance on the traditional strategy of residential mortgage lending. Such features can include (1) differences in an S&L's input resource costs, (2) the efficiency with which an S&L is able to manage its asset portfolio, and (3) the composition of that portfolio. We also consider how the trend in an S&L's overall financial performance can influence its likelihood of making strategic changes.

In terms of the cost of input resources, it is generally believed that S&Ls whose cost of funds (i.e., the funds used to make subsequent loans) is high will be disadvantaged relative to those whose input resource costs are lower (White, 1991). Also, given that depositors generally represent the cheapest form of funds (Balderston, 1985), one can extend this logic to suggest that S&Ls relying more heavily on other sources of funds, e.g., governmental sources, are at a competitive disadvantage, in terms of the cost of input resources. This suggests the following hypotheses:

> *Hypothesis 1: As an S&L's cost of funds increases (decreases), its reliance on the traditional S&L strategy of residential mortgage lending should decrease (increase).*

[12] Haveman (1992), for instance, assumes that all S&Ls face the same environment at a given point in time (she studies only S&Ls in California), and that all S&Ls have the same competencies. Our study, on the other hand, begins with the opposite assumption of heterogeneous and changing organizational competencies and environmental conditions.

[13] Given the wide variety of new strategic directions available to S&Ls in the 1980s, this study emphasizes changes in their traditionally established strategy of residential mortgage lending (and the performance implications of such change).

[14] We have attempted to identify resource or competency differences that have been established and recognized in the recent literature on S&Ls. However, we do not assume that ours is an exhaustive list.

Hypothesis 2: As an S&L's reliance on borrowing from governmental and other nondepositor sources of funds increases (decreases), its reliance on the traditional S&L strategy of residential mortgage lending should decrease (increase).

An organizational competency that may distinguish one S&L from another is an S&L's ability to efficiently manage its mortgage portfolio. In other words, if an S&L's portfolio management skills are high (as evidenced by a high rate of return on its mortgage portfolio), then maintaining or even expanding its reliance on the traditional strategy of residential mortgage lending may be appropriate. On the other hand, if an S&L's portfolio management skills are low (as evidenced by a low rate of return on its mortgage portfolio), this implies an operational deficiency that puts that S&L at a competitive disadvantage. Such a deficiency represents an organizational contingency that would likely lead an S&L to reduce its reliance on its traditional strategy. This competency-based argument suggests:

Hypothesis 3: As an S&L's rate of return on its mortgage portfolio decreases (increases), its reliance on the traditional S&L strategy of residential mortgage lending should decrease (increase).

Another prominent organizational resource difference that would suggest that an S&L needs to move away from its traditional mortgage business is the composition of the mortgage portfolio itself, i.e., the degree to which the S&L's loan portfolio is heavily weighted towards fixed-rate (vs. adjustable rate) mortgages. Specifically, the interest rate gap between what an S&L pays for deposits and what it receives from loans is most problematic for an S&L that holds many long-term, fixed-rate mortgages (White, 1991). This suggests:

Hypothesis 4: As an S&L's emphasis on fixed rate mortgages increases (decreases), its reliance on the traditional S&L strategy of residential mortgage lending should decrease (increase).

Finally, an overall measure of a resource deficiency that may stimulate needed change is the financial situation of the organization, as indicated by poor prior performance. Poor performance can also be viewed as providing indirect evidence of a lack of organizational competency. While poor prior performance does not suggest specifically whether a change in strategy will improve performance, it does imply that the current strategy is inadequate, and therefore that a change in that core strategy may be necessary (Ginsberg, 1988; Ocasio, 1995). For S&Ls, a common indicator of overall performance is net worth (Haveman, 1992). This suggests the following hypothesis:

Hypothesis 5: As an S&L's net worth decreases (increases), its reliance on the traditional S&L strategy of residential mortgage lending should decrease (increase).

Environmental factors: Micro and macro forces

Dess, Ireland, and Hitt (1990) have suggested that single-industry studies should identify subenvironments when analyzing environmental effects on strategy. Lenz's (1980) study of savings institutions also highlights the importance of microenvironmental variation, as does Thompson's (1967) well-known discussion on the relevance of task environments for understanding adaptation. One central feature that may affect the propensity of organizational adaptation is the competitive environment of a local area. Organizations often look to local competitors for cues regarding the appropriateness of potential strategic changes. Such attempts could be explained from perspectives assuming greater rationality (e.g., adaptation via vicarious learning) and lesser rationality (e.g., bandwagon effects due to blind imitation). In either case, one might expect that S&Ls will be more likely to change their reliance on residential mortgage lending if they observe local competitors doing the same, *ceteris paribus*. This suggests the following hypothesis:

Hypothesis 6: As an S&L's local competitors' reliance on residential mortgage lending decreases (increases), its reliance on the traditional S&L strategy of residential mortgage lending should decrease (increase).

Macroenvironmental factors, i.e., those that affect all organizations in the population, clearly

can also affect the desirability of strategic change over time. As noted above, the late 1970s and early 1980s were particularly turbulent times for S&Ls, driven largely by the dramatic and unprecedented increases in interest rates. S&Ls with heavier emphases on long-term residential mortgage lending would be less able to respond to these short-term fluctuations by passing the costs of higher interest rates onto their customers. Interestingly, there was a substantial decline in interest rates later in the 1980s. From a dynamic strategic fit perspective, this pattern of interest rate variation implies that when faced with higher interest rates S&Ls should attempt to move away from their traditional strategy of residential mortgage lending, but not in lower interest periods. This suggests the following straightforward hypothesis:

Hypothesis 7: As interest rates increase (decrease), an S&L's reliance on the traditional strategy of residential mortgage lending should decrease (increase).

Performance implications

A core assumption of a contingency model of strategic fit is that performance suffers for organizations whose behavior is at odds with the normatively specified model. Similarly, in the present context, our model of dynamic strategic fit suggests that S&Ls whose strategic actions deviate from the model will experience deleterious performance effects. However, as the 2×2 framework developed earlier in Figure 3 highlights, there are two forms of such deviations, each of which implies misfit of the organization's strategy with its environmental and organizational context. Specifically, a firm can be either 'above the line,' i.e., excessive change, or 'below the line,' insufficient change. Since contingency predictions of strategic fit view both forms of deviation as evidence of misfit that negatively affects performance, we propose the following:

Hypothesis 8: S&Ls deviating from the contingency model of change will perform worse than S&Ls following the model.

Figure 3 also illuminates another aspect of the question of fit that allows us to explore the performance hypothesis (Hypothesis 8) in further detail. Specifically, while our contingency framework does not specify any asymmetry between the performance implications of deviations from the contingency model that are 'above the line,' vs. 'below the line,' it does allow an isolation of the two forms of deviation from the model. This may be of interest to students of strategic fit because the literature has emphasized the negative performance consequences of insufficient change and has generally not considered the consequences of excessive change (Donaldson, 1995). Secondly, while our framework also specifies no asymmetry between the performance implications of the other two quadrants in Figure 3 (beneficial change and beneficial inertia), it does permit a relative assessment of the performance consequences associated with each. This may also be of interest to researchers interested in strategic fit, given that literature's traditional assumption of comparably positive performance consequences for beneficial change and beneficial inertia, respectively.[15] Assessing such differences may also be of interest to researchers interested more generally in organizational change, such as those strategists and ecologists who have debated—or at least differentially emphasized—the positive performance consequences of beneficial adaptation vs. functional inertia, respectively (Boeker, 1989; Hannan and Freeman, 1984).[16] Therefore, in addition to the specific directional hypotheses stated above, we also explore the following supplemental hypotheses:

Supplemental Hypothesis #8a: Are there performance differences between S&Ls deviating in different directions (i.e., insufficient change vs. excessive change) from the contingency model of change?

[15] Note that although the quadrant comparison of beneficial change and beneficial inertia refers to dichotomous characterizations (change vs. no change), the empirical test of this specific research question views change in continuous terms, examining whether organizations engaging in larger amounts of actual change (motivated by larger amounts of needed change) experience the same positive performance outcomes as organizations engaging in smaller amounts of change (motivated by smaller amounts of needed change). Specifying beneficial inertia as only the condition of absolutely no change (actual and needed) would have been unnecessarily restrictive.

[16] Note that our contingency approach defines functional inertia as the absence of both actual organizational change *and* the absence of any need to change, as defined by relevant organizational and environmental contingencies. While we view this as an improvement over other noncontingent perspectives on functional inertia, the difference should be remembered when interpreting the empirical findings.

Supplemental Hypothesis #8b: Are there differing performance consequences for S&Ls whose actions reflect beneficial change vs. beneficial inertia?

METHOD

Data

Financial reports submitted by all S&Ls to the Federal Home Loan Bank Board were the major source of data for this study. In particular, we included in the study all U.S. S&Ls that reported data between the years 1980 and 1988. Our resultant data set contained observations on over 4000 S&Ls over a 9-year period.[17] Additional data on organizational failures were obtained directly from the Office of Thrift Supervision.

Measures

Strategic change

We defined strategic change in terms of change in residential mortgage lending from year to year. As mentioned above, residential mortgage lending constitutes the historic core business of thrifts and the alteration of this business represents a significant change in strategy. More specifically, our measure of change in each year was (residential mortgage lending$_{t+1}$/total assets$_{t+1}$) − (residential mortgage lending$_t$/total assets$_t$).[18]

Firm performance

We employed two separate measures of organizational performance. First, we used ROA at time t + 1, which we defined as (net income$_{t+1}$/total assets$_{t+1}$). ROA is a standard measure of operating performance in organizational research (Baliga, Moyer, and Rao, 1996; Wiersema and Bantel, 1993), in banking research (Deephouse, 1996), and in prior studies of S&Ls (Lenz, 1980; White, 1991; Bresser, Dunbar, and Jithendranathan, 1994). It is also particularly appropriate for our study, since our strategy measure captures how S&Ls allocate their assets, and ROA measures how these assets perform subsequently. A 1-year time lag is appropriate, because our strategic change measure assesses *realized* changes in asset allocation, and there is little reason to believe that ROA should lag long behind asset changes. Our second performance measure was organizational failure. There were numerous failures among S&Ls during the 1980s. We defined failure as the point when an S&L was taken into conservatorship by government regulators. This is an appropriate measure of failure because the regulatory safety net provided by the government prevents failing S&Ls from closing in a conventional manner. Regulators take over failing S&Ls and arrange for their liquidation or, more typically, their subsequent merger with healthy thrifts (White, 1991).[19]

Organizational and environmental contingencies

The specific internal and external contingency measures which we included in our model are as follows. In order to test Hypothesis 1, we measured *cost of funds* as total interest paid$_t$/total deposits and liabilities$_t$, consistent with prior research (Bresser *et al.*, 1994). For Hypothesis 2, we measured *percentage of borrowed funds* as total borrowed funds$_t$/total liabilities$_t$. To test Hypothesis 3, we measured *return on mortgage lending* as total interest received on mortgages$_t$/total mortgage assets$_t$. For Hypothesis 4, we measured *emphasis on fixed rate mortgages*, as fixed rate mortgages$_t$/total mortgages$_t$. For Hypothesis 5, we created a dummy variable capturing *decline in net worth*, which was coded as 1 when (total assets$_t$ − total liabilities$_t$) was less than (total assets$_{t-1}$ − total liabilities$_{t-1}$). To test Hypothesis 6, we measured an S&L's *local competitors' reliance on residential mortgage lending*

[17] The number of reporting S&Ls varies from year to year as a result of closures, mergers, and new entries. The number of years included varies across some analyses because of the need to lag certain variables.

[18] As an example, consider a hypothetical S&L with 90 percent of its assets in residential mortgages in 1985 and 70 percent in 1986. This firm would receive a score of −20 on this variable, indicating a movement away from mortgage lending. An S&L *increasing* residential mortgage lending from 70 to 90 percent would receive a score of +20.

[19] We also estimated models predicting exit by any means, including mergers. Given that mergers can occur among healthy thrifts, failure is a preferable measure of performance; in any event, the results of both analyses were generally similar. In addition, while our analyses examine subsequent performance with a 1-year lag, we also examined both ROA and failure over a 2-year period, and again obtained generally similar findings. These results are available from the authors upon request.

as the percentage of total assets that other S&L's within a focal thrift's 3-digit zip code had in residential mortgage lending at time *t*.[20] Finally, to test Hypothesis 7, we defined the macroenvironmental variable *interest rates* as the average prime rate which banks charged during a particular period.

Deviation from needed strategic change

Three different methods are used to assess the degree to which S&Ls' changes in strategy were consistent with these internal and external contingencies in a given year. First, we measured the difference between the actual amount of change that was undertaken by an S&L in a given year and the level of strategic change that was suggested, cumulatively, by our contingency model. To create this measure of (in)congruence, we obtained a standardized residual from our generalized least-squares model of strategic change (discussed further below) for each observation in our data, and then computed the absolute value of this residual. The resulting measure (*absolute value of residual*) captures the extent to which the change undertaken by an individual thrift in a given year deviates from the amount of change predicted by our multivariate contingency model. This absolute deviation, then, was used to predict subsequent performance in terms of both ROA and organizational survival chances. The use of residuals to examine contingency relationships is considered an accepted technique, as discussed in Van de Ven and Drazin (1985) and Venkatraman (1989).

Second, we also computed two interaction terms to explore the Supplementary Hypotheses 8a and 8b, which addressed the possible performance differences or asymmetries between insufficient and excessive strategic change, and between beneficial inertia and beneficial strategic change. The first interaction term uses the absolute deviation score described above and multiplies it by a dichotomous variable measuring whether the deviation overshoots vs. undershoots the amount of change predicted by the model. Using this measure of *absolute value of residual* × *deviation type*, we can assess whether deviation that exceeds recommended levels (excessive change) results in a different performance effect relative to deviation that fails to reach the level suggested by the contingency model (insufficient change). The second interaction term uses the same absolute deviation score described above and multiplies it by the level of predicted strategic change. Using this measure of *absolute value of residual* × *absolute predicted value* allows us to examine whether functional inertia has a same positive effect on performance as beneficial strategic change.

Finally, although our residual analysis is sufficient to test Hypothesis 8, we used individual interactions as an additional test of this hypothesis. Specifically, we computed a series of seven interaction terms by multiplying our strategic change measure with each of the seven individual contingency factors. This alternative approach is consistent with the 'fit as moderation' approach to testing contingency relations described by Venkatraman (1989), whereas our earlier residual analysis is most consistent with what Venkatraman calls the 'fit as profile deviation' approach. These interaction terms also allow us to examine the individual importance of each of our seven contingency factors. Thus, for example, if a high cost of funds suggests a need to decrease dependence on residential mortgage lending (as Hypothesis 1 suggests), we should expect to see a negative and significant coefficient for the 'change × cost of funds' term in our models of financial performance. We would expect this because such a coefficient would suggest that further increasing residential mortgage lending when saddled with a high cost of funds is inappropriate. Likewise, such a coefficient would suggest that decreasing residential mortgage lending (to compensate for the burden of a high cost of funds) would have a beneficial effect on performance for a given S&L within a given year.

Control variables

We also added a number of control variables to our models of change and performance. These include *total assets* (as a measure of organizational size), *prior return on assets, prior change in residential mortgage lending, prior level of residential mortgage lending,* and the number of S&Ls within a focal S&L's home state (*state density*). Together,

[20] Some S&Ls have no competition within their local area. In these instances, we used the mean level of residential mortgage lending within the thrift's home state as a proxy measure of its competitor's activities. This substitution was necessary for about 4 percent of all observations.

these controls enable a more precise interpretation of our strategic change and performance results. The various models involving interaction terms which we estimated also included both lower order terms to improve the precision of the interaction term (Harrison and Mitchell, 1995). Descriptive statistics and correlations for all variables are presented in Table 1.

Analysis

We employed time series regression methods to assess the hypothesized relationships between change, performance, and organizational/environmental contingencies. Specifically, we used generalized least-squares regression (Sayrs, 1989; Judge *et al.*, 1982) to examine how the variables in our multivariate contingency model affected strategic change among S&Ls and, in turn, to examine the effects of dynamic strategic fit/misfit on subsequent financial performance. Generalized least-squares regression is appropriate because pooled cross-sectional time series data (i.e., multiple organizations observed at multiple points in time) of the type we employ violate basic assumptions about homoskedasticity which are required for ordinary least-squares regression. Generalized least-squares mitigates the problems caused by nonconstant variance across firms, and has increasingly been used in strategy and organizational research for this reason (e.g., Bergh and Holbein, 1997).

To examine how adhering to our contingency model related to our other performance measure (organizational mortality), we employed a discrete time event history model (Allison, 1984; Yamaguchi, 1991).[21] This form of analysis entails performing simple logit analysis on pooled time series data with a binary dependent variable. It allows one to estimate the hazard of an event (organizational failure) occurring in any one of t discrete time periods as a function of covariates that are allowed, but not required, to vary over time. The discrete time model has the following general form:

$$\log(P(t)/(1 - P(t)) = a + b1\times1 + b2\times2(t)$$

where $\log(P(t)/(1 - P(t))$ represents the log-odds of the event occurring for a particular organization at any time t, a represents the baseline hazard of the event occurring, $b1$ represents the change in the log-odds for each one unit increase in a time invariant covariate $\times1$, and $b2$ represents the change in the log-odds for each one unit increase in a time varying covariate $\times2(t)$. The main advantage of using this model over a continuous time model is that the discrete time model does not require exact information on the timing of events and is thus well suited to handling ties on the dependent variable. Accordingly, it is appropriate when measurement is based on discrete times of fairly large intervals (e.g., years) and when the event of interest sometimes occurs for a substantial number of organizations at the same time, as is the case in this study (Petersen, 1991; Yamaguchi, 1991). The discrete time model has been shown to produce results that very closely approximate those produced by continuous time models in virtually all cases (Allison, 1984).

RESULTS

Our contingency model of dynamic strategic fit predicts that certain organizational and environmental factors (Hypotheses 1–7) should affect the direction, magnitude, and timing of changes in the traditional core strategies of S&L institutions. The results of our regression models indicate considerable support for this set of hypotheses. Specifically, Table 2 reveals that S&Ls were most likely to decrease significantly their reliance on residential mortgage lending when they faced: a high cost of funds (Hypothesis 1), a heavy dependence on borrowed funds (Hypothesis 2), poor returns on their mortgage portfolio (Hypothesis 3), heavy reliance on fixed-rate mortgages (Hypothesis 4), declining net worth (Hypothesis 5), local competition which had already diversified away from mortgage lending (Hypothesis 6), and an environment of high interest rates (Hypothesis 7).[22] Taken together, these

[21] Given the unavoidable left censoring, it is important to note that 1980 is a relevant time point from which to begin the analyses. Specifically, as noted earlier, the 1980s represented a decade in which environmental and organizational heterogeneity and change became most pronounced (White, 1991). Furthermore, very recent research on change suggests that dynamic analyses can be fruitfully applied despite left censoring (Haveman, 1992; Kelly and Amburgey, 1991).

[22] Stated differently, our results also suggest that S&Ls were most likely to increase their reliance on their traditional business when faced with the opposite set of internal and external contingencies.

Table 1. Descriptive statistics and correlations[a]

	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Change in res. mortgage lending (t to t+1)	–0.013	0.072														
2. Cost of funds (t)	0.044	0.008	–0.140													
3. Borrowings/total liabilities (t)	0.063	0.078	–0.009	0.068												
4. Return on mortgage portfolio (t)	0.050	0.008	0.060	0.463	0.038											
5. Fixed rate mortgages/total mortgages (t)	0.696	0.253	–0.066	0.034	–0.122	–0.284										
6. Decline in net work (t–1 to t)	0.312	0.463	–0.074	0.410	0.077	–0.015	–0.014									
7. % of competitor assets in mortgages (t)	0.764	0.090	–0.043	0.057	–0.035	–0.242	0.437	0.022								
8. Interest rate (t)	0.085	0.023	–0.135	0.298	–0.006	–0.111	0.453	0.101	0.398							
9. Mortgages/total assets (t)	0.772	0.115	–0.279	0.110	–0.020	–0.298	0.351	0.041	0.411	0.307						
10. Total assets (t)	11.312	1.341	–0.003	0.012	0.453	0.028	–0.233	0.002	–0.113	–0.130	–0.019					
11. Change in res. mortgage lending (t–1 to t)	–0.011	0.078	–0.073	–0.071	–0.014	–0.148	–0.077	–0.014	0.015	–0.003	0.247	–0.058				
12. Return on assets (t+1)	–0.002	0.019	0.042	–0.017	–0.065	0.073	0.129	–0.207	0.067	0.075	0.102	–0.046	0.055			
13. Return on assets (t)	0.000	0.014	0.035	–0.130	–0.070	0.057	0.087	–0.338	0.052	0.019	0.091	–0.021	0.053	0.413		
14. Organizational death (t+1 to t+2)	0.012	0.111	–0.013	–0.045	0.082	–0.049	–0.109	0.140	–0.077	–0.083	–0.089	0.046	–0.014	–0.298	–0.255	
15. State density (t)	144.188	97.072	–0.019	–0.025	–0.100	–0.079	0.078	0.022	0.026	0.072	0.021	–0.044	–0.001	–0.046	–0.020	0.007

[a]Coefficients greater than 0.03 are significant at 0.01.

Table 2. Generalized least squares regression: Effects of organizational and environmental contingencies on change in residential mortgage lending from *t* to *t*+1

Predictor	Coefficient (standard error)
Cost of funds (*t*)	–1.2052***
	(0.0985)
Borrowings/total liabilities (*t*)	–0.0199***
	(0.0058)
Return on mortgage portfolio (*t*)	0.9612***
	(0.0680)
Fixed rate mortgages/total mortgages (*t*)	–0.0060**
	(0.0023)
Decline in net worth (*t*–1 to *t*)	–0.0032**
	(0.0010)
% of competitor assets in mortgages (*t*)	0.0534***
	(0.0056)
Interest rate (*t*)	–0.2530***
	(0.0304)
Mortgages/total assets (*t*) +	–0.1834***
	(0.0043)
Total assets (*t*) +	0.0012***
	(0.0003)
Change in % mortgage lending (*t*–1 to *t*)	0.0043
	(0.0055)
Constant	0.1218***
	(0.0081)
N	28718 (Org-Years)
Chi square	4034.93

Notes:
(1) *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed).
(2) + Indicates that variable has been log-transformed.
(3) The model also includes a series of period dummy variables which are not reported.
(4) Time periods are one year long.

findings suggest that the our normative model of dynamic strategic fit does predict which S&Ls would change strategies, when they would change, in which direction they would change, and how much they would change.

Turning to the performance implications of fitness, our first set of analyses regarding performance generally supports the notion that S&Ls adhering to our normative model benefited from doing so. We begin with Models 1 and 4 in Table 3. They indicate that—consistent with Hypothesis 8—the greater an S&L's deviation from the contingency model of change, the worse its performance. The negative coefficient for the variable 'absolute value of deviation' in Model 1 indicates that S&Ls deviating from our model experienced lower subsequent ROA in any given period. The positive coefficient for this variable in Model 4 indicates that deviation from the model significantly increased the probability of failure. In other words, S&Ls conforming more closely to our model (i.e., those with smaller absolute residual values in a given period) enjoyed higher subsequent ROA (Model 1) and a lower risk of failure (Model 4).

Table 3 also provides evidence for the exploratory Supplementary Hypotheses #8a and #8b, which address possible asymmetries in change/performance relationships that are not implied directly by our contingency model. Supplemental Hypothesis #8a, which asks whether there are differences between the two types of dynamic misfit that we identified, is answered in Models 2 and 5 in Table 3. The negative coefficient for the interaction term 'Absolute value of residual × deviation type' in Model 2 suggests that insufficient change is more damaging to subsequent ROA than is excessive change. The positive interaction term in Model 5 has the same implication: insufficient change is more likely to lead to organizational failure than is excessive change. Thus, the relationship between deviation from the contingency model and subsequent performance does, in fact, vary depending on whether the deviation score is positive (i.e., excessive strategic change) vs. negative (insufficient strategic change).

Supplementary Hypothesis #8b, which asked whether the two types of fit we identified (i.e., beneficial strategic change and functional inertia) are equally performance enhancing, is answered in Models 3 and 6 in Table 3. The positive and significant coefficient for the interaction term 'absolute value of residual × absolute predicted value' in Model 3 indicates that there is a difference between these two types of fit. Specifically, it suggests that S&Ls achieving strategic fit by engaging in substantial strategic changes (i.e., having high levels of needed and actual change) obtained more positive performance changes that S&Ls facing the situation of beneficial inertia (i.e., low levels of needed and actual change).[23] One draws a similar conclusion from the negative coefficient for this variable in Model 6, which indicates that S&Ls that required—and engaged

[23] Recall that we control for prior performance; i.e., the results are not driven by a 'regression to the mean' performance effect.

Table 3. Generalized least squares estimates of effects of deviation from contingency prediction line on subsequent performance and survival chances

	Random effects regression dependent variable: Return on assets at time *t*+1			Event history analysis dependent variable: Organizational death at time *t*+1		
Predictor	Model 1 Overall	Model 2 Insufficient vs.excessive strategic change	Model 3 Beneficial strategic change vs. beneficial inertia	Model 4 Overall	Model 5 Insufficient vs. excessive strategic change	Model 6 Beneficial strategic change vs. beneficial inertia
Absolute value of residual (*t*)	–0.0204***	–0.0174**	–0.0277**	1.9413*	0.5069	7.1204***
	(0.0021)	(0.0026)	(0.0032)	(0.9645)	(1.2830)	(1.5031)
Absolute value residual X deviation type		–0.0095*			4.1645*	
		(0.0044)			(1.9184)	
Deviation type		0.0004			–0.1242	
		(0.0003)			(0.1492)	
Absolute value residual X absolute predicted value			0.2352**			–215.2164***
			(0.0812)			(48.9880)
Absolute predicted value			–0.0130			28.1128***
			(0.0093)			(5.1003)
ROA (*t*)	0.5523***	0.5520***	0.5525***	–33.4640***	–33.2931***	–33.5690***
	(0.0073)	(0.0073)	(0.0073)	(2.0236)	(2.0281)	(2.0404)
State Density (*t*)	–6.28E-06***	–6.29E-06***	–6.27E-06***	–6.43E-04)	–6.35E-04	–5.33E-04)
	(1.05E-06)	(1.05E-06)	(1.05E-06)	(5.63E-04)	(5.64E-04)	(5.62E-04)
Constant	–0.0013***	–0.0014***	–0.0010**	–3.7815***	–3.7426***	–4.3236***
	(0.0003)	(0.0003)	(0.0003)	(0.1124)	(0.1405)	(0.1526)
N	28718	28718	28718	28718	28718	28718
Chi squared	6549.7***	6555.06***	6560.36***	601.57***	606.71	631.57
Number of events				357	357	357

Notes:
(1) *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
(2) + Indicates that variable has been log-transformed.
(3) The model also includes a series of period dummy variables which are not reported.
(4) Time periods are one year long.
(5) Deviation type: 1 = insufficient, 0 = excessive.

in—relatively higher levels of change enjoyed a lower risk of failure than did S&Ls that required and engaged in lower levels of change. In other words, S&Ls with similar levels of deviation from the contingency model do experience different subsequent performance outcomes (ROA), based on the magnitude of change that was required.

Taken together, these two empirical findings regarding possible asymmetries in comparative states of fit and misfit suggest that (1) the dangers of misfit are greater under the situation of insufficient change—relative to the situation of excessive change, and (2) there may be some positive externalities associated with engaging in substantial change to achieve strategic fit—relative to achieving fitness with little or no strategic change.

The residual approach discussed above provides appropriate evidence for testing the performance implications of S&Ls' adhering (or not adhering) to our normative model of strategic fit (Hypothesis 8), using the full set of variables in our model. Nonetheless, we provide in Table 4 additional evidence as to how S&Ls' adherence to each of the seven *individual* contingencies in our model affected subsequent ROA (see Models 2–8, respectively).[24] For example, in Model 2, the negative coefficient for the interaction term 'change in residential mortgage lending × cost of funds' indicates that decreasing residential mortgage lending was more beneficial for those S&Ls burdened with a high cost of funds.[25] In Model 3, the negative coefficient for the interaction term 'change in residential mortgage lending × borrowed funds' indicates that decreasing residential mortgage lending was more appropriate in performance terms for S&Ls with higher levels of dependence on borrowed funds.

Model 4 of Table 4 shows that S&Ls with poor returns on their mortgage portfolios found it less advantageous to decrease their mortgage lending activity, relative to those S&Ls with higher returns on their mortgage portfolios (as evidenced by the negative coefficient for 'change in residential mortgage lending × return on mortgage lending'). While our expectation was that S&Ls with poorly performing mortgages would benefit *more* from change, it may be that efficient portfolio management skills represent a more generalized competency or 'meta-competency' (Collis, 1994) that also serves them well in other banking activities. Model 5 of Table 4 shows that decreasing residential mortgage lending was more appropriate in performance terms for S&Ls which had a higher proportion of fixed-rate mortgages (see the coefficient for 'change in residential mortgage lending × percentage fixed rate mortgages'). Stated differently, S&Ls with the resource advantage of a mortgage portfolio comprised less of fixed rate-mortgages can continue to maintain or even increase their reliance on residential mortgage lending. Model 6 suggests that the interaction between level of strategic change and decline in net worth is not a significant predictor of performance.[26]

Models 7 and 8 of Table 4 provide statistically significant evidence on the performance implications of congruence with the micro- and macro-environmental contingencies that we identified earlier. In Model 7, the negative coefficient for 'change in residential mortgage lending × percentage mortgages of competitors' indicates that S&Ls tended to perform *worse* when they imitated the strategies of their peers (recall that Table 2 showed evidence that imitation of geographic competitors did tend to occur). Thus, while learning perspectives (Levitt and March, 1988) imply possible performance advantages from imitation (and S&Ls doing so may have also expected such gains), our results suggest that changing strategies in a way that *differentiates* an S&L from its local competition are more effective in enhancing both financial performance and survival chances. Finally, the results in Model 8 of Table 4 (i.e., the coefficient for 'change in residential mortgages × interest rate') clearly indicate that increasing residential mortgage lending was detrimental to performance for S&Ls operating in an environment of high interest rates.[27]

[24] Model 1 in Table 4 simply shows the main effects of the various contingency variables and the strategic change variable on subsequent performance.

[25] Stated differently, such change was less necessary and less beneficial for those S&Ls having a lower cost of funds.

[26] Recall that we suggested earlier that the poor prior performance hypothesis (Hypothesis 5) did not suggest specifically whether a change in strategy will improve performance; rather, it was intended to test whether declining performance stimulates a change in an S&L's current strategy.

[27] In unreported analyses, we also examined the same set of seven interaction terms and their relation to a more severe measure of organizational performance; namely, organizational failure. The results, while not quite as strong, generally mirrored those reported in Table 4. These results are available from the authors upon request.

Table 4. Pooled cross sectional time series regression: Main and contingent effects of change in residential mortgage lending on change in ROA

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Change in res. mort.		–0.5252**						
X cost of funds		(0.1041)						
Change in res. mort.			–0.0521***					
X % borrowed funds			(0.0137)					
Change in res. mort.				–0.3505***				
X return on morts.				(0.0410)				
Change in res. mort.					–0.0731***			
X % fix rate morts.					(0.0051)			
Change in res. mort.						–0.0010		
X decline in net worth						(0.0029)		
Change in res. mort.							–0.1115***	
X % mort. of comps.							(0.0147)	
Change in res. mort.								–0.6215***
X interest rate								(0.0709)
Cost of funds (t)	–0.2821***	–0.3336***	–0.2848***	–0.3769***	–0.2696***	–0.2822***	–0.2805***	–0.2798***
	(0.0248)	(0.0268)	(0.0248)	(0.0272)	(0.0247)	(0.0248)	(0.0248)	(0.0248)
Borrowings/total liabilities	–0.0022	–0.0019	–0.0026+	–0.0020	–0.0022	–0.0022	–0.0023	–0.0021
(t)	(0.0014)	(0.0014)	(0.0015)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)
Return on mortgage	0.2139***	0.1904***	0.2133***	0.2575***	0.1973***	0.2137***	0.2129***	0.2098***
portfolio (t)	(0.0171)	(0.0177)	(0.0171)	(0.0178)	(0.0171)	(0.0171)	(0.0171)	(0.0171)
Fixed rate mortgages/total	0.0127***	0.0126***	0.0127***	0.0127***	0.0122***	0.0127***	0.0127***	0.0126***
mortgages (t)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)
Decline in net worth (t–1	–0.0048***	–0.0048***	–0.0048***	–0.0046***	–0.0048***	–0.0048***	–0.0048***	–0.0048***
to t)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
% of competitor assets in	0.0062***	0.0061***	0.0062***	0.0061***	0.0059***	0.0062***	0.0049***	0.0060***
mortgages (t)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)
Interest rate (t)	–0.0069	–0.0119	–0.0069	–0.0143+	–0.0112	–0.0070	–0.0090	–0.0148+
	(0.0076)	(0.0076)	(0.0075)	(0.0076)	(0.0075)	(0.0076)	(0.0075)	(0.0076)
Mortgages/total assets (t)	0.0152***	0.0153***	0.0152***	0.0157***	0.0154***	0.0153***	0.0154***	0.0153***
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
Total assets (t) +	–0.0001	–0.0001	–0.0001	0.0000	0.0000	–0.0001	–0.0001	–0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Change in residential	0.0153***	0.0390***	0.0192***	0.0341***	0.0592***	0.0157***	0.0966***	0.0663***
mortgages (t to t+1)	(0.0015)	(0.0049)	(0.0018)	(0.0026)	(0.0034)	(0.0018)	(0.0108)	(0.0060)
Change in res. mortgage	0.0112***	0.0111***	0.0110***	0.0115***	0.0114***	0.0112***	0.0113***	0.0113***
(t–1 to t)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)
State density	–5.10E-06***	–5.15E-06***	–5.03E-06***	–5.11E-06***	–5.03E-06***	–5.10E-06***	–5.07E-06***	–5.20E-06***
	(1.03E-06)	(1.03E-06)	(1.03E-06)	(1.03E-06)	(1.03E-06)	(1.03E-06)	(1.03E-06)	(1.03E-06)
ROA (t)	0.4592***	0.4589***	0.4598***	0.4556***	0.4605***	0.4591***	0.4606***	0.4585***
	(0.0076)	(0.0076)	(0.0076)	(0.0076)	(0.0076)	(0.0076)	(0.0076)	(0.0076)
Constant	–0.0278***	–0.0240***	–0.0276***	–0.0258***	–0.0270***	–0.0277***	–0.0267***	–0.0267***
	(0.0020)	(0.0022)	(0.0020)	(0.0020)	(0.0020)	(0.0020)	(0.0020)	(0.0020)
Organization years	28718	28718	28718	28718	28718	28718	28718	28718
n:	4438	4438	4438	4438	4438	4438	4438	4438
Chi squared:	8430.58	8463.22	8449.08	8524.21	8695	8430.46	8504.65	8529.7

Notes:
(1) *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed).
(2) + Indicates that variable has been log-transformed.
(3) The model also includes a series of period dummy variables which are not reported.
(4) Time periods are one year long.

In summary, our use of two methods (i.e., deviation/residual and interaction term analyses) to test the performance implications of adherence to our model of dynamic strategic fit (Hypothesis 8) provides convergent statistical support. Models 1 and 4 of Table 3 directly support Hypothesis 8, showing that adherence to our normative model of strategic change had positive performance consequences. Table 4 yields similar overall conclusions, and also shows that congruence with the *individual* contingencies in our model generally had a beneficial effect on subsequent performance.

DISCUSSION

In this study, we have endeavored to develop a model of strategic fit that is dynamic, multivariate, and normative in nature. We have attempted to identify—in an industry-specific (S&L) context—a set of organizational and environmental factors that should affect the desirability of an S&L's changing its reliance on its core strategy. We then tested whether these factors led to the predicted differential changes in core strategies, and whether following vs. not following the contingency framework for dynamic strategic fit resulted in the predicted performance implications. In this way, we hope to provide a distinctive analytical approach that can shed light on both the antecedents and consequences of strategic change.

We have argued that identifying specific environmental and organization factors can provide unique time- and organization-specific predictions regarding strategic fit. We suggested that such an approach could provide clear, testable predictions regarding the desirable direction, magnitude, and timing of strategic change. We found that the theory-based contingencies that we identified (i.e., environmental changes, as well as organizational heterogeneity in attributes such as distinctive competencies and resource advantages) all significantly predicted changes in the core strategies of S&Ls. As we predicted, S&Ls facing the most severe environmental threats (e.g., a high interest rate environment) and the largest organizational resource and competency deficiencies tended to move away the most (and the earliest) from the traditional S&L strategy of residential mortgage lending.

One implication of our findings on the antecedents of strategic change is that organizations appear generally able to recognize changing environmental situations and to assess their resource limitations (Smith and Grimm, 1987; Zajac and Shortell, 1989; Zajac and Kraatz, 1993). These same results also highlight that S&Ls with distinctive competencies or resource-based advantages were most able to continue or even expand their emphasis on the traditional core S&L strategy of residential mortgage lending. This suggests that observed patterns showing that an organization is not changing its core strategy do not necessarily imply an unconscious or routinized activity path (Kelly and Amburgey, 1991), but may instead reflect a deliberate attempt to exploit or leverage its distinctive competencies. Only by specifying the relevant environmental and organizational contingencies (i.e., developing a model of dynamic strategic fit) can one distinguish between the two explanations.

Poor prior firm performance accelerated strategic change, as predicted. One literature-based interpretation is that this represents evidence of adaptation to performance feedback, rather than a threat-rigidity response (Ocasio, 1995; Staw, Sandelands, and Dutton, 1981). This interpretation is consistent with the notion of adaptation as a form of problemistic search (Cyert and March, 1963), whereby organizations experiencing a performance problem begin to consider alternative strategies. Our interpretation is that, independent of its other effects, poor prior performance provides firms with an indirect indicator of a lack of organizational competency and/or environmental misfit. This recognition of a lack of fitness, at least in part, leads an organization to consider alternative strategies. In summary, the ability of our environmental and organizational contingency variables to predict the direction, magnitude, and timing of strategic change suggests that our model can identify those organizations for whom change would be most desirable (and thus more likely).

We also used performance outcomes to test more explicitly whether our contingency model could identify the circumstances under which change would be most desirable. First, we used deviation/residual analyses to examine the performance implications of actual deviations from the level of expected change. Here, we observed that S&Ls 'off the line,' i.e., deviating in either

direction from the contingency model, experienced worse financial performance and higher death rates relative to those S&Ls changing in accordance with our model. In other words, change that is at odds with our contingency model (i.e., insufficient change and excessive change) is problematic for the S&Ls in our study. Supplemental interaction analyses (Table 4) that isolated the performance effects for each of the organizational and environmental contingency factors provided results that were largely, if not fully, consistent with the performance hypotheses. In summary, the two types of performance analyses suggest that the contingency model was generally able to specify *a priori* not only when a change in an S&L's core strategy was likely, but also when it was desirable (in terms of financial performance and survival chances).

Given that our model of dynamic strategic fit is based on a contingency logic, it is important to note how this study has addressed several potential limitations of traditional contingency models, as discussed in the strategy and organization theory literatures. Ginsberg and Venkatraman (1985), for example, suggest that contingency approaches have tended to focus too much on the environment–strategy (or structure) linkage—at the expense of the environment–performance linkage. Our study examines both of these linkages. Ginsberg and Venkatraman (1985) also criticize contingency approaches that seek to develop overly general measures and fail to recognize the need for industry-specific contingency measures. Our study emphasizes the construction of an industry-specific approach to predicting dynamic strategic fit and its performance implications (although we described our industry-specific measures in terms of more general constructs such as organizational competencies, competitive context, etc.). Traditional contingency theories have also been critiqued for usually focusing on bivariate relationships and static research designs (Miller and Friesen, 1984). Our study uses a longitudinal design to examine the issue of fit dynamically, and does so using a multivariate model. Finally, from an empirical perspective, evidence for contingency relationships may be sensitive to the specific methodology chosen (Van de Ven and Drazin, 1985). Our study used both residual analysis and interaction analysis techniques, as noted above.

We also sought to extend contingency approaches by posing and testing two additional supplemental hypotheses not predicted by a strict contingency model. First, we found evidence of an asymmetry between the performance implications of insufficient change and excessive change, with insufficient change emerging as the worse of the two forms of deviations from our contingency model. In other words, the dangers of misfit are greater under the situation of insufficient change, relative to the situation of excessive change. This may reflect more general differences in the reactive vs. proactive types of organizations: organizations acting more proactively, even when that proaction goes beyond what changing internal and external conditions require, may be better positioned for future performance gains relative to reactive organizations changing too little or too late (Hedberg, Nystrom, and Starbuck, 1976).

Secondly, we compared the two positive change/performance relationships, i.e., beneficial change and beneficial inertia, and found that beneficial change emerged as the better of the two forms of fit with the contingency model. As noted earlier, this implies that there may be positive externalities associated with a firm having to engage in substantial change to attain an improved alignment of its strategy with its internal and external circumstances, relative to a firm in a more stable situation of strategic fit. Perhaps strategic change stimulates a variety of other performance-enhancing changes within an organization. Viewed differently, the result suggests that, at least in this empirical context, the 'transition costs' borne by firms making substantial strategic changes appear relatively low when compared with the benefits of attaining dynamic strategic fit. In any event, while a strict contingency perspective presumes symmetry regarding the two sets of diagonal quadrants in Figure 3, our findings suggest that subsequent research on strategic fit should consider not only the four change/performance relationships defined earlier, but also consider theoretical rationales for potential asymmetries in those relationships. Empirically, the residual approach that we employed in our study can be useful for other researchers investigating such asymmetries in fit.

Our contingency approach for assessing dynamic strategic fit also has implications for the strategic change literature. First, we believe our study is uncommon in attempting to theorize

about the sources of environmental and organizational heterogeneity that should make change more vs. less *desirable*, rather than emphasizing only the behavioral factors that make change more vs. less *difficult* (Zajac and Kraatz, 1993; Rajagopalan and Spreitzer, 1997). We view our emphasis on dynamic strategic fit as providing a needed missing piece in the discussion of strategic change and performance, given that organizations differ at least as much in terms of their resource profiles, distinctive competencies, and local environmental contexts as they do in terms of internal political/social constraints (Kraatz and Zajac, forthcoming). Indeed, the recent growth in the resource-based perspective in the strategy field (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993) suggests that such resource heterogeneity may be a dominant factor predicting performance differences across organizations and across time. In any event, our study suggests the value of considering not only an organization's ability or willingness to change, but also its need to change (i.e., the potential for dynamic misfit).

In addition, we believe our analytical approach can address two related and longstanding debates in the strategy and organization theory literature: (1) do organizations typically change their strategies in response to environmental shifts and (2) what are the likely performance effects of such changes (Astley and Van de Ven, 1983; Bourgeois, 1984; Hannan and Freeman, 1977, 1984; Miller and Friesen, 1984; Singh, House, and Tucker, 1986). Ecological and strategy researchers have historically maintained different emphases on the phenomenon of strategic change. Ecologists have stressed that change should be rare because organizations find it very difficult to change (particularly larger and older ones), and because change is typically not beneficial. Strategists, on the other hand, have discussed how change should be more common because organizations can adapt, albeit not without difficulty, and that organizations will generally find it advantageous to do so, given changing organizational and environmental conditions.[28]

Our contingency approach and our empirical analyses help reconcile these debates not by showing that either strategic adaptationists or ecologists are more correct in their predictions regarding change and performance, but by specifying the circumstances under which each is correct. For example, our finding that insufficient adaptation has a negative subsequent performance effect indicates that those organizations unable to change may bear negative performance consequences as a result of their inertia, as ecologists have contended, but also that those organizations that change in a timely and appropriate way will experience performance benefits, as strategists have suggested. Similarly, we show that inertia can be functional, as ecologists maintain, but also that its functionality is defined by strategic considerations; i.e., inertia is functional when specific environmental conditions and organizational competencies suggest little or no need to change.

Additionally, we suggest that our analytical approach and empirical findings study can untangle the industry-specific debate between those who have contended that S&Ls generally *overreacted* to changing environmental and organizational conditions in the 1980s and those who have argued the opposite, i.e., that S&Ls *underreacted* to the need for strategic changes (Eichler, 1989; White, 1991). Specifically, our results show that some S&Ls overreacted while others underreacted, suggesting that neither single extreme view is correct. More generally, we believe our analytical approach can be applied in other contexts. Ideally, such application would lead to a deemphasis of broad, industry- or sector-wide generalizations regarding strategic fit, and turn attention toward recognizing and establishing the *uniqueness* of strategic fit for a particular organization at a particular point in time. In this way, our results provide empirical support for a dynamic conception of the matching/alignment concept in strategy, whereby a firm's core strategies need to be continuously aligned and realigned with internal resource profiles as well as external environmental factors (Amit and Schoemaker, 1993; Kraatz and Zajac, forthcoming).

In conclusion, we hope that our analytical approach toward assessing dynamic strategic fit

[28] Note that we are referring to central tendencies in the two perspectives. We do not view ecologists as arguing that change never happens, nor do we view adaptationists as arguing that change always (and easily) happens. Note also that the type of strategic change discussed and examined empirically in this study is a change in an organization's core—not peripheral—strategy, which ecologists suggest are the most risky and unadvisable type of organizational change (Haveman, 1992; Singh *et al.*, 1986).

can help in the effort to answer three related questions that have long interested strategy researchers: What factors drive a firm's strategic choices, what determines the appropriateness of such choices, and when are these choices no longer appropriate? The generalizability of our analytical approach can be examined in addressing these questions for firms in other industries. While our variables are certainly industry-specific, our approach is not. In addition, we do not claim to have considered all possible environmental and organizational factors that would predict dynamic strategic fit. Again, additional research could help in extending the set of factors examined in this study. Ideally, the result of increased attention to these issues would be that the concept of strategic fit—a key implicit concept in strategy research—becomes a more explicit and well-researched concept.

ACKNOWLEDGEMENTS

The comments of Don Bergh, Joel Baum, Ranjay Gulati, Richard Harrison, Willie Ocasio, Huggy Rao, Jim Wade, and Jim Westphal have been helpful in shaping this paper. We also thank Tina Dacin for providing some of the data used in the study.

REFERENCES

Allison, P. D. (1984). *Event History Analysis*. Sage, Newbury Park, CA.

Amit, R. and P. Schoemaker (1993). 'Strategic assets and organizational rent', *Strategic Management Journal*, **14**(1), pp. 33–46.

Andrews, K. R. (1971). *The Concept of Corporate Strategy*. Dow Jones Irwin, Homewood, IL.

Astley, W. G. and A. H. Van de Ven (1983). 'Central perspectives and debates in organization theory', *Administrative Science Quarterly*, **28**, pp. 245–273.

Balderston, F. E. (1985). *Thrifts in Crisis: Structural Transformation of the Savings and Loan Industry*. Ballinger, Cambridge, MA.

Baliga, B., R. Moyer and R. Rao (1996). 'CEO duality and firm performance', *Strategic Management Journal*, **17**(1), pp. 41–53.

Barney, J. B. (1991). 'Firm resources and sustained competitive advantage', *Journal of Management*, **17**, pp. 121–154.

Bergh, D. and G. Holbein (1997). 'Assessment and redirection of longitudinal analysis: Demonstration with a study of the diversification and divestiture relationship', *Strategic Management Journal*, **18**(7), pp. 557–571.

Boeker, W. (1989). 'Strategic change: The effects of founding and history', *Academy of Management Journal*, **32**, pp. 489–515.

Bourgeois, L. J. (1984). 'Strategic management and determinism', *Academy of Management Review*, **9**, pp. 586–596.

Bresser, R. K. F. (1998). *Strategische Managementtheorie*. Walter de Gruyter, Berlin/New York.

Bresser, R. K. F., R. L. M. Dunbar and T. Jithendranathan (1994). 'Competitive and collective strategies: An empirical examination of strategic groups'. In P. Shrivastava, A. Huff and J. Dutton (eds.), *Advances in Strategic Management*, Vol. 10B. JAI Press, Greenwich, CT, pp. 187–211.

Chandler, A. D. (1962). *Strategy and Structure: Chapters in the History of American Industrial Enterprise*. MIT Press, Cambridge, MA.

Collis, D. (1994). 'How valuable are organizational capabilities?', *Strategic Management Journal*, Winter Special Issue, **15**, pp. 143–152.

Cyert, R. and J. G. March (1963). *A Behavioral Theory of the Firm*. Prentice-Hall, Englewood Cliffs, NJ.

Deephouse, D. (1996). 'Does isomorphism legitimate', *Academy of Management Review*, **39**, pp. 1024–1039.

Dess, G. G., R. D. Ireland and M. A. Hitt (1990). 'Industry effects and strategic management research', *Journal of Management*, **16**, pp. 7–27.

Donaldson, L. (1995). *American Anti-Management Theories of Organization*. Cambridge University Press, Cambridge.

Eichler, N. (1989). *The Thrift Debacle*. University of California Press, Berkeley, CA.

Ghemawat, P. (1991). *Commitment: The Dynamic of Strategy*. Free Press, New York.

Ginsberg, A. (1988). 'Measuring and modelling changes in strategy: Theoretical foundations and empirical directions', *Strategic Management Journal*, **9**(6), pp. 559–575.

Ginsberg, A. and N. Venkatraman (1985). 'Contingency perspectives of organizational strategy: A critical review of the empirical research', *Academy of Management Review*, **10**, pp. 421–434.

Hannan, M. T. and J. Freeman (1977). 'The population ecology of organizations', *American Journal of Sociology*, **82**, pp. 929–964.

Hannan, M. T. and J. Freeman (1984). 'Structural inertia and organizational change', *American Sociological Review*, **49**, pp. 149–164.

Harrison, J. R. and L. Mitchell (1995). 'Interaction effects in quasi-linear models', working paper, University of Texas at Dallas.

Haveman, H. A. (1992). 'Between a rock and a hard place: Organizational change and performance under conditions of fundamental environmental transformation', *Administrative Science Quarterly*, **37**, pp. 48–75.

Hedberg, B. L. T. (1981). 'How organizations learn and unlearn'. In P. C. Nystrom and W. H. Starbuck

(eds.), *Handbook of Organizational Design*. Oxford University Press, Oxford, pp. 3–27.

Hedberg, B. L. T., P. Nystrom and W. Starbuck (1976). 'Camping on seesaws: Prescriptions for a self designing organization', *Administrative Science Quarterly*, **21**, pp. 41–65.

Henderson, R. M. and K. B. Clark (1990). 'Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms', *Administrative Science Quarterly*, **35**, pp. 9–30.

Hofer, C. and D. E. Schendel (1978). *Strategy Formulation: Analytical Concepts*. West, St. Paul, MN.

Judge, G. G., C. R. Hill, W. E. Griffith, H. Lutkepohl and T.-C. Lee (1982). *Introduction to the Theory and Practice of Econometrics*. Wiley, New York.

Kelly, D. and T. L. Amburgey (1991). 'Organizational inertia and momentum: A dynamic model of strategic change', *Academy of Management Journal*, **34**, pp. 591–612.

Kraatz, M. S. and E. J. Zajac (1996). 'Exploring the limits of the new institutionalism: The causes and consequences of illegitimate organizational change', *American Sociological Review*, **61**, pp. 812–836.

Kraatz, M. S. and E. J. Zajac (forthcoming). 'How organizational resources affect strategic change and performance in turbulent environments: Theory and evidence', *Organization Science*.

Lawrence, P. R. and J. W. Lorsch, (1967). *Organization and Environment*. Graduate School of Business Administration, Harvard University, Boston, MA.

Lenz, R. T. (1980). 'Environment, strategy, organizational structure and performance: Patterns in one industry', *Strategic Management Journal*, **1**(3), pp. 209–226.

Leonard-Barton, D. (1992). 'Core capabilities and core rigidities: A paradox in managing new product development', *Strategic Management Journal*, Summer Special Issue, **13**, pp. 111–125.

Levitt, B. and J. G. March (1988). 'Organizational learning', *Annual Review of Sociology*, **14**, pp. 319–340.

Miles, R. H. and K. C. Cameron (1982). *Coffin Nails and Corporate Strategies*. Prentice-Hall, Englewood Cliffs, NJ.

Miles, R. E. and C. C. Snow (1994). *Fit, Failure and the Hall of Fame*. Macmillan, New York.

Miller, D. and P. H. Friesen (1984). *Organizations: A Quantum View*. Prentice-Hall, Englewood Cliffs, NJ.

Ocasio, W. (1995). 'The enactment of economic adversity: A reconciliation of theories of failure-induced change and threat-rigidity'. In L. L. Cummings and B. M. Staw (eds.), *Research in Organizational Behavior*, Vol. 17. JAI Press, Greenwich, CT, pp. 287–331.

Oster, S. (1982). 'Intraindustry structure and the ease of strategic change', *Review of Economics and Statistics*, **64**, pp. 376–383.

Peteraf, M. A. (1993). 'The cornerstones of competitive advantage: A resource-based view', *Strategic Management Journal*, **14**(3), pp. 179–192.

Petersen, T. (1991). 'The statistical analysis of event histories', *Sociological Methods and Research*, **19**, pp. 270–323.

Prahalad, C. and G. Hamel (1990). 'The core competence of the corporation', *Harvard Business Review*, **68**(3), pp. 79–91.

Quinn, J. B. (1980). *Strategies for Change: Logical Incrementalism*. Macmillan, New York.

Rajagopalan. N. and G. Spreitzer (1997). 'Towards a theory of strategic change: A multi-lens perspective and integrative framework', *Academy of Management Review*, **22**, pp. 48–79.

Rumelt, R. P. (1995). 'Inertia and transformation'. In C. A. Montgomery (ed.), *Resource Based and Evolutionary Theories of the Firm: Towards a Synthesis*. Kluwer, Boston, MA, pp. 251–268.

Sayrs, L. W. (1989). *Pooled Time Series Analysis*. Sage, Newbury Park, CA.

Schendel D. E. and C. Hofer (1979). *Strategic Management*. Little, Brown, Boston, MA.

Selznick, P. (1948). 'Foundations of the theory of organization', *American Sociological Review*, **13**, pp. 25–35.

Selznick, P. (1957). *Leadership in Administration*. Harper & Row, New York.

Singh, J. V., R. J. House, and D. J. Tucker (1986). 'Organizational change and organizational mortality', *Administrative Science Quarterly*, **31**, pp. 587–611.

Smith, K. G. and C. M. Grimm (1987). 'Environmental variation, strategic change and firm performance: A study of railroad deregulation', *Strategic Management Journal*, **8**(4), pp. 363–376.

Snow, C. C. and L. G. Hrebiniak (1980). 'Strategy, distinctive competence, and organizational performance', *Administrative Science Quarterly*, **25**, pp. 317–336.

Staw, B. M., L. E. Sandelands and J. Dutton (1981). 'Threat-rigidity effects in organizational behavior: A multilevel analysis', *Administrative Science Quarterly*, **26**, pp. 501–524.

Thompson, J. D. (1967). *Organizations in Action*. McGraw-Hill, New York.

United States League of Savings Institutions (1989). *Savings Institutions Sourcebook*. Washington, DC.

Van de Ven, A. H. and R. Drazin (1985). 'The concept of fit in contingency theory'. In L. L. Cummings and B. M. Staw (eds.), *Research in Organizational Behavior*, Vol. 7. JAI Press, Greenwich, CT, pp. 333–365.

Venkatraman, N. (1989). 'The concept of fit in strategy research: Toward verbal and statistical correspondence', *Academy of Management Review*, **14**, pp. 423–444.

Venkatraman, N. and J. C. Camillus (1984). 'Exploring the concept of fit in strategic management', *Academy of Management Review*, **9**, pp. 513–525.

Wernerfelt, B. (1984). 'A resource-based view of the firm', *Strategic Management Journal*, **5**(2), pp. 171–180.

White, L. J. (1991). *The S&L Debacle: Public Policy Lessons for Bank and Thrift Regulation*. Oxford University Press, New York.

Wiersema, M. and K. Bantel (1993). 'Top management team turnover as an adaptation mechanism', *Strategic Management Journal*, **14**(7), pp. 485–504.
Yamaguchi, K. (1991). *Event History Analysis*. Sage, Newbury Park, CA.
Zajac, E. J. and M. S. Kraatz (1993). 'A diametric forces model of strategic change: Assessing the antecedents and consequences of restructuring in the higher education industry', *Strategic Management Journal*, Summer Special Issue, **14**, pp. 83–102.
Zajac, E. J. and S. M. Shortell (1989). Changing generic strategies: Likelihood, direction, and performance implications', *Strategic Management Journal*, **10**(5), pp. 413–430.