ADAPTATION vs SELECTION: AN EXAMINATION OF THE IMPACT OF DEREGULATION ON STRATEGIC CHANGE IN U.S. BANKS

by

Rebecca W. Ball

Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Management

May 1994

APPROVED

Dr. Robert J. Litschert, Chairman

Dr. Thirwall W. Bonham

Dr. Vittorio A. Bonomo

Dr. James R. Lang

Dr. William G. Lehrman
ADAPTATION vs SELECTION: AN EXAMINATION OF THE IMPACT OF Deregulation ON STRATEGIC CHANGE IN U.S. BANKS

by

Rebecca W. Ball

Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Management

ABSTRACT

This research examines competing theories based on the strategic choice and organizational ecology perspectives by investigating strategic change in the banking industry preceding and following interest rate and product deregulation of financial institutions in the early 1980's. Adaptation theory suggests that the largest, oldest, and most powerful organizations have superior capacities for adapting to environmental circumstances and that organizational variability reflects changes in the strategy and structure of a firm in response to environmental changes. The organizational ecology perspective hypothesizes that a firm's ability to change is inversely related to organizational age and size and that organizations become inert as they grow and age. The propositions and hypotheses in this research examine the relationship between organizational age and size on both absolute and relative inertia. The association between strategic change on firm survival is also explored. Findings demonstrate partial support for both theories. An explanation for the mixed findings is offered which suggests that both adaptation and organizational ecology theories explain continuous change, while the deregulation period under study represented a period of discontinuous change. A third model of strategic change, proposed by Meyers, Brooks, and Goes (1990) is offered as a better explanation of strategic change among U.S. banks during the decade following deregulation.
ACKNOWLEDGEMENTS

One of the cornerstones of my strategy classes is group work. I suggest to the students that there is no such thing as a significant solitary endeavor. And, so it is with this dissertation and the completion of an advanced degree. I am humbly grateful for all of the support I have received.

First and foremost, I want to thank Dr. Litschert, my committee chair and mentor for his tireless efforts on my behalf. He knows that it is fraudulent for me to claim sole ownership to this research. It was from him that I learned most of what I know about strategy and it was from him that I received guidance in every aspect of this project.

This dissertation could not have been completed without the help of the other members of my committee. Each of them spent many hours reading and offering insightful feedback. I am extremely grateful that I have had the opportunity to learn many lessons about business, academics, and life from them and many other members of the Pamplin College of Business faculty.

The constant friendship and support of Karen Fowler, Pat McCormick, and Eileen Allen helped me keep this work in perspective. I especially appreciate my car pool companion, Marjie Flanigan, who shared countless hours with me on our commute from West Virginia and over lunch discussing the varied aspects of our life from being mothers and wives to students and teachers.

Thanks also to my employers. I continued to work most of the time I was enrolled in the program, but could not have done so without the support and understanding of Concord College, Bluefield State College, and
Northern Kentucky University. They each gave me much freedom and encouragement to pursue my academic growth goals.

There simply are no words which can express the appreciation that I feel for my family. I thank my mother, Betty White, for her constant optimism, guidance and unconditional love, and I am grateful for the memory of my father, James White, who passed away while I was pursuing this degree. They did the best they knew how to instill in me a sense of purpose and a willingness to pursue my dreams. I want to especially thank my brother, David White, who went down this road 10 years ago, for being a wonderful role model and for offering me the best advice I could ever have wanted about how to deal with the pain and problems associated with personal and academic growth.

This dissertation and the goal that it represents are dedicated to my family. To my children, B.J., Brubaker, and Caitlin, my hope is that I can pass along some of the things that I have learned, often slowly and painfully, so that they may have a richer and fuller life. And, I give special thanks to my friend and husband, Brad Ball.

Most importantly, I thank God for the act of grace which carried me when this path seemed to be too long and frustrating. It was His gift of the people named in appreciation above which allowed me to complete this work.
# TABLE OF CONTENTS

## CHAPTER I: INTRODUCTION

Research Problem - Two Competing Paradigms ........................................ 3
Adaptation Theory of Strategic Change ...................................................... 3
Selection Theory of Strategic Change .......................................................... 7
Consistencies and Contradictions ............................................................... 11
Integration ........................................................................................................ 12
Research Objective ......................................................................................... 15
Research Questions ......................................................................................... 16
The Research Setting ....................................................................................... 19
The Banking Environment 1930-1990 .............................................................. 19
Theoretical Application .................................................................................... 25
Methodological Appropriateness ..................................................................... 28
Summary and Review of Subsequent Chapters ............................................... 30

## CHAPTER II: LITERATURE REVIEW

Introduction ....................................................................................................... 31
Adaptive Change ............................................................................................... 33

Theory and Development ................................................................................ 33
Resource Dependence ..................................................................................... 34
Organizational Learning ................................................................................... 34
Organizational Slack ......................................................................................... 35
Institutional Theory ........................................................................................ 36
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingency Theory</td>
<td>37</td>
</tr>
<tr>
<td>Strategic Choice</td>
<td>38</td>
</tr>
<tr>
<td>Defining and Measuring Strategy</td>
<td>39</td>
</tr>
<tr>
<td>Definition</td>
<td>39</td>
</tr>
<tr>
<td>Generic Strategy Types</td>
<td>42</td>
</tr>
<tr>
<td>Measuring Strategic Change</td>
<td>43</td>
</tr>
<tr>
<td>Levels of Strategic Change</td>
<td>43</td>
</tr>
<tr>
<td>Dimensions of Strategic Change</td>
<td>44</td>
</tr>
<tr>
<td>Empirical Results</td>
<td>45</td>
</tr>
<tr>
<td>Selection and Replacement</td>
<td>46</td>
</tr>
<tr>
<td>Theory and Development</td>
<td>46</td>
</tr>
<tr>
<td>Industrial Economics</td>
<td>47</td>
</tr>
<tr>
<td>Transaction Theory</td>
<td>48</td>
</tr>
<tr>
<td>Organizational Ecology</td>
<td>48</td>
</tr>
<tr>
<td>Empirical Results</td>
<td>51</td>
</tr>
<tr>
<td>Structural Inertia Theory</td>
<td>55</td>
</tr>
<tr>
<td>Propositions</td>
<td>60</td>
</tr>
<tr>
<td>Organizational Age</td>
<td>60</td>
</tr>
<tr>
<td>Organizational Size</td>
<td>61</td>
</tr>
<tr>
<td>Relative Inertia</td>
<td>63</td>
</tr>
<tr>
<td>Organizational Survival</td>
<td>63</td>
</tr>
<tr>
<td>The Model</td>
<td>65</td>
</tr>
<tr>
<td>Summary</td>
<td>67</td>
</tr>
</tbody>
</table>
CHAPTER III: RESEARCH METHODOLOGY ........................................ 68

Introduction ................................................................. 68

Conceptual and Operational Definitions ................................ 68

Variables ............................................................................ 69

Inertia .............................................................................. 69

Strategy and Strategic Change in Banks ................................ 71

Organizational Size .......................................................... 77

Organizational Age ........................................................... 78

Organizational Survival ...................................................... 78

Controls ............................................................................ 80

Data Collection ............................................................... 80

Data Analysis ..................................................................... 82

Hypotheses ......................................................................... 85

Organizational Age ........................................................... 85

Absolute Inertia ............................................................... 85

Relative Inertia ............................................................... 87

Organizational Size .......................................................... 88

Absolute Inertia ............................................................... 88

Relative Inertia ............................................................... 89

Organizational Survival ...................................................... 90

Validity Issues ................................................................... 92

Internal Validity ............................................................... 92

History ............................................................................. 93

Strategy Measurement ....................................................... 93
The Process of Deregulation .......... 95
Interim Effects .......... 95
Absence of Controls Groups .......... 96
Bank Holding Companies Excluded .......... 96
External Validity .......... 96

CHAPTER IV: FINDINGS .......... 98
Introduction .......... 98
Industry Overview .......... 100
Industry Description .......... 100
Strategy Variables .......... 103
Organizational Age .......... 104
Descriptive Findings .......... 104
Organizational Age and Strategic Change .......... 108
Absolute Inertia (H1) .......... 108
Relative Inertia (H2) .......... 111
Organizational Size .......... 112
Descriptive Findings .......... 112
Organizational Size and Strategic Change .......... 116
Absolute Inertia (H3) .......... 116
Relative Inertia (H4) .......... 118
Organizational Survival .......... 120
Exiting Banks .......... 120
Survival and Strategic Change (H5) .......... 122
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survival and Strategic Type</td>
<td>124</td>
</tr>
<tr>
<td>Survival and Organizational Age and Size</td>
<td>126</td>
</tr>
<tr>
<td>Summary</td>
<td>126</td>
</tr>
<tr>
<td><strong>CHAPTER V: CONCLUSIONS</strong></td>
<td>130</td>
</tr>
<tr>
<td>Introduction</td>
<td>130</td>
</tr>
<tr>
<td>Summary of Findings</td>
<td>130</td>
</tr>
<tr>
<td>Discussion of Individual Hypotheses</td>
<td>133</td>
</tr>
<tr>
<td>Age and Strategic Change (H1a, H1b, H1c, H2)</td>
<td>133</td>
</tr>
<tr>
<td>Size and Strategic Change (H3a, H3b, H3c, H4)</td>
<td>134</td>
</tr>
<tr>
<td>Survival and Strategic Change (H5a, H5b)</td>
<td>135</td>
</tr>
<tr>
<td>Discussion</td>
<td>137</td>
</tr>
<tr>
<td>Relationship to Previous Findings</td>
<td>137</td>
</tr>
<tr>
<td>Research Enhancements</td>
<td>138</td>
</tr>
<tr>
<td>Alternative Explanations</td>
<td>140</td>
</tr>
<tr>
<td>The Model</td>
<td>143</td>
</tr>
<tr>
<td>Period 1: Strategic Homogeneity</td>
<td>144</td>
</tr>
<tr>
<td>Period 2: Strategic Heterogeneity</td>
<td>145</td>
</tr>
<tr>
<td>Period 3: Strategic Revolution</td>
<td>145</td>
</tr>
<tr>
<td>Significance of Research</td>
<td>147</td>
</tr>
<tr>
<td>Implications for Strategic Management</td>
<td>147</td>
</tr>
<tr>
<td>Implications for Commercial Banking</td>
<td>149</td>
</tr>
<tr>
<td>Implications for Public Policy</td>
<td>151</td>
</tr>
<tr>
<td>Limitations of Research</td>
<td>152</td>
</tr>
</tbody>
</table>
Suggestions for Future Research ................. 153
Conclusions ........................................... 155

BIBLIOGRAPHY ........................................... 156
VITA ...................................................... 168
TABLE OF TABLES

Table 1: Comparison of Strategy Conceptualization and Operationalization in Selection and Replacement Research .................................................. 53

Table 2: Empirical Research Findings on the Relationships Between Organizational Age, Organizational Size and Inertia ........................................ 54

Table 3: Threats to Internal Validity .................................................... 93

Table 4: Overview of the Banking Industry in 1978, 1983, 1987 ........................................ 101

Table 5: Mean Changes in Strategy Variables for the 1978 Cohort of Firms ........................................ 104

Table 6: Overview of the Older Banks in 1978, 1983, 1987 ........................................ 105

Table 7: Overview of the Young Banks in 1978, 1983, 1987 ........................................ 106

Table 8: Pearson Correlation Coefficients for Changes in Strategy Variables and Organizational Age for the 1978 Cohort Firms ........................................ 109

Table 9: Student's T Test for Differences Between the Mean Organizational Age of Firms Changing Both Strategy Variables ........................................ 111

Table 10: Comparison of the Change Correlations Between Time Periods and Organizational Age (using Fisher's Transformation) ........................................ 112

Table 11: Overview of the Large Banks in 1978, 1983, 1987 ........................................ 113

Table 12: Overview of the Small Banks in 1978, 1983, 1987 ........................................ 114
Table 13: Pearson Correlation Coefficients for Changes in Strategy Variables and Organizational Size for the 1978 Cohort Firms

Table 14: Student’s T Test for Differences Between the Mean Organizational Size of Firms Changing Both Strategy Variables

Table 15: Comparison of the Change Correlations Between Time Periods and Organizational Size (using Fisher’s Transformation)

Table 16: Overview of Banks Exiting the Population During Period I (1978-1983) and Period II (1983-1987)

Table 17: Student’s T Test for the Differences Between the Amount of Strategic Change Between Exiting and Surviving Firms

Table 18: Student’s T Test for the Differences Between the Mean Strategy Variables For Exiting and Surviving Firms

Table 19: Student’s T Test for the Differences Between the Mean Organizational Age and Size of Exiting and Surviving Firms

TABLE OF TABLES xii
# TABLE OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Bank Failures, 1970-88</td>
<td>20</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Adaptive Perspective of Strategic Change</td>
<td>40</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Selection Perspective of Strategic Change</td>
<td>52</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Structural Inertia Theory</td>
<td>59</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Proposed Model</td>
<td>66</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Confounding Factors</td>
<td>94</td>
</tr>
</tbody>
</table>

# TABLE OF EXHIBITS

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibit 1</td>
<td>Number of FDIC-Insured Commercial Banks and Trust Companies 1934-1991</td>
<td>29</td>
</tr>
</tbody>
</table>
CHAPTER I: INTRODUCTION

The literature exploring changes in organizational strategy has generally assumed that change patterns among existing organizations have been due to management response to changes in the environment (Miles and Snow, 1978; March and Simon, 1958; Cyert and March, 1963; Thompson, 1967; Lawrence and Lorsch, 1967; Miles and Snow, 1978; Pfeffer and Salancik, 1978; Smith and Grimm, 1987; Zajac and Shortell, 1989). Based on the views of change as conceived within the adaptation paradigm of organizations, strategic change literature has argued that organizations, or more specifically leaders and dominant coalitions, scan the relevant environment, formulate strategic responses to environmental change, and attempt to adapt to changing environmental contexts to ensure the performance and continued survival of organizations (Child, 1972; Cyert and March, 1963; DiMaggio and Powell, 1983; Lawrence and Lorsch, 1967; Meyer and Rowan, 1977; Miles and Snow, 1978; Pfeffer and Salancik, 1978; Thompson, 1967). These researchers, and others, developed the notion that organizations frequently fine tune their structures in order to adjust to the constraints arising from complex technologies and changing and uncertain environments.

Recently, researchers have begun to question that assumption and have developed competing theories of organizational change (Hannan and Freeman, 1977, 1984, 1989; Singh, Tucker and Meinhard, 1988; and Fichman and Levinthal, 1988). The most pervasive of these found in the literature
is the replacement and selection view of organizational change associated with the organizational ecology paradigm.

The organizational ecology perspective argues that the adaptation view of organizations is one that minimizes the importance and power of organizations as the building blocks of our society. According to Hannan and Freeman (1989: 3), "If organizations are plastic, then only the intentions of organizational elites matter." Hannan and Freeman (1984) suggest that adaptation has relevance at the population level where organizational forms replace each other as conditions change. A major premise of this assertion is the concept of inertia. Inertia, as defined by Hannan and Freeman (1984), does not mean that organizations never change, but that "they seldom succeed in making radical changes in strategy and structure in the face of environmental threats" (p. 149).

Hannan and Freeman (1989) submit that it is the stability or inertia tendencies of organizations that make them the "building blocks" of our modern society. They suggest that rates of change among existing organizations are minimal, that the ability to change decreases with age and size, and that most change in organizations comes from existing organizations being replaced by new entities. According to Freeman and Hannan (1983), "If inertial forces are strong, adaptation by individual organizations can not be the main force for change in organizational populations" (p. 1116). The strength of inertial forces is not a function of the need to change as indicated by a changing environment, but rather a function of organizational characteristics that either promote or mitigate organizational inertia (Hannan and Freeman, 1984).
The notion of inertia is a major part of the theoretical foundation of the organizational ecology paradigm. Organizational ecologists argue that inertia is a "consequence of a selection process" (Hannan and Freeman, 1984: 149) which increases the chances of organizational survival, but decreases the likelihood for institutional change. Hannan and Freeman (1984, 1989) argue that as organizations increase in age and size, inertial tendencies will increase.

Selection theorists have received a great deal of criticism from adaptation theorists for their inattention to the assumptions surrounding the concept of inertia, which is central to their espoused theory of organizations (Astley and Van de Ven, 1983; Frommbrum, 1988; Pecorn, 1986). Recently, inertial assumptions regarding strategic change have been examined. However, only a few studies have empirically compared these paradigms using the same database and those researchers have found conflicting results (Singh, Tucker and Meinhard, 1988; Baum 1990; Ginsberg and Buchholtz, 1990; Kelly and Amburgey, 1991).

RESEARCH PROBLEM - TWO COMPETING PARADIGMS

ADAPTATION THEORY OF STRATEGIC CHANGE

institutional theory (Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Scott, 1987), strategic choice (Child, 1972; Miles and Snow, 1978), and organizational learning (Cyert and March, 1963; March, 1981; and Nelson and Winter, 1982). These authors view organizational change as motivated by the decisions and strategies of leaders attempting to relate organizational strengths and weaknesses and environmental threats and opportunities. While adaptation proponents vary to the extent that they rely on the rational intentions of the actors within organizations, they all support the notion that organizations take an active role in seeking changes to adapt to the changing environment.

The oldest adaptation theories often viewed organizational leaders as having little or no discretion. "Organizations do some of the things they do because they must - or else" (Thompson, 1967: 1). These early theories view an organization as a mechanical system whose behavior largely follows lawful processes where very little managerial discretion is assumed. The earliest of these philosophies viewed organizations as closed systems for which universal principles could be developed (Taylor, 1911; Weber, 1947; Fayol, 1949; and others). For example, Weber (1947) considered bureaucracy the most efficient form for most organizations. Ignoring external conditions or assuming they were constant, he concluded that organizations would behave in a completely rational manner.

Barnard (1938) was the first to treat organizations as open systems. He defined organizations as "a system of consciously coordinated personal activities or forces" (Bernard, 1938: 72). March and Simon (1958) implied an open system when they argued that an organization is a
coalition of members who require inducements to contribute to the attainment of organizational goals. Burns and Stalker (1961) used open systems logic in their definition of an organization as a sociotechnical system which draws resources from the environment, transforms them, and then exports them back to the environment.

Perhaps one of the most significant contributions to the adaptation literature came from Thompson (1967), when he married the closed and open systems perspectives. Thompson suggested that organizations make internal adjustments in order to deal with external uncertainties, trying to "buffer" or protect the most critical aspects or "core" of the organization.

Open systems thinking explicitly rejects the idea of universal principles, yet it has been criticized as deterministic (Child, 1972). For example, contingency theory rejects universal principles in favor of patterns of relationships among organizational and environmental variables. In other words, while there is no "one best way" to organize in all situations, given a particular set of circumstances, there is a single best way, decision, or choice of actions for the organization. The contingency ideas of finding a "fit" between the environment and the organizational strategy has dominated the strategy literature (Miles and Snow, 1978).

One major criticism of contingency theory is its neglect of managerial choice (Child, 1972). For Child (1972), organizational behavior was not completely determined by environmental factors. Instead,
managerial choice had a main effect on behavior and outcomes. Child attributes variation in organizations directly to managerial leadership.

Many available contributions to a theory or organizational structure do not incorporate the direct source of variation in formal structural arrangements, namely the strategic decisions of those who have the power of structural initiation - the dominant coalition (p. 16).

The strategy paradigm focuses on choices made by management. Important contributions have been made to the study of strategic management, and its predecessor, business policy, from such diverse fields as marketing, industrial organizations, financial economics, administrative behavior, law, and economics (Jamison, 1981) as well as disciplines that establish the foundation for these fields such as sociology and psychology (Guarino, 1991). Such notions as the dominant coalition, decision making and managerial action underscore the adaptive nature of the study of strategic management.

Beginning as a situational art, the study of business policy, was aimed primarily at an examination of the ability of management to scan the environment and develop the most appropriate avenue for organizational success and profit making. Chandler's (1962) historical study examined the notion of managerial response to environmental change. Ansoff (1965), soon after developed the components of strategic planning, and by the late 1970's, Schendel and Hofer (1979) described the strategy field as a "paradigm." Since that time the strategy field has grown rapidly (Guarino, 1991).
SELECTION THEORY OF STRATEGIC CHANGE

Selection research has directly challenged the notion that managerial choice is the primary explanation for variation among organizations, arguing that change occurs when new organizational forms enter a niche and replace organizations which are no longer selected by the environment. Hannan and Freeman (1989), admit that the application of ecological models is complicated by the possibility that organizations can change their strategies and structures. In fact, organizational ecologists recognize that some organizations do radically change strategy and structure; however, they argue that it is impossible to explain change over time unless there is an assumption of the unitary characteristic of inertia. Thus, organizational ecologists assume that individual organizations are characterized by relative inertia. Changes in strategy and structure are infrequent and cannot be timed precisely to coincide with environmental changes.

According to Hannan and Freeman (1989), there are at least four factors which limit the capacities of managers to reshape existing structures: organizational form; scarcity of resources; population competition; and limitations on rationality. The existing organizational form constrains the choices available for all organizational members, including managers. Organizational control systems, norms guiding behavior, and incentives make change difficult, if not impossible. The second limiting factor, scarcity of resources, makes adaptive change
difficult to manage. Even if a particular change is attractive, scarce resources may prohibit it being implemented. The third factor which limits the ability to change is the pattern of competition between and within populations. Competitive pressures magnify the effects of all other factors, complicating change. The fourth constraint which limits change in organizations is based on the notion of "bounded rationality" discussed by March and Simon (1958). According to Simon (1957: 79) "...it is impossible for the behavior of a single, isolated individual to reach any high degree of rationality" given the number of alternatives available and the vast amount of information necessary to evaluate them.

Adaptation theorists would not necessarily disagree with Hannan and Freeman (1989) that certain internal organizational characteristics, such as the four cited in the preceding paragraph constrain managerial change in organizations (Miles and Snow, 1978; Oster, 1982). However, the relatively unchanging nature of organizations, as conceived by the organizational ecologist, is viewed as a positive feature which creates stability in society and plays an important role in the survival of the organization. Conversely, the adaptation perspective defines inertia as an obstacle to the ability to adapt the organization to a changing environment.

In an attempt to clarify the meaning of structural inertia theory, Hannan and Freeman (1984) explored the question of why formal organizations exist. After rejecting the rationale of institutional economics (Arrow, 1974; Williamson, 1975) and efficiency and effectiveness (Blau and Scott, 1962; Thompson, 1967), Hannan and Freeman (1984, 1989)
argued that there are two important advantages that formal organizations have over collective actors, namely, reliability and accountability.

Reliability refers to an organization's "unusual capacities to produce collective products of a given quality repeatedly" (p. 153). In a world of uncertainty, buyers and investors may value reliability more than efficiency. Accountability means that organizations can document how resources are used including the decisions and rules leading to those outcomes. According to Hannan and Freeman (1984) pressures for accountability are especially strong when (1) organizations produce information-loaded or symbolic products, (2) substantial risk is involved, (3) long term relations normally exist between the organization and its employees and/or clients, and (4) the organization's purposes are highly political. Thus, Hannan and Freeman argue that society favors collectives that can demonstrate or convincingly claim a capacity for reliability and accountability. They further suggest that in order to develop the capacities for reliability and accountability organizations must become stable over time and develop structures that are reproducible. Formalizing goals and standardizing patterns of activity, stabilize structure (Hannan and Freeman, 1984; Nelson and Winter, 1982) and at the same time create strong pressures that limit change. Consequently, the very characteristics that stabilize organizations lead to inertia (Kelly and Amburgey, 1990).

Drawing from the work of Thompson (1967), Hannan and Freeman (1984) discuss the concept of organizational change and come to the conclusion that not all change is equal. They suggest that when they discuss
features that become inert they are typically referring to core features as opposed to peripheral organizational features. They classify these features on the basis of resource mobilization and suggest that from that perspective, core aspects of the organization include: (1) stated goals on which resources are mobilized, (2) forms of authority within the organization, (3) the core technology including capital investment, infrastructure, and skills of employees, and (4) broad marketing strategy including kinds of customers and the way the organization will attract resources from the environment (Hannan and Freeman, 1984).

Peripheral changes, however, buffer an organization's core from uncertainty and broaden the connections of the organization to its environment through bridging techniques (Hannan and Freeman, 1984; Scott, 1987). These changes represent adjustments by the organization that do not modify the core strategy and structure.

Organizational ecologists do not assume that specific organizations can never change. According to their definition, the speed of change for inert organizations is slower than the speed of environmental change. Hannan and Freeman (1984) explain it in the following manner:

To claim that organizational structures are subject to strong inertial forces is not the same as claiming they never change. Rather it means that organizations respond relatively slowly to the occurrence of threats and opportunities in their environment (p. 151).
CONSISTENCIES AND CONTRACTIONS

According to Scott (1987), both perspectives conceptualize organizations as natural systems. He defines a natural system in the following manner.

organizations are collectives whose participants share a common interest in the survival of the system and who engage in collective activities, informally structured, to secure this end (p. 23).

Both perspectives not only view organizations as natural systems, but also as highly influenced by the environment and consequently open to a larger system which they must confront. They differ, however, in the manner in which the two perspectives assume organizations and the people within organizations can control their survival. Strategic choice theorists indicate that organizational strategy is the outcome of political contests and individual decision-making within organizations (Pfeffer, 1978). Organizational ecologists base survival on probabilities and discount the ability of individuals to rationally influence survival.

According to Hannan and Freeman (1989), there are two major theoretical differences associated with these two perspectives. One difference is the unit of analysis. While strategic choice proponents research at the firm level, organizational ecologists work at the population level. A second distinction between the two involves the mechanism of change. The ecological approach emphasizes selection and
replacement at the population level, whereas, the strategic choice perspective proposes adaptation by existing organizations.

**INTEGRATION**

Several researchers have tried in recent years to bridge these differences. Some see these two theories as directly competing and others as complementary (Astley and Van de Ven, 1983; Hrebiniak and Joyce, 1985; Zammuto, 1988). Hrebiniak and Joyce (1985) proposed a model assuming an interaction between managerial choice and environmental ecology. They argued that these two perspectives are not mutually exclusive, but instead, two independent dimensions on which environments can be categorized. Similarly, Lawrence (1981) contended that the natural selection model needs to be supplemented by an adaptation by learning perspective. In other words, if an organization survives environmental selection in the early stages of growth and expands along a product and/or market line, it may be better able to adapt to subsequent environmental changes that would have been fatal at an earlier stage because it has "learned" how to survive under those conditions. Ginsberg and Buchholtz (1990) empirically tested inertial, adaptive, and institutional models of organizational change on a population of Health Maintenance Organizations (HMO's). They found support for each of the models and concluded that an integrated model best described change in that population.
Zammuto (1988) identified a correspondence between the organizational ecology and strategic choice perspectives and generated a model of four conditions and strategic types. Zammuto (1988: 106) contends that "these two points of view have an important correspondence in their classification of organizational strategy, and that their predictions about the mixes of strategic types found under stable conditions are identical." However, he suggests that the ecological model provides more detailed information about the mix of strategic types in changing environments. His model is based on developing a correspondence between the adaptation model developed by Miles and Snow (1978) and the ecological model developed by Brittan and Freeman (1980). Despite the basic differences in philosophy, Zammuto suggested that the two classifications are strikingly similar.

Astley and Van de Ven (1983) argued that the selection and adaptation perspectives are two distinct views of organizations. They suggest that these represent two of the four major paradigms in the organizational theory literature and that they differ dramatically in terms of whether they study organizations at the individual or population level and whether they have a deterministic or voluntaristic orientation toward the environment.

A major assumption of this research is that adaptation and selection are contrasting ways of thinking about organizational change. Kuhn (1962) suggested that as a science matures, there will be conflicting perspectives whose proponents cannot "communicate" with each other. These competing paradigms will attach different meanings to common words or
ideas. The concept of inertia provides an example of one point of
divergence between the two perspectives. Because their theories are
based on adaptation as a mechanism of change, strategic choice theorists
view inertia as a negative characteristic which limits an organization's
ability to adapt to changing environmental conditions. In a recent
article by Huff, Huff, and Thomas (1992), inertia is defined as the level
of commitment to current strategy. The authors suggest that "absent other
forces, inertia describes the tendency to remain with the status quo and
the resistance to strategic renewal" (p. 56). In fact, according to
Haveman (1992), the inertia nature of organizations has generally been
viewed as pathological and dysfunctional (Coch and French, 1948; Merton,
1957). Change is viewed as necessary for competitive advantage.

Organizational ecologists, however, declare that selection processes
favor organizations with structures that are difficult to change (Hannan
and Freeman, 1984, 1989). Inertia is considered an outcome of the
evolutionary processes of populations and necessary for survival.

Because of these differences, it has been difficult for strategy
researchers to integrate the ecology perspective into their studies of
organizational change. According to Hannan and Freeman (1989: 35), "many
social scientists object to the use of selection arguments because they
misunderstand the principles of modern evolutionary and ecological
theory." Organizational ecologists cite problems with sample selection
such as sampling on the dependent variable (e.g., sampling only large
firms or successful firms), failing to understand and apply the ecology
theories appropriately and, using a time span that is too short for

CHAPTER 1: INTRODUCTION
realistic testing of theories. While Snow and Hambrick (1980) suggest that a five year period is "sufficient" (p. 535) for the study of strategic change, many recent studies have utilized less than five years to study changes in organizational strategy or used only two data points over a longer period of time (Zajac and Shortell, 1989; Guarino, 1991; Rediker and Middleton, 1992; Reger, Duhaime and Stimpert, 1992). This research will attempt to more closely adhere to the ecology perspective by examining both small and large and successful and unsuccessful firms over a reasonably longer period of time (10 years) than has often been found in strategy research.

RESEARCH OBJECTIVE

The primary goal of this research is to compare strategic adaptation and organizational ecology theories as explanations of strategic change. Child and Kieser (1981) noted that the interesting question is not who is right but, rather under what conditions is one view of organizations a better description of the observable reality than the other.

Organizational ecologists and adaptation researchers differ in their opinions about the effects of an environmental disruption on strategy. While ecologists suggest that when a disruption occurs new organizations will replace organizations which are no longer selected by the environment (Hannan and Freeman, 1989), adaptation researchers argue that environmental jolts trigger responses that reveal how organizations adapt.
to their environments (Meyer, 1982; Meyer, Brooks, and Goes, 1990). The objective of this study is the following.

To examine the strategic response of a population of organizations operating in an environment which has undergone an environmental disruption, and to determine whether the organizational ecology perspective of selection and replacement is a better explanation of that response than the strategic choice explanation.

RESEARCH QUESTIONS

According to McKelvey (1978), the study of the evolution of organizations seeks to trace how organizational forms have evolved and what categories have emerged. These are embedded in the primary inquiries of this research.

Researchers have made a distinction between absolute and relative inertia (Ginsberg and Buchholtz, 1990; Haveman, 1992; Hannan and Freeman, 1884, 1989; Singh, Tucker and Meinhard, 1988). Absolute inertia refers to the inability of organizations to change structures, whereas relative inertia relates to the level of organizational change in relation to environmental change. The stronger the absolute inertia among organizations the less likely they can change appreciably. The stronger the relative inertia, the less likely organizations can change quickly enough to effectively adapt to changing environments and environmental shock (Haveman, 1992; Hannan and Freeman, 1989). Adaptation theories of
change are based on the premise that organizations not only have the ability to change, but can enact these changes rapidly enough to adjust to environmental disruptions. According to March (1982: 515), "...environmental jolts trigger responses that reveal how organizations adapt (emphasis added) to their environments."

With the exception of Ginsberg and Buchholtz (1990), who examined relative inertia among HMO's following an environmental jolt, researchers examining the issue of organizational inertia have investigated only the question of absolute inertia. Research examining only absolute inertia has failed to fully capture the explanations of Hannan and Freeman (1984, 1989) who suggest that their assertion that organizations are subject to strong inertia forces is not the same as claiming organizations never change. This paper will extend the research stream by looking at not only whether organizations can make core changes following an environmental shock, but also will examine the speed of change. The first research question to be considered can be stated as follows.

1.) Is there an association between organizational age and/or size and relative inertia and/or absolute inertia?

The second question examines the survival of organizations following core changes in organizations. Hannan and Freeman (1984) discuss the effect of change on failure. They argue that attempts to reorganize decrease the reliability of performance and thus increase death rates. In other words, changing core features is hazardous. However, Hannan and Freeman (1984) suggest that even though larger organizations are less
likely to make changes in strategy, the likelihood of failure decreases with increasing size. Thus, small organizations are more likely than large ones to make core changes, but are also more likely to exit the population in the process. For large organizations, however, the "liability of mewness" clock is set back when they reorganize and create a "new structure." In other words, larger organizations may be able to withstand the process of change, but will be at greater risk immediately following the change than they were prior to the change.

With respect to the relationship between strategic change, organizational failure and organizational age, Hannan and Freeman (1984) are a little less clear. They do make the argument that complexity, which generally accompanies age, increases the duration of reorganization and that a firm's death rate increases when the duration of the change is lengthy. Thus, complexity increases the risk of death due to change. However, Hannan and Freeman (1984) make no conclusive argument for the relationship between organizational age, strategic change, and population exits.

Moreover, Hannan and Freeman (1984, 1989) and other organizational ecologists are often unclear about the definition of an organizational "death." Strategists would suggest that mergers and acquisitions may be representative of changes in strategy (March, 1982) whereas organizational ecologists often make little distinction between failures and mergers and acquisitions. They argue that these changes represent "new" structures (Hannan and Freeman, 1989; Kelly and Amburgey, 1991; Haveman, 1992).
Thus, the examination of organizational exits following an environmental disruption and strategic changes in organizations will necessarily be exploratory. The second and third research questions can be stated as follows.

2.) Is there a relationship between organizational survival and strategic change following an environmental disruption?

3.) What is the relationship among organizational age, size, and strategy of organizations that exit a population?

THE RESEARCH SETTING

THE BANKING ENVIRONMENT 1930-1990

This research examines change. A population which has undergone an environmental shift or major change can provide a useful opportunity to test the adaptation and selection views of strategic change (Smith and Grimm, 1987). It is abundantly clear that change has rocked the foundations of the financial services industry over the past 15 years. During a time of vigorous expansion in the economy, more U.S. banks failed than had done so since the 1920’s and early 1930’s. From 1920 until 1933 the number of state banks was reduced by half, to under 10,000 (Taylor, 1990). Between 1940 and 1980, the number of bank failures was minimal, with the number of annual suspensions remaining in the teens. From 1981
with the number of annual suspensions remaining in the teens. From 1981 through 1988, the number of suspensions increased every year totalling 817. The number of "cease and desist" orders which is one of the last resorts available to bank examiners totalled almost 2000 from 1981 through 1988. In addition, the number of problem banks increased from 223 in 1981 to 1415 in 1988 and the number of merged and/or absorbed banks for the same period totalled almost 2500. Figure 1 from the FDIC annual reports illustrates the dramatic change in failures following deregulation.

**FIGURE 1: BANK FAILURES 1970-88**

There has been a sense of unspoken anxiety within the industry. The following passage from Banker's Magazine is an example:

The 1980's have been a decade of considerable change for the commercial banking structure in the United States. In the early 1980's, strong forces including interest rate deregulation, inflation, nonbank competitors, and technology began to put pressure on the traditional structure. This pressure increased in the middle of the decade with the beginning of regional interstate mergers, which have been partly responsible for the significant change in the power structure—both in terms of assets, and more important, in terms of market value—that has taken place in the industry (Wooden, 1988, p. 53).

Large banks, with seemingly sound financial strategies have failed and the role of the bank manager has become increasingly complex. Performance has fluctuated dramatically in the banking industry. According to Guarino (1991), return on investment declined from 0.76 in 1978 to a low 0.11 in 1987, but increased to 0.84 in 1988 and declined to 0.51 in 1989. The overall picture has been one of instability and insecurity. According to Simpson (1983)

Since the mid-1970's, the United States has seen some of the most profound financial change in history. New kinds of investment and credit arrangements have proliferated at a bewildering pace, accompanied by derivative instruments such as financial futures, options and swaps. Underlying many of these developments has been an economy buffeted by inflation and disinflation and by large fiscal and external debts. At the same time, competition in the financial marketplace has become more intense, the U.S. financial system has become more integrated with
those abroad, and some parts of the financial system have become deregulated (p. 1).

The following statement by one banker supports this sense of change and insecurity. "If there was one truth about banking in the 1980's, it was that the industry then joined the rest of the business world in having to earn its way, rather than being able to rely-as it once could-on the fallbacks of government guaranty" (Taylor, 1990: 8).

Following several decades of stability, the banking industry underwent major changes in technology, communication, competition and regulation. This stability occurred after the banking industry collapse of the 1930's. Stability was introduced into the system when the Banking Act of 1933 specified standards for national bank charters and implicitly restricted state bank entry by the standards it established for granting federal deposit insurance. This legislation reflected the widely held notion that the cause of the collapse was excessive competition, which led bank managements to behave in an imprudent fashion.

The same diagnosis led to the prohibition of certain types of competitive behavior deemed to be unsound. For example, the Banking Act of 1933 prohibited the payment of interest on demand deposits, authorized the Federal Reserve to regulate the maximum interest rates payable on time and savings deposits, restricted the types of investment securities that banks might hold, and prohibited banks, when acting as principals, from underwriting and trading most types of securities. The underlying assumption was that banks needed protection from themselves and must be
sheltered from competition and from their own bad judgement (Kaufman, Mote and Rosenblum, 1983).

It soon became apparent that many customers were being poorly served because of entry restrictions that were keeping out more efficient competitors that could have improved services and lowered prices. The 1960's brought a period of frustration for commercial bankers and banks began to seek every loophole in existing regulation. The existing restrictions on banks created opportunities for nonbank thrift institutions such as savings and loan associations and credit unions (Rhoades, 1979).

According to Helen Garten (1991), bank regulation has occurred in two phases. The early period, described in the preceding paragraphs, sought to safeguard banks and create a profitable and low risk banking industry. However, during the early 1980's bank regulation began to reflect a very different strategy as banks entered a stage of deregulation. Regulators no longer sought to control bank risk but would add a new set of regulations which required banks to internally control risk.

The earliest deregulation of banks occurred in two pieces of legislation. The first was the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA), signed into law on March 31, 1980. In essence this piece of legislation lifted the ceiling on interest rates. Product deregulation followed in 1982, under the Garn St. Germain Act, allowing banks to offer a more competitive mix of products. Consequently,
banks were faced with an abrupt change in market conditions (Dunn, Thomas and Young, 1984).

In the 1980's another change occurred in state banking. Courts overturned an earlier ruling outlawing interstate banking, giving states the right to regulate interstate banking. State regulations vary from prohibition of all interstate banking to limited state banking to unrestricted interstate activity (Reger, Duhaime and Stimpert, 1992). Thus, the United States banking industry has become much less localized and "a trend toward a nationwide banking structure has begun" (Taylor, 1990: 107).

The current regulatory strategy is based on the notion that increasing competition will result in better internal bank controls and risk management. According to Garten (1991),

The new regulatory strategy does not try to protect banks from the vicissitudes of the competitive markets for financial services. In fact, by subjecting banks to the discipline of the equity market, it encourages greater risk-taking (p. 161).

Haveman (1992) illustrates the nature of the changes in the competitive structure of the financial services industry by a description of the savings and loan industry as "the 3-6-3 industry." That is, thrift management consisted of taking in deposits at 3%, lending them out at 6%, and teeing up at the golf course by 3:00 pm. Similarly, "bankers hours" were considered to be shorter than those expected of management in other industries because of the lack of attention necessary to operate a bank.

CHAPTER 1: INTRODUCTION
As Haveman (1992) points out, this folklore can illustrate the mundane nature of financial services management prior to the change in government regulatory philosophy under Presidents Reagan and Bush in the 1980's. Financial service organizations, including banks suddenly had what they wanted, but many seemed ill prepared to meet these changes.

The banking industry operates in an environment that has been characterized as having undergone "tremendous changes" (Rose, 1987: ix) and as having a "sense of impermanence, of shifting ground" (Taylor, 1990: 7). In fact, the entire financial services industry (including banks, thrifts, insurance companies, brokerage firms, and credit unions) has undergone a fundamental transformation (Balderstone, 1885) which has changed the "ecological balance" of the industry (Haveman, 1992).

THEORETICAL APPLICATION

From a theoretical perspective the banking industry following deregulation provides an excellent opportunity to examine the theories of strategic choice and organizational ecology. As discussed earlier in this chapter, Hannan and Freeman (1989), argue that organizations seek accountability and reliability and that those pressures are especially high where substantial risk is involved and long term relations normally exist between the organization and its clients. Both of these strongly apply to the banking industry, where individuals and organizations expect their cash and investments to be safe, often over a lifetime.
Hannan and Freeman (1984) also identified at least four factors which increase inertial tendencies in organizations: organizational form; scarcity of resources; population competition; and limited rationality. The existing organizational form constrains the choices available for all organizational members, including managers. Organizational control systems, norms guiding behavior, and incentives make change difficult, if not impossible. As discussed earlier, the banking industry has developed very strong industry norms after years of government monitoring. Major managerial decisions, such as interest rates, were set by the government rather than by internal leadership. The second limiting factor, scarcity of resources, makes adaptive change difficult to manage. Even if a particular change is attractive, scarce resources may prohibit it being implemented. According to some industry experts, capitol issues will often dictate the ability of organizations to change (Lowe and Svare, 1992). Offering new products and competing with investment houses and large retail firms, such as Sears, have been impossible for many banks because of the need for new expertise and substantial resources. The third factor which limits the ability to change is the pattern of competition between and within populations. Competitive pressures magnify the effects of all other factors, complicating change. As discussed at length earlier, deregulation has changed the competitive landscape. In the early 1970’s, the marketing director handed out new toasters and pencils and purchased advertisements from the local radio and newspaper. However, with changes in regulation and the subsequent need to compete effectively, marketing directors obtained seats around the boardroom table.
with top management. The fourth constraint which limits change in organizations is based on the notion of "bounded rationality" discussed by March and Simon (1958). According to Simon (1957: 79) "...it is impossible for the behavior of a single, isolated individual to reach any high degree of rationality" given the number of alternatives available and the vast amount of information necessary to evaluate them. As described earlier, the uncertainty faced by bankers has been monumental. Many bankers seem to feel that the only certainty over the past twenty years has been the presence of uncertainty.

Based on definitions of core changes put forth by Hannan and Freeman (1984, 1989), it is likely that banks have been faced with the need to examine the core features of their organizations. The deregulation and technological changes of the early 1980's have led to the need to reexamine goals, technology, and marketing strategy. The banking literature has taken a prescriptive approach, with a myriad of articles calling for a variety of strategies for meeting the future characterized by a deregulated environment. Researchers adhering to the adaptation perspective would expect monumental change among banks during the period following deregulation. However, as discussed earlier, selection pressures are expected to be strong. Thus, the banking industry provides an ideal opportunity for a test of selection vs adaptation. If a significant number of banks changed strategy during the period immediately following deregulation, then the adaptation perspective would be supported by the research. On the other hand, if the population changed through replacement, that is with new firms entering the population and replacing

CHAPTER 1: INTRODUCTION
older firms which failed, then the selection perspective would be supported by this research. If inertia appears to exist in an environment in which change is as prevalent as this country's banking industry, the organizational ecology perspective should be taken more seriously by strategy researchers who have traditionally grounded their work in the theory of adaptation and the need for change in a changing environment.

The study of organizational survival is also appropriate in the banking industry where the number of institutions has clearly declined. There were 14,146 main banking offices in 1934 and 11,926 in 1991 (FDIC, 1991). The numbers fluctuated during that 57 year period, but the lowest point occurred in 1991, approximately 10 years after deregulation (see Exhibit 1).

**Methodological Appropriateness**

From a research methods perspective, the deregulated banking industry provides a promising setting for research for other reasons, as well. Guarino (1992: p. 8-9) cites five reasons to study banks: 1.) deregulation is an important case of the general issue of relationships between organizations and environments; 2.) deregulation may be sufficiently threatening that firms may consider changing strategy; 3.) the environmental change is unique to the population of organizations under investigation; 4.) the industry contains a large number of firms.
EXHIBIT 1: NUMBER OF FDIC INSURED COMMERCIAL BANKS AND TRUST COMPANIES 1934-1991

<table>
<thead>
<tr>
<th>Year</th>
<th>Main Offices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1934</td>
<td>14,146</td>
</tr>
<tr>
<td>1937</td>
<td>13,797</td>
</tr>
<tr>
<td>1940</td>
<td>13,442</td>
</tr>
<tr>
<td>1943</td>
<td>13,274</td>
</tr>
<tr>
<td>1946</td>
<td>13,359</td>
</tr>
<tr>
<td>1949</td>
<td>13,436</td>
</tr>
<tr>
<td>1952</td>
<td>13,439</td>
</tr>
<tr>
<td>1955</td>
<td>13,237</td>
</tr>
<tr>
<td>1958</td>
<td>13,124</td>
</tr>
<tr>
<td>1961</td>
<td>13,115</td>
</tr>
<tr>
<td>1964</td>
<td>13,493</td>
</tr>
<tr>
<td>1967</td>
<td>13,517</td>
</tr>
<tr>
<td>1970</td>
<td>13,511</td>
</tr>
<tr>
<td>1973</td>
<td>13,976</td>
</tr>
<tr>
<td>1976</td>
<td>14,411</td>
</tr>
<tr>
<td>1979</td>
<td>14,364</td>
</tr>
<tr>
<td>1982</td>
<td>14,451</td>
</tr>
<tr>
<td>1985</td>
<td>14,417</td>
</tr>
<tr>
<td>1988</td>
<td>13,137</td>
</tr>
<tr>
<td>1991</td>
<td>11,926</td>
</tr>
</tbody>
</table>
with similar resources and behavioral repertoires for coping with environmental change; and 5.) consistent and objective data on the industry is available.

SUMMARY AND REVIEW OF SUBSEQUENT CHAPTERS

The strategic management literature has been dominated in recent years by the competing paradigms of adaptation and selection. The research described in this chapter suggests that it is important and interesting to examine these rival theories. This research investigates strategic change in an attempt to determine whether age and size are factors in the likelihood of strategic change in the banking industry and the relationship between strategic change and organizational survival. Chapter 2 presents a literature review of adaptation and selection theories of change which will be used to develop, explain, and justify research propositions. In chapter 3, a detailed explanation of the research methodology and hypotheses will be presented. Chapters 4 and 5 present the findings and conclusions of this research.
CHAPTER II: LITERATURE REVIEW

INTRODUCTION

The word "strategy" is derived from the Greek strategos, meaning "the art of the general" (Hart, 1967). The concept of strategy was introduced into the organizational theory literature during the 1950's by the Harvard Business School faculty, and was taught primarily as a situational art, an imaginative act of integrating many complex decisions (Andrews, 1971). At a time when management thinking was oriented toward individual functions such as marketing, finance and production, Kenneth Andrews and Roland Christenson identified a pressing need for a holistic way of thinking about an enterprise. They articulated the concept of strategy as a tool for accomplishing this task (Montgomery and Porter, 1991). Strategy was formulated as a juxtaposition of company strengths and weaknesses and the opportunities and threats presented by the environment.

In contrast, Chandler (1962) employed a descriptive approach to strategy in his historical examination of large industrial organizations and concluded that strategy was the key mechanism used for devising new directions and that the impact of strategy on performance was substantial. Chandler defined strategy as "the determination of the basic long-term goals and objectives of the enterprise and the adoption of courses of
action and the allocation of resources necessary for carrying out these goals" (p. 13).

Having it's theory grounded in the work of Chandler and the Harvard Business School faculty, the strategic management paradigm generally assumes that environmental changes lead organizations to change their strategies via management. As a result there have been only a few empirical studies that have addressed the question of whether organizations actually change their strategies in response to environmental changes.

Organizational ecologists have based their theories on inertia or the inability of organizations to change (Astley and Van de Ven, 1983; Frombrum, 1988; Perrow, 1986). However, both the selection and adaptation perspectives start from the premise that different contexts require different forms and/or strategies to achieve desired performance. While assumptions regarding the role of the environment, units of analysis, time frames, and the role of management differ, both emphasize the consequences of achieving fit between environment and the organization.

This chapter reviews the concepts of inductive forces that encourage strategic change as proposed by the adaptation perspective, the inertial tendencies that lead to unchanging structures and strategies as proposed by the organizational ecology perspective, and the research streams that have evolved around these two viewpoints of organizational change.
ADAPTIVE CHANGE

THEORY AND DEVELOPMENT

The claim that organizations rarely change is the subject of dispute. While inertia theory is central to organizational ecology, many change researchers disagree. According to March (1981),

Organizations are continually changing, routinely, easily, and responsively, but change within organizations cannot be arbitrarily controlled...what most reports on implementation indicate...is not that organizations are rigid and inflexible, but that they are impressively imaginative (p. 563).

Research findings on changes in strategy have not evolved into a coherent body of knowledge (Ginsberg, 1988). Much of the inconsistencies have arisen from the fact that there has not been agreement as to what actually constitutes change (Snow and Hambrick, 1980; Mintzberg, 1987, 1988; Ginsberg, 1988). However, strategic change has remained a focus of strategic management research because a central tenet of strategic management has been that organizations must maintain a proper alignment with their environment (Smith and Grimm, 1987) and adapt as necessary to environmental changes (Miles and Snow, 1978).

Since Chandler's (1962) seminal work on the evolution of large industrial firms, there has been substantial work on the linkages between contexts, strategy and structure (Channon, 1973; Rumelt, 1974; and
others). This work supports the linkage between environments, strategic choice, structure, and organizational processes. According to these authors strategy and structure are a function of the external environment and the internal environment.

**Resource Dependence**

Within the adaptation paradigm, a variety of perspectives have been forwarded to explain strategic change. Resource dependence theory proponents argue that individual organizations can act to improve their chances of survival and that organizations change in response to dependencies, within their relevant environment, which are created out of the need for resources (Scott, 1987). According to Aldrich and Pfeffer (1976: 83), organizations are "capable of changing, as well as responding to the environment. Administrators manage their environment as well as their organizations, and the former activity may be as important, as the latter."

**Organizational Learning**

Behavioral theorists explain change based on an organization's historical pattern of change in terms of routines (Nelson and Winter, 1982), and search rules (Cyert and March, 1963), and repertoires (Simon, 1947). These features of the organization are expected to affect the way
changes in the environment are perceived, the menu of choice options, and the final decisions that are made (Ginsberg and Baum, 1992). Firms are expected to behave in the future according to the actions and routines they employed in the past (Nelson and Winter, 1982). Undergoing change allows an organization to develop "modification routines" for routinizing change (Levitt and March, 1988). Each time an organization makes a particular change, it becomes more proficient at making that change. Thus, organizations can learn to make changes over time and regardless of whether or not they are successful, experience with a particular change will increase the likelihood of a repetition of that particular change (Ginsberg and Baum, 1992).

**Organizational Slack**

The concept of organizational slack has also been forwarded as a competing theory in change research. Researchers have argued that while slack makes it easier to implement change, it lowers the motivation to make change (Hedberg, 1981; Cyert and March, 1963). According to Thompson (1967), organizations with slack resources are cushioned from the effects of environmental change (Thompson, 1967). Ginsberg and Buchholtz (1990) hypothesized that the less slack an organization has, the more likely it will be to respond to changes in the environment. However, they also suggested that the more slack an organization has the slower will be the response to changes in the environment.
The organizational ecologists recognize that the issue of slack is related to strategic change. In a sense, one of their main concerns is whether organizational slack provides an evolutionary advantage. Hannan and Freeman (1983) argued that the distinction between specialist and generalist organizations involves issues of slack or excess capacity. Generalists must hold some productive capacity in reserve so that they can meet the demands of a variety of markets. Specialists, on the other hand, commit most of their resources to meeting the demands of a narrow marketplace and appear, therefore, to be leaner and more efficient.

**INSTITUTIONAL THEORY**

Institutional theory (Meyer and Rowan, 1977; Scott, 1987) is another adaptation perspective which focuses on the environment. This perspective argues that organizations design formal structures that adhere to the prescriptions of myths in the institutional environment. An organization demonstrates this by acting on collectively valued purposes in a proper and adequate manner (Meyer and Rowan, 1977). Incorporating institutionalized elements into the organization protects the organization from having its conduct questioned and legitimizes the organization's behavior (Meyer and Scott, 1992). Thus, within this paradigm, organizational leaders enact change within the organization when they perceive that modifications occur in the institutional environment.
CONTINGENCY THEORY

Much of the strategic management literature can be traced to the ideas of contingency theory. The assumption of the contingency approach is that across different organizations there is variation in goals, tasks, and environments, and that no single method of organization or strategy could be advocated. Most notable in this perspective is the work of Lawrence and Lorsch (1967), Thompson (1967), and Jay Galbraith (1973). These researchers, and others, posed questions that sought to identify the one best way to organize to meet the challenges and demands of the relevant environment (Scott, 1987). However, in a critique of contingency theory, Child (1973) suggested that this approach suffers from a lack of consideration of the role of management and leadership. In essence, free will and its role in strategy was discounted.

More recently, the assumptions of contingency theory have been criticized (Galbraith and Nathanson, 1979; Schoonhoven, 1981; Drazin and Van de Ven, 1985; Venkatraman, 1989a). Specifically, these authors and others have cited the lack of a clear definition of the concept of "fit," imprecise guidelines for translating verbal statements for analysis, and the subsequent absence of appropriate links between concept and theory testing in contingency research.
STRATEGIC CHOICE

Child's earlier critique developed into a perspective which has dominated strategy research since the early 1970's. Labeled 'strategic choice', this perspective proposes that strategies, structures, and processes must fit industry or strategic group requirements and that these competitive requirements change over time (Crozier, 1964; Hofer, 1975; Pfeffer, 1978). Organizational leaders must be able to scan and interpret the environment and make decisions appropriate for internal and external conditions. According to Weick (1987), organizational environments change constantly, posing an ongoing problem for senior managers. In order to survive and maintain a reasonable return on investment, managers must not only recognize changes in their environment, but also decide whether those changes are important enough to merit some change in their organizational strategy. Equifinality, the notion that there is more than one way to successfully meet environmental demands, is also a differentiating characteristic of the strategic choice perspective. Unlike contingency theorists who sought to identify the one best way to organize given a certain set of environmental conditions (Galbraith, 1973), strategic choice theorists suggest that there are multiple organizational strategies that can lead to survival and a reasonable rate of return on investment under the same relevant environment (Miles and Snow, 1978).
The strategic choice perspective has had a tremendous impact on the field of strategy. The basic principles of managerial choice, adaptation, and equifinality have been the cornerstone for much of the theoretical and empirical work in strategic management. Conversely, these principles directly contradict the notions of the organizational ecologists.

Because strategic choice has dominated the strategy literature, this research will examine the competing theories of adaptation and selection by examining the different predictions of strategic choice and organizational ecology. Figure 2 illustrates the adaptive perspective of strategic choice that will be considered by this research.

**Defining and Measuring Strategy**

**Definition**

Strategy has been defined in a number of different ways. Chandler (1962) illustrated the multifaceted nature of the concept in his early definition of strategy as "the determination of long term-goals and objectives of the enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (p. 13).
FIGURE 2: ADAPTIVE PERSPECTIVE OF STRATEGIC CHANGE
Others have defined strategy in terms of the level of decision making: corporate strategy has been differentiated from business level strategy. According to Bower, Bartlett, Christensen, Pearson, and Andrews (1991) corporate strategy usually applies to the entire enterprise, while business strategy defines the choice of product or service and market or individual businesses within a firm. Bower, et al. define corporate strategy as "the pattern of decisions in a company that (1) determines, shapes, and reveals its objectives, purposes, or goals; (2) produces its principal policies and plans for achieving these goals; and (3) defines the business the company plans to be in, the kind of economic and human organization it intends to be, and the nature of the economic and noneconomic contribution it intends to make to its shareholders, employees, customers, and communities" (p. 104). Business strategy "determines how a company will compete in a given business and position itself among its competitors" (Bower, et. al, 1991: 104).

Recent research in the strategy field has tended to support a multidimensional approach to capturing the concept of strategy. Venkatraman (1989b) has suggested that strategy can be described in terms of four questions: (1) Scope: Should the definition distinguish between the means and the ends; (2) Hierarchical level: Should the construct be defined at a particular level (i.e., corporate, business or functional) or should it be level free?; (3) Domain: Should the domain be restricted to some parts (i.e., functional focus) or should it be broader?; and (4) Intentions v Realizations: Are intended or realized strategies important? Out of these four questions, Venkatraman suggests six (6)
dimensions of strategy that can be utilized: (1) aggressiveness; (2) analysis; (3) defensiveness; (4) futurity; (5) proactiveness; and (6) riskiness.

**Generic Strategy Types**

Much of the strategic choice research has resulted in the development of generic strategy types. Miles and Snow (1978) developed a business level strategy typology which has enjoyed widespread use in the strategy literature over the last decade (Hambrick 1981; Hambrick 1983; Miles and Cameron, 1982; Smith, Guthrie, and Chen, 1986; Shortell and Zajac, 1990; Snow and Hrebiniak, 1980; Zahra and Pearce II; 1990; Zajac and Shortell, 1989; and others). Its impact on adaptation theory and research is evidenced by the fact that there were over 100 citations in the six years following the book’s publication (Zammuto, 1988), and it continues to be utilized by researchers empirically examining strategic change.

Miles and Snow (1978) found four strategic types in their research of several of industries: prospectors, defenders, analyzers and reactors. A firm following a prospector strategy frequently adds to and changes its products and services, consistently attempting to be first to the market. The defender organization offers a relatively stable line of products and services to a defined market, emphasizing cost containment and operating efficiencies. An analyzer’s strategy is to maintain a relatively stable
base of products and services while selectively moving into new areas while trying to maintain efficiency with risk taking. Reactors have no clear cut strategy and are characterized by a lack of a consistent way of adapting to environmental changes.

**Measuring Strategic Change**

**Levels of Strategic Change**

The strategic management literature identifies two distinct levels of strategic change. The first may be described as rapid and radical change (Mintzberg, 1978) and the second as slow and incremental (Quinn, 1978). Strategy change has also been examined in terms of content change and process change. Content change research has focused on both corporate level and business level strategy. At the corporate level content change is defined as a realignment of product/market domains and allocations among them (Ansoff, 1965) and is concerned with identifying the core mission(s) or businesses of the organization. Business level strategy research has defined changes as modifications in product/market domains (marketing strategy) and distinguishes how each business will be pursued (Mintzberg, 1988). Process strategy change research has focused on alternative formal management systems and structures and organizational culture transformations (Ansoff, 1979; Tushman and Romanelli, 1985; and others).
DIMENSIONS OF STRATEGIC CHANGE

Ginsberg (1988: 559) argues that research on changes in strategy "has not evolved into a coherent body of knowledge." In an effort to summarize the definitions of strategic change utilized in change research he conducted a review of the literature and provided a comprehensive overview of those definitions of strategic change. Ginsberg (1988) proposed that the various definitions of "change in strategy" can best be summarized on two dimensions. The first distinguishes between conceptualizing strategy in terms of 1.) changes in position reflected in product/market domain or competitive advantage choices (Bourgeois, 1980), or 2.) changes in perspective exhibited in the integrated set of ideas through which problems are identified and interpreted (Hedberg and Jonnson, 1977). The second dimension distinguishes between conceptualizing changes as 1.) changes in degree or magnitude of a particular strategy, such as a change in the number of businesses in which a firm competes or the intensity of its resource deployments to a particular functional area (Miller and Freisen, 1983), or 2.) changes in pattern, such as a change from related to unrelated diversification (Galbraith and Schendel, 1983). While there has been a general acceptance by strategic management researchers that firms have the ability to restructure organizations in response to changing environmental conditions (Tushman and Romanelli, 1985), there has been little agreement on conceptual and operational definitions and measures of strategic

CHAPTER II: LITERATURE REVIEW 44
change. The fragmented and often conflicting empirical results of research on strategic change are a reflection of these differing methods and definitions of strategic change. The next section summarizes some of the findings of these research efforts.

**Empirical Results**

Changes in environmental attributes appeared to associate significantly with changes in strategy in several contexts. Studies examining adaptive change following deregulation in banking (Guarino, 1991), oil drilling (Mascarenhas, 1989), trucking (Corsi and Grimm, 1989), railroads (Smith and Grimm, 1987), and minicomputers, cement and airlines (Tushman and Anderson, 1986) found some support for strategy changes in response to environmental shifts. Zajac and Shortell (1989: 425), in a study of the hospital industry, found that "organizations, more often than not, do change their strategy in response to environmental shifts." This statement was qualified, however, by findings that suggested that prior strategy and strategic type influenced whether a particular organization changed strategy. Other studies found minimal support for the contention that environmental changes lead to strategy changes unless they were accompanied by external consultants (Ginsberg, 1986), new executives, or declining performance (Graham and Richards, 1979; Tushman, Virani and Romanelli, 1985).
Other researchers have examined the role of top management in strategic change. In a recent study, Wiersema and Bantel (1992) found a relationship between top management team demography and strategic change. These authors suggested that top manager's cognitive perspectives, as reflected in such demographic variables as age, academic training, organizational tenure and specialization were linked to their propensity to enact change within their organizations.

SELECTION AND REPLACEMENT

Theory and Development

Whereas researchers favoring the adaptation perspective agree on the notion that managers can enact change and that organizations can and will change in response to environmental change, proponents of the selection perspective argue that change in organizational populations occurs when new organizations enter the population and replace previously existing organizations which are no longer being selected by the environment. While this research is based on the organizational ecology paradigm, there are two related schools which have similar conceptualizations of the role of the environment in organizational change: industrial economics and transaction theory.
INDUSTRIAL ECONOMICS

The focus of industrial economics research has been on 1.) context, variables such as entry and exit barriers, concentration ratios, size distribution of firms and elasticity of demand; 2.) conduct, variables such as price and advertising levels, innovation and vertical integration; and 3.) performance (Baysinger, Meiners, & Zietheamel, 1981; Harrigan, 1981; Hatten, Schendel and Cooper, 1978; Scherer, 1980). The focus here is on a firm's task environment and defined by industry structure. Porter (1980) suggested that an important determinant of competitive environment, and the resulting strategy and performance of an organization, is the type of industry structure in which it is located. He classified the many factors influencing industry competition into five major categories: rivalry among existing firms; the bargaining power of suppliers; bargaining power of buyers; the threat of new entrants; and the threat of substitute products and services.

There has been some research on strategic change in the industrial economics literature (Hatten and Schendel, 1977; Oster, 1982; Cool and Schendel, 1987, 1988). Much of this research has examined the presence of strategic groups within industries. Like the organizational ecologists, this research has focused at the macro level, the industry, as opposed to the individual firm. Oster (1982) argued that change among strategic groups is difficult because of the initial investments in strategy and structure when a firm first decides how to compete within the industry.
Later change is hard because of these initial decisions and only occurs when profits decline and management is required to make changes for profitability and survival. Thus, principles from the adaptation and selection positions are married in this perspective.

**Transaction Theory**

A related perspective, popularized by Williamson (1975), shifts the environmental focus from technology and the competitive production of commodities to transactions and the costs associated with the exchange of goods and services. His argument suggests that for individuals to be willing to enter into exchanges, they must be certain that their interests are safeguarded. As exchanges become more complex and uncertain, due to unpredictable environments, organizations develop in order to reduce costs and safeguard transactions. Various organizational forms are appropriate given differing types of exchanges. Thus organizational form is dictated by transaction type.

**Organizational Ecology**

Influenced by the work of Amos Hawley's (1950, 1968) neoclassical theory of human ecology and Stinchcombe's (1965) insightful analysis of organizational change, Michael Hannan and John Freeman (1977, 1989) developed a theory of organizational change based on the notion of
environmental selection. Their approach directs attention primarily toward organizational diversity. It seeks to answer the question of why there are so many (or so few) kinds of organizations (Hannan and Freeman, 1977, 1989). They examine organizational change, primarily on the population level, looking at the creation of new forms and the competitive exclusion of forms. They argue that existing organizations, especially the largest and most powerful, rarely change strategy quickly enough to conform to environmental demands (Hannan and Freeman, 1989). They further suggest that when change does occur it will happen early in the life of an organizational form and the outcomes will be random due to loose coupling between intentions and results. Over time, in order to become and remain accountable and reliable, organizations will become rigid or inert and this inertia will increase with organizational age and size (Hannan and Freeman, 1989).

In order to understand the definition of strategic change as proposed by the selection perspective, one must consider the unit of analysis which is quite different from the adaptation perspective. The unit of analysis is the population of firms which share a common set of resources. This population space is referred to as a niche. The emphasis is strictly on the nature of context as the determinant of the organizational form that will thrive in that setting. Organizations are expected to adopt a strategic orientation very early, in response to their niche characteristics, dependencies and commitments, and to be less likely to change strategy later (Tushman and Romanelli, 1985).
The environment poses a set of key survival characteristics that the organization either fits or does not fit and survival becomes a product of natural selection. Provided the environment remains constant, or at least predictable in its change patterns, a dominant organizational form and strategy emerge (Hawley, 1950; Stinchcombe, 1965).

Brittan and Freeman (1980) theorized that given certain environmental conditions, one would expect to find a specific organizational type selected by that environment. Their classification scheme is based on two dimensions: breadth of organizational domains and the manner in which organizations exploit resources. These very clearly represent two of the common dimensions utilized to operationalize strategy (Harrigan, 1981; Mintzberg, 1978; Mintzberg and Waters, 1982; Mintzberg, 1988; Fromburn and Ginsberg, 1990; and others). The former is represented in most strategy typologies including the generalist and specialist classification (Baum; 1990; Kelly and Amburgey, 1991; Havemen; 1991, 1992; Singh, Tucker and Meinhard, 1991) while the latter has been commonly used to measure and conceptualize strategy.¹

Organizations do not evolve as environments and niches change, but are replaced by new ones (Hannan and Freeman, 1984, 1989). The role of executive leadership is considered to be sharply constrained after the birth of the organization (Tushman and Romanelli, 1985) and has little to do with the process of change and evolution of the organization. According to Hannan and Freeman (1989),

¹See Frombrum and Ginsberg, 1990 for a discussion of the use of resource deployment as a measure of strategy.
...we reject the view that the diversity of organizational structures at any time reflects only recent adaptations of these organizations in favor of the view that diversity reflects a long history of foundings and disbandings of organizations with unchanging structures (p. 19).

Figure 3 represents the selection and replacement view of strategic change as developed within the organizational ecology perspective.

**Empirical Results**

Strategy, when it is referred to at all, is considered rather coarsely in terms of specialists and generalists as defined by Brittan and Freeman (1980) and Miller (1991). Table 1 summarizes the operationalization of strategy in organizational ecology studies of strategy change.

Research based on the selection perspective's assumptions of strategic change has resulted in conflicting results regarding the relationship between age and size and inertia (See Table 2). Singh, Tucker and Meinhard (1988) and Baum (1990) found support for a "fluidity" of the aging hypothesis in their studies of social service organizations and day care centers. Rates of change actually increased with organizational age. Ginsberg and Buchholtz (1990) and Kelly and Amburgey (1991), however, found support for inertia in their research of HMO's and airlines. In both studies, the likelihood of core change decreased with age.
Figure 3: Selection Perspective of Strategic Change
<table>
<thead>
<tr>
<th>Researcher and Date</th>
<th>Population</th>
<th>Conceptualization of Strategy</th>
<th>Operationalization of Strategic Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baum (1990)</td>
<td>Daycare centers in Toronto, Canada</td>
<td>Generalists and Specialists</td>
<td>Changes in the number of different age groups served where organizations serving more than one age group were defined as generalists</td>
</tr>
<tr>
<td>Ginsberg and Buchholtz (1990)</td>
<td>Health Maintenance Organizations in the U.S.</td>
<td>Profit and Nonprofit</td>
<td>Changes from nonprofit to profit organizations</td>
</tr>
<tr>
<td>Kelly and Amburgey (1991)</td>
<td>U.S. Aircarriers</td>
<td>Generalist and Specialists</td>
<td>Changes in diversification (product/market domains)</td>
</tr>
<tr>
<td>Singh, Tucker, Meinhardt (1988)</td>
<td>Voluntary Social Service Organizations in Toronto, Canada</td>
<td>Client and service domains</td>
<td>Changes in services offered and clients served</td>
</tr>
</tbody>
</table>
**Table 2: Empirical Research Findings on the Relationships Between Organizational Age, Organizational Size and Inertia**

<table>
<thead>
<tr>
<th>Researcher and Date</th>
<th>Sample</th>
<th>Variables</th>
<th>Age-Inertia Relationship</th>
<th>Size-Inertia Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baum (1990)</td>
<td>588 day care centers in Toronto (1971-1987)</td>
<td>Age of the organization measured as the number of years since licensure Controlled for size</td>
<td>Found support for a fluidity of aging theory: As age increased inertia decreased</td>
<td>Conflicting results</td>
</tr>
<tr>
<td>Ginzberg and Buchholtz (1990)</td>
<td>Health Maintenance Organizations in the U.S. (reported in Interstudy Census of HMO's (1983-1987)</td>
<td>Age of the organization measured as the number of years in operation Size of the organization measured as the number of members in an HMO</td>
<td>Found a positive relationship: as age increased, inertia increased</td>
<td>Found positive relationship: as size increased, inertia increased</td>
</tr>
<tr>
<td>Kelly and Amburgey (1991)</td>
<td>178 U.S. Air Carriers (1928-1985)</td>
<td>Age measured as the time of founding subtracted from the time of strategic change Size measured as the natural log of the assets of the airline at the time of strategic change</td>
<td>Found a positive relationship: as age increased, inertia increased</td>
<td>Conflicting</td>
</tr>
<tr>
<td>Singh, Tucker, and Meinhard (1988)</td>
<td>Voluntary Social Service Organization in Toronto (1970-1982)</td>
<td>Age measured as the number of years since founding</td>
<td>Found support for a fluidity of aging theory: as age increased, inertia decreased</td>
<td>Found a positive relationship: as size increased, inertia increased</td>
</tr>
</tbody>
</table>
Some support for a positive relationship between organizational size and inertia can be found in the empirical literature. Ginsberg and Buchholtz (1990) found a relationship between an increase in size and a decrease in response time of HMO's to a major environmental change and Singh et al. (1988) found a decrease in the likelihood of core change in a population of voluntary social service organizations in Canada. However, Baum (1990) and Kelly and Amburgey (1991) found conflicting results. Both found a positive relationship between organizational size and one kind of core change, but found a negative relationship between size and other core changes.

**STRUCTURAL INERTIA THEORY**

The notion of inertia is not exclusive to the selection perspective. Researchers employing the adaptation perspective have argued that organizations can become inert. According to Miles and Snow (1978), "adaptive decisions made today tend to harden and become aspects of tomorrow's structure" (p. 28). Their research suggests that organizations adopt one "type" of strategy based on their dominant coalition's perceptions of the internal and external environment and options and that over time it becomes difficult to change strategic types. Once an organization has had experience with a particular strategy it becomes difficult to change to another strategic type.
While both adaptation and selection perspectives acknowledge the presence of inertia, there is a vast difference in the way each defines inertia and the role that inertia plays in the organizations. Adaptation theorists view inertia as a constraint on management's ability to change in response to environmental modifications and focus on ways of overcoming inertia (Tushman and Romanelli, 1985), whereas selection theorists view inertia as a consequence of selection and a characteristic which allows organizations to maintain accountability and reliability (Hannan and Freeman, 1984).

Selection theories and research on the relationship between organizations and environments has been based on the assumption that inertial pressures on structures are strong. According to Hannan and Freeman (1984) individual organizations are subject to strong inertial forces. They argue that this is an "obvious" feature of organizations,

... for wide classes of organizations there are very strong inertial pressures on structure arising from both internal arrangements (for example, internal politics) and from the environment (for example, public legitimation of organizational activity). To claim otherwise is to ignore the most obvious feature of organizational life (Hannan and Freeman, 1977, p. 957).

Hannan and Freeman (1984) suggest that there are both internal and external causes of inertia. Internal factors include such things as sunk costs in plant, equipment, and personnel and the dynamics of internal politics. External barriers include legal and other barriers to change, dependency relationships, and the threat of loss of legitimacy.

CHAPTER II: LITERATURE REVIEW
According to Hannan and Freeman (1984) the important issue is the timing of change. Understanding this notion of timing is fundamental to understanding the difference between adaptation and selection. Organizational ecologists argue that theories of learning are not appropriate for organizations because "learning and adjusting structure enhances the chance of survival only if the speed of response is commensurate with the temporal patterns of relevant environments" (p. 151). They suggest that firms have high inertia when the speed of reorganization is much lower than the rate at which environmental conditions change. Their definition of inertia implies that inertia is context dependent. Thus, one type of organizational form might have high inertia in one environmental niche but not in another.

Hannan and Freeman (1984) developed a set of assumptions on which they developed five theorems regarding the presence of inertia. Those theorems are as follows:

**THEOREM 1:** SELECTION WITHIN POPULATIONS OF ORGANIZATIONS IN MODERN SOCIETIES FAVORS ORGANIZATIONS WHOSE STRUCTURES HAVE HIGH INERTIA (p. 155).

**THEOREM 2:** STRUCTURAL INERTIA INCREASES MONOTONICALLY WITH AGE (p. 157).

**THEOREM 3:** ORGANIZATIONAL DEATH RATES DECREASE WITH AGE (p. 157).

**THEOREM 4:** ATTEMPTS AT REORGANIZATION INCREASE DEATH RATES (p. 159).

**THEOREM 5:** COMPLEXITY INCREASES THE RISK OF DEATH DUE TO REORGANIZATION (p. 162).
With respect to the effects of size on inertia, the authors admit that "the effects of size on inertia are problematic" (p. 163). However, they suggest that it is "widely agreed that larger organizations are more ponderous than small ones,... small organizations are not only more likely than large ones to attempt a change, but are more likely to die in the process" (p. 163).

The organizational ecology paradigm argues that inertia is a consequence of selection rather than a precondition for selection and that age, size and complexity affect the strength of inertial forces in an organization. Figure 4, from Kelly and Amburgey (1991), illustrates the theory of structural inertia as proposed by Hannan and Freeman (1984). The model shows that structural inertia varies with organizational age and size. There is a positive relationship between both age and size and increased inertia. As an organization becomes more reproducible by way of standardized routines, institutionalization, and aging, it becomes increasingly inert. If organizations increase in size, inertia tendencies increase due in most cases to the tendencies of large organizations to become more formalized, bureaucratic, and complex as the number of employees grows. As inertia increases, the likelihood of a core change decreases which leads to the likelihood of replacement by a new structure or failure of the organization.
PROPOSITIONS

ORGANIZATIONAL AGE

It has long been recognized that with organizational age, change comes more slowly and is less likely. As early as the work of Stinchcombe (1965) it was argued that as organizations age, their members learn to trust and to cooperate with each other and are more willing to invest in old routines than in new ones (Nelson and Winter, 1982). Organizational habits form with age, leading to increased bureaucracy and entrenchment of traditional ways of operating (Evans and McQuillian, 1977; Inkson, Pugh, and Hickson, 1970). Organizational members become attached to activities and ultimately, the means become ends. In other words, individuals within organizations do not react quickly to changes and thus organizations themselves have difficulty changing. Power relationships also become fixed (Pfeffer and Salancik, 1978) leading to a tendency of managers to repeatedly hire people similar to themselves (Kanter, 1977) which results in the maintenance of not only the same routines, but unchanging policies, procedures, structures and strategy. Processes of external legitimation also take time. Although new organizations require some degree of public legitimacy in order to gather the resources necessary to begin operations, new organizations need time to establish a network of support. According to Hannan and Freeman (1984), newly created organizations have lower levels of reliability and accountability than older ones. Levels of
reliability and accountability should increase with age. Based on earlier arguments that inertia is a consequence of selection and that accountability and reliability are necessary attributes for selection, then as accountability and reliability increase so should inertia increase with organizational age. Based on the above theoretical explanations and empirical findings, the first proposition can be stated as follows.

P1: THE AVERAGE NUMBER OF CHANGES IN STRATEGIC ORIENTATION IN U.S. BANKING INSTITUTIONS WILL DECREASE WITH ORGANIZATIONAL AGE.

Organizational Size

Organizational ecologists admit that the relationship between size and inertia is problematic (Hannan and Freeman, 1984): however, they suggest two ways that the association between the two variables can be conceptualized. First, one may assume that there is a critical size, which may vary by form of organizations and age, at which failure to delegate power sharply limits viability. Organizations may be quite responsive to change below the threshold level of size while those above the threshold experience higher inertia. The second conceptualization views the relationship as being roughly continuous where the level of inertia increases with size.

From the organizational ecology perspective, inertia is a consequence of selection. In order to maintain accountability and reliability, an organizations' core must become stable. On the average,
firms will respond more slowly then individuals to environmental change. The exceptions are rare among large firms. Only among small firms, where the organization is little more than an "extension of the wills of the dominant coalition" (Hannan and Freeman, 1984, p. 158) and where the leader does not delegate authority down the chain of command, will change for firms be accomplished as quickly as for individuals. Larger firms are more likely to be formalized and bureaucratic than small firms. These organizations tend to require more formalization and complex structures given the necessity to coordinate the work flow of large numbers of employees (Scott, 1987). Even if the need for change is apparent, managers of complex organizations may find it difficult to implement core changes because of the complex processes involved in adjusting information and resource flows (Hannan and Freeman, 1984). As Downs (1967: 60) argues for the case of public bureaus "...the increasing size of the bureau leads to a gradual ossification of its action...the spread and flexibility of its operation steadily diminish." Based on the above theoretical explanations and empirical findings, the second proposition is advanced.

P2: THE AVERAGE NUMBER OF CHANGES IN STRATEGIC ORIENTATION IN U.S. BANKING INSTITUTIONS WILL DECREASE WITH INCREASING ORGANIZATIONAL SIZE.
RELATIVE INERTIA

With respect to the relationship between organizational age and organizational size and inertia Hannan and Freeman (1989) assume that individual organizations are characterized by relative inertia. They do not suggest that organizations never change, but that changes are infrequent and cannot be timed to precisely coincide with environmental shocks. The next two propositions argue that, being more inert, older banks and larger banks will be slower to respond to deregulation than their newer and/or smaller counterparts.

P3: CHANGES IN STRATEGIC ORIENTATION WILL OCCUR LATER IN OLD BANKS THAN IN YOUNG BANKS.

P4: CHANGES IN STRATEGIC ORIENTATION WILL OCCUR LATER IN LARGE BANKS THAN IN SMALL BANKS.

ORGANIZATIONAL SURVIVAL

Hannan and Freeman (1984) argue that attempts to change core features increase the probability of organizational failure. This contention is based on two assumptions: 1.) selection favors organizations with high levels of reliability; and 2.) the process of reorganization will lower reliability of performance. However, they contend that larger organizations are more likely to survive reorganization than smaller organizations. Large organizations tend to
have more capacity to absorb the shocks created by change than small organizations which tend to have smaller margins for error because they can not easily reduce the scope of their operations much in response to temporary setbacks.

Three additional assumptions are identified by Hannan and Freeman as critical to this argument: 1.) structural reorganization sets the organizational time clock back to zero producing a "liability of newness" in older reorganized organizations; 2.) death rates increase as the amount of time necessary to reorganize increases; and 3.) complexity increases with the risk of death due to reorganization.

In summary, Hannan and Freeman (1984) argue that attempts to make core changes lead to an increased likelihood of organizational failure. With respect to size, smaller organizations are more likely to make a core change, but they are also more likely to be selected out in the process. Larger organizations will survive longer because they presumably have a greater cushion against shocks created by such change. However, because the "liability of newness" clock is reset to zero, and because of the level of complexity which generally accompanies larger organizations, they will be more likely to eventually fail following a core change. The following proposition reflects these assumptions.

P5: OTHER THINGS EQUAL, A GREATER NUMBER OF FAILURES WILL BE OBSERVED AMONG BANKS WHICH CHANGE STRATEGY FOLLOWING DeregULATION THAN THOSE WHICH DO NOT CHANGE STRATEGY.
Organizational ecologists make few statements about individual organizational strategies and the relationship between strategy and organizational survival. Hannan and Freeman (1989) discuss the two broad strategies of generalists and specialists which were defined in an earlier section of this chapter. With respect to change, they suggest that because of slack resources, generalists will be better able to withstand the organizational shock of a core change than the specialists, which are by design leaner organizational forms. However, with respect to more finely defined strategies, organizational ecologists make no distinction regarding particular strategies and a firm's ability to survive reorganization.

Nevertheless, the relationship between strategic type and survival following a environmental disruption is interesting and merits consideration. This relationship is reflected in the following research question.

WILL STRATEGIC TYPE AFFECT THE FAILURE RATE OF BANKS FOLLOWING DeregULATION?

THE MODEL

Figure 5 illustrates the proposed relationships for this research. Organizational age and organizational size are expected to increase organizational inertia which in turn is expected to decrease the likelihood of a change in organizational strategy. However, where changes
FIGURE 5: PROPOSED MODEL
in strategy do occur, these changes are expected to increase the likelihood of organizational failure.

SUMMARY

This chapter reviewed the literature pertaining to the relationships and linkages among organizational age, organizational size, inertia and strategic change from both the adaptation and selection perspectives. Each of the constructs of interest were defined in conceptual terms and justified on the basis of prior literature. Based on the relevant theory and research, a model and propositions were presented. Chapter 3 will present the hypotheses and a framework of methods for the test of the hypotheses.
CHAPTER III: RESEARCH METHODOLOGY

INTRODUCTION

The primary goal of this research effort is to examine inertia through strategic change in an industry that has undergone an environmental jolt. Chapters 1 and 2 discussed the current and previous research related to inertia and strategic change and their relationship to organizational age, organizational size, and survival. The purpose of this chapter is to describe a framework for meeting the objectives of this research. The study is exploratory in nature and will be limited to one industry over a ten year period (1978 - 1987). All constructs will be operationalized using objective, secondary data. The following pages will outline the conceptual and operational definitions of the variables of interest, the measures and sources of data, the analytical methods employed, and the specific hypotheses of the research. The chapter will conclude with a discussion of the validity issues of importance in the interpretation of the findings of this research.

CONCEPTUAL AND OPERATIONAL DEFINITIONS

Chapter 2 discussed a variety of conceptual definitions for each of the variables of interest. Prior to determining the working definitions
of these constructs, the conceptual understanding of each variable is specified. Following a brief discussion of each variable an operational definition is presented. Specific measures for each variable will conclude each section.

**Variables**

**Inertia**

Hannan and Freeman (1984), in an attempt to clarify and define the meaning of structural inertia, described inertia as creating within organizations the inability to succeed in "making radical changes in strategy and structure in the face of environmental threats" (p. 149). According to Freeman and Hannan (1983), "If inertial forces are strong, adaptation by individual organizations cannot be the main force for changing in organizational populations" (p. 1116). Rather than changing, organizations are replaced or maintain essentially the same core features over time. This constancy is a result of an organization's ability to offer accountability and reliability.

Hannan and Freeman (1984) argue that organizations have a core which is more difficult to modify than peripheral parts of the structure. In defining the core structure, Hannan and Freeman (1984), classify items of structure according to their bearing on resource mobilization. From the perspective of resource mobilization, the core aspects of the organization
are: (1) stated goals on which resources are mobilized, (2) forms of authority within the organization, (3) the core technology including capital investment, infrastructure, and skills of employees, and (4) broad marketing strategy including kinds of customers and the way the organization attracts resources from the environment (Hannan and Freeman, 1989).

These four properties of organizations stand in a rough hierarchy, with stated goals subject to the strongest levels of inertia and marketing strategy the weakest. Therefore, change may occur in one of these features and not in the others, with marketing strategy being the least constrained, and proceeding up the hierarchy, stated goals being the most constrained.

As discussed in Chapter 2, definitions of strategy embody at least three of these four components: goals, technology, and marketing strategy. Haveman, (1992) in her study of inertia and change in California Savings and Loan Associations, argued that diversification into new markets could include different clients, products, and/or technology. Furthermore, she explicitly states that, "Change in one or more of these dimensions of domain (clients, products, and technology) involves a change in an organization's core form."

Rumelt (1974) and others have argued that diversification can be used as a measure of strategic orientation. Thus one assumption of this research is that the strategy of an organization can be used as a measure of goals, technology and marketing strategy, three of the core characteristics identified as subject to inertia. Furthermore, if one
agrees with Haveman (1992) that "the opposite of stability (inertia) is change," then strategic change can be used as a surrogate measure of inertia. If banks did not change their strategic orientation following deregulation, one explanation could be the presence of inertia forces within the organization. This assumption is consistent with much of the research examining the presence of inertia (Baum 1990; Fombrum and Ginsberg, 1990; Ginsberg and Buchholtz, 1990; Haveman, 1992; Kelly and Amburgey, 1991; Singh, Tucker and Meinhard, 1988).

In this research inertia is measured as the absence of changes in strategic orientation over the time period under review. A bank is considered to be subject to strong inertial forces when it does not change its strategic orientation following deregulation.

**Strategy and Strategic Change in Banks**

Theoretical papers calling for changes in banking strategy during and following deregulation have dominated the banking literature since the early days of deregulation (Thompson, Berry, and Davidson, 1981; Crane, Kimball, and Gregor, 1983; Roussakis, 1984; Sapp, 1984; Ballarin, 1986; Channon, 1986; Rose, 1987; Davis, 1989; Taylor, 1990; Lowe and Sware, 1991; Pihl and Wambay, 1991; Roth and van der Velde, 1991; Sware, 1992), and most have been dedicated to identifying the most profitable strategies for banks to pursue as they meet the challenges of change caused in large part by deregulation and disintermediation.
Empirical research examining banking strategy has suggested that traditional strategy typologies are not appropriate methods of categorizing the strategies of financial institutions (Goodman, 1988; Guarino, 1991). In one of the few studies examining strategies of commercial banks, Goodman (1988) reported trouble applying Porter’s (1980) and Miles and Snow’s (1978) strategy typologies. His specific problem was that he could not distinguish whether the troubles were due to faulty measures of the strategy types or the inapplicability of the typologies to commercial banks. In a more recent study Guarino (1991) echoes his sentiment,

For example, it is often argued that Miles and Snow’s (1978) Defender may behave like Porter’s (1980) Low Cost Leader. However, in the context of this study it is equally plausible that a ‘Defender’ commercial bank is one that did not change its strategy after deregulation. This study is not prepared to distinguish between these two possibilities, or many others... (p. 191).

Recent studies of commercial banks have used balance sheet items to identify business level strategy. Goodman’s (1988) approach was to isolate the top 10% of commercial banks in each asset category and label these institutions as "leaders" according to the asset category. Guarino (1991) argued that the asset side of the balance sheet influences performance more than the liabilities side which is heavily influenced by the choices of depositors. Thus, he defined strategy in terms of four types of loan and securities activity: a commercial loan strategy; a retail loan strategy; an agricultural loan strategy; and a securities
strategy. Assets primarily from commercial loans classified a bank as a commercial loan bank whereas one with assets concentrated in U.S. Treasuries, federal, state, or local bonds would be considered a securities bank.

Reger, Duhaime, and Stimpert (1992), in their study of bank holding companies identified three components of strategy based on key decision areas. Product/market mix decisions were measured in terms of loan activity. Four categories of loans were analyzed: personal loans, commercial loans, agricultural loans, and real estate loans. These four were deemed to constitute the largest and most important product/market mix areas for bank holding companies. Diversification, considered to be a second important strategic decision by the authors was examined in terms of the extent of diversification into new geographic markets and into nontraditional banking industry services. Risk, a third key component in banking strategy, was measured in terms of interest rate risk. In another study of bank holding companies, Rediker and Middleton (1992) measured the magnitude and pattern of strategy with two variables. Change in magnitude of strategy was measured as change in loan strategy growth while strategic pattern was measured as loan portfolio diversification.

It has been noted that determining the key strategic variables within an industry is one of the most difficult, but critical tasks facing a researcher (Harrigan, 1985). Objective, financial data is used to determine strategy in this study. Two arguments motivate this decision. First, while strategy has been defined many ways for theoretical and empirical research purposes, I prefer a definition of strategy which
captures the most important strategic decision areas for the specific industry under consideration. Such a methodology is deemed to best follow the definition of strategy as first put forth by Chandler (1962): "the determination of the basic long term goals and objectives of the enterprise and the adoption of courses of action and the allocation of resources for carrying out these goals" (p. 13). Recently, Mintzberg (1988), questioned the value of typologies: "The problem is that these lists (typologies) almost always either focus too narrowly on special types of strategies or else aggregate arbitrarily across all varieties of them" (p. 1). Thus, none of the "common" generic strategic typologies is utilized in this research. Second, longitudinal research requires information about strategy from years prior to the date of data collection. The ability of CEO's to retrospectively recall strategy has been questioned (Snow and Hambrick, 1980). Using retrospective accounts as indicators of past strategy has been shown to be flawed when study participants are asked to recall information. In a study of CEO's who were asked to identify their strategy and then were asked again two years later to recall their strategy, more than 58 percent did not agree with their previous account of strategic type (Golden, 1992).

Two variables will be used to measure corporate level strategy and strategic change in the banking industry: diversification of product mix and risk. The former is a measure of focus and the latter of aggressiveness. In an effort to obtain a richer picture of the strategy variable the two measures will be examined both separately and simultaneously. Using the two measures of strategy provides a more
through measure of banking strategy than has been used to date because previous studies have tended to use only one measure of banking strategy. Loan portfolio diversification (LPD) will be used to measure product mix. A measure of the ratio of loans to total assets will be the primary measure of risk. These variables represent critical strategic decision areas for bank managers and have been used by researchers to determine strategy in the banking industry (Guarino, 1991; Reger, Duhaime, Stimpert, 1992; Rediker and Middleton, 1992).

These two measures are particularly appropriate for this research because of the nature of the changes brought about by deregulation. As described in Chapter 1, the DIDMCA and the Garn St. Germain Act specifically allowed banks to take on greater risk and greater levels of diversification with the lifting of interest rate ceilings and product deregulation. Thus, it is expected that strategic changes which occurred as a result of these changes in regulation will be reflected in the variables that will be used as measures of risk and diversification.

Support for these measures of strategy is not only found in banking research, but also in measures of strategy from both the adaptation and selection perspectives. LPD measures levels of diversification, which has been used to determine whether a firm is following a generalist or specialist strategy (Kelly and Amburgey, 1991). Diversification has also been used as a measure of strategy in the adaptation literature (Channon, 1973; Rumelt, 1974; Miles and Snow, 1978; Zajac and Shortell, 1989; and others). Risk has also been cited as a generic measure of business
strategy (Venkatraman, 1989) and is common in the banking and finance fields. The two variables will be defined and measured as follows.

Loan portfolio diversification will be defined in terms of loan activity. The five major categories of loans to be measured will be personal, commercial, agricultural, real estate and other loans. Banks determine the mix of loans and may choose a concentration strategy where they have loan activity predominantly in one or two loan areas or a balanced loan portfolio where they have an approximate balance among loan categories. Loan portfolio diversification (LPD) can be measured by the Herfindahl-Hirshman index of concentration (Rediker and Middleton, 1992). The LPD can range from 1.00, where an institution has all of its loans concentrated in one category, to .20, where the loan activity is equally spread across the five categories.

Risk will be defined in terms of the ratio of total loans to total assets. A commercial banks assets are funds that are put to different uses. These assets are made up primarily of loans and securities. Because securities are frequently secured by the government, they are considered less risky than loans. Thus, the higher the loan-to-asset ratio the more concentrated the asset activity is in loans as opposed to securities and the more risky the bank's asset strategy.
Organizational Size

In similar studies, organizational size has been measured in terms of assets or number of employees. Haveman (1992) and Kelly and Amburgey (1991) used the natural log of each firm's assets at the time of strategic change. Baum (1990) and Singh, Tucker and Meinhard (1998) controlled for size, while Ginsberg and Buchholtz (1990) utilized a measure of the natural log of the number of members in an individual HMO to represent organizational size. Changes in technology and regulation during the period under study may have led to fluctuating human resource needs. As banks were involved in mergers, takeovers, and acquisitions and as technology provided more and more of the output formerly produced by people, the number of bank employees may have changed such that banks size over the ten year period would be difficult to measure by counting numbers of employees. Therefore, I prefer to use individual firm assets is used as a measure of firm size. This choice is consistent with Guarino (1991) who recently examined strategy in the banking industry and with similar research efforts in other industries (Kelly and Amburgey, 1991; Haveman, 1992).
ORGANIZATIONAL AGE

A relatively straightforward measure, organizational age is typically calculated as the number of years since founding or incorporation subtracted from the time of strategic change. U.S. banks have a choice of obtaining a state or national charter. This charter date is the best representation of founding date for U.S. banks. Thus, organizational age will be defined as the number of years since first obtaining either a national or state charter calculated at the time of observation.

ORGANIZATIONAL SURVIVAL

Commercial banks are required, by law, to make financial reports to the FDIC twice a year. For the purposes of this research a firm will be defined as an exiting or non-surviving firm if it ceases to exist in the FDIC year end report. This definition includes the assumption that mergers and acquisitions represent a new form and the exit of the former organizational form. It is a broad definition which does not limit organizational exit to the outright dissolution of the bank.

Organizational ecologists often use definitions of organizational death which include more than dissolution. According to Freeman, Carroll, and Hannan (1983), "organizations can die in a variety of ways. Two of the more important are merger and dissolution" (p. 702). Haveman (1992)
included mergers in her count of exits from the California Savings and Loan Associations. However, she did distinguish between voluntary mergers and involuntary mergers. The former she defined as those who entered into mergers freely and the latter as those who were technically insolvent. In the FDIC data, banks are identified with a code number. When two banks merge there are three possible code numbers for the new bank: it may take on the code number of either of the former banks or a new number may be assigned. However, the typical restructuring in the industry has been through acquisition. When one bank acquires another bank the code number for the newly formed bank is the acquiring bank number. Consequently, exiting banks, as defined in this research, includes primarily those banks which failed and those banks which were acquired. However, the interpretation of the findings of this research must consider the possibility of error caused by mergers if a stringent definition of death is used which only includes banks in financial trouble. Thus, the broader definition of population exits which includes mergers, acquisitions, and failures is utilized. There is no assumption that an exit is caused only by poor financial performance. In this industry where institutions have traditionally been protected from financial failure by the federal government, this definition is deemed appropriate. Future research may be able to identify the financial soundness of banks prior to exit and make the distinction between merger as a strategy and merger used as a last resort to survival.
CONTROLS

As a control measure, all firms studied will be selected from one resource niche. According to Hannan and Freeman (1989) and Hannan and Carroll (1992), a niche is the social, economic, and political conditions that can sustain the functioning of organizations that embody the organizational form found in that niche. "In other words, the fundamental niche consists of the set of all environmental conditions in which a population can grow or at least sustain its numbers" (Hannan and Carroll, 1992).

While all commercial banks were affected by the deregulation of the 1980's, a commercial bank can be freestanding or it can be organized as part of a bank holding company (BHC). A BHC is a corporation which is formed to acquire and hold the stock of one or more operating entities. BHC's determine the strategies of the individual banks within the corporation, making it difficult to assess the age and size of an individual bank. Thus, only independent banks and single BHC's will be examined in this research.

DATA COLLECTION

Objective financial data will be used to operationalize banking strategy. The literature strongly supports the use of objective financial data to measure strategic orientation (Hatten, Schendel, and Cooper; 1978;
Miller and Freisen; Lenz, 1980; Datta, 1978; Snow and Hambrick, 1980; Venkatraman, 1989; and others). Frombrum and Ginsberg (1990), for example, argue that realized strategy can best be defined and observed by looking at resource deployment over time. Snow and Hambrick (1980) identify four approaches to measuring organizational strategy: 1.) investigator inference; 2.) self-typing; 3.) external assessment; and 4.) objective indicators. When data are available for 5 years or more, they suggest that objective indicators allow for differentiation between strategic changes and adjustments.

All measures for this research were taken from Call Reports (balance sheets) and Reports of Income (income statements). Call Reports and Reports of Incomes are filed with the FDIC by all U.S. banks bi-annually.

Guarino (1991) cites six desirable properties of this database for strategy research. First, all FDIC insured banks are required by law to submit annual Call Reports and bi-annual Reports of Income. Second, banks have a strong incentive to report data - it is legally required. Third, the data are audited cross sectionally and longitudinally. No data are suppressed and the reported figures should be accurate. Fourth, the data can be broken down by relevant market such as firm size and geographic market. Fifth, the data can be observed on a semiannual or annual basis. Sixth, the reporting time period is approximately contemporaneous. Operating results are usually available within one month after the period for which the data were reported.
DATA ANALYSIS

The study of two paradigms, which are based on contrasting organizational worldviews, poses a particularly difficult problem when the task of data analysis is presented. However, it is one that social scientists struggle with often because society and populations of institutions persist despite the mortality of the individual members or organizations (Ryder, 1985). The use of cohort analysis is one way of approaching both macro and micro issues simultaneously. According to Fienberg and Mason (1985: 51), "...the conceptual attractiveness of cohorts as analytical differentia has been that they refer to sets of individuals with shared experiences."

Cohort analysis is often used to study generations of individuals and their reactions to environmental stimuli. Generations are born at about the same time period and age together, experiencing the environment into which they were born together and differently from all the other cohorts which have existed or will exist.

The analogy can made to cohorts of organizations. When a major changes occurs in the environment, the group of organizations which exist at that time experience the disruption together. Any organizations entering during that change or after the change has occurred will experience it differently from those which existed prior to the change.

A cohort may be defined as "the aggregate of individuals (within some population definition) who experienced the same event within the same
time interval" (Ryder, 1985: 12). For purposes of this research, the population definition will be U.S. urban banks which made financial reports to the FDIC in 1978 and the event of interest is the deregulation which they each experienced during the early 1980's.

The particular cohort model that will be employed is described in Fienberg and Mason (1985: 61-62) and is cross sectional in form. The research design will allow for the study of one cohort (independent and single BHC commercial banks which reported to the FDIC in 1978) with repeated cross sectional surveys. The time periods to be examined are chosen based on the timing of financial services deregulation. The 1978 base period will allow for the establishment of each organization's pre-deregulation strategy. Two time periods subsequent to deregulation will be examined and compared to the base strategy for each firm. The first data point will be 1983. This year has been chosen because both of the focal pieces of deregulation legislation will have occurred and any organizations making immediate changes due to deregulation can be identified. The population of banks will also be examined in 1987. During 1988 the number of problem banks began to decline signalling the beginning of an upward trend in the stability of the industry (Taylor, 1990). In addition, federal legislation did less than nothing until the Competitive Banking Act of 1987 which began the next period of regulatory change to impact the industry. Thus, the period from 1978 through 1987 best captures the direct impact of the DIDMCA and the Garn St. Germain Act.
Strategy will be measured in 1978 and 1983. Strategic change for that period will be measured by comparing the 1978 strategy to the 1983 strategy. Strategy will then be measured in 1987 and compared to the 1978 and 1983 strategy measures. The result will be three measures of strategic change: One measuring change from 1978 through 1983, one measuring change from 1983 through 1987 and an overall measure from 1978 through 1987. Aggregate data for the cohort will also be examined in an effort to study the population changes which occurred during the time period under review. Thus, both micro and macro changes can be observed.

In order to examine the relationship between organizational age and organizational size on strategic change, Pearson product moment correlations, or simply the Pearson r, will be utilized. Correlation coefficients are indices which describe the extent to which two sets of data are related. A correlation can take on values between +1.0 and -1.0 inclusive. The plus or minus sign preceding the coefficient indicates the direction of the relationship and the absolute value represents the magnitude of the relationship. The formula, created by the English statistician, Karl Pearson, for the correlation coefficient between two variables (x and y) is as follows (Hinkle, Wiersma, and Jurs, 1979):

\[ r_{xy} = \frac{\sum z_x z_y}{N}. \]
The strategy variable will be decomposed first and the relationship between each of the independent variables, organizational age and organizational size, and each of the strategy variables, LPD and RISK, will be examined separately. The two strategy measures will then be examined simultaneously. Banks will be grouped in two change subsets, those which changed both LPD and RISK more than the average and those changing both LPD and RISK less than the average. The organizational age and organizational size of each of these two groups will then be inspected. These two analyses taken together will allow for a richer picture of the relationships between each of the variables under consideration.

Student's t-tests will be used to determine the difference between strategic change groups and exiting and surviving firms with respect to the mean organizational age, organizational size, and strategy variable measures.

HYPOTHESES

ORGANIZATIONAL AGE

ABSOLUTE INERTIA

The propositions to be explored were outlined in Chapter 2. The first proposition examines the relationship between organizational age and
strategic change. Using correlations and t-tests, the direction and magnitude of the relationship between organizational age and strategic change will be explored for the three time periods. The first set of null hypotheses can be stated as follows:

H1a: The amount of change in RISK is not related to the age of the bank (r=0).

H1b: The amount of change in LPD is not related to the age of the bank (r=0).

H1c: The amount of change in both RISK and LPD is not related to the age of the bank (r=0).

This research assumes that a change in RISK and/or LPD constitutes a strategic change. In order to gain a richer picture of the relationship between strategic change based on measures of RISK and LPD and the age of banks, the strategy measures are examined separately and then jointly. A failure to reject H1a indicates that the a bank's age is not related to changes in the strategy measure, RISK, following deregulation. If the data fail to reject the second null hypothesis a similar statement can be made about the correlation between bank age and LPD. A failure to reject H1c suggests that there is no association between the changing of both variables and bank age.

If the correlations are negative and significant, organizational age will appear to have an inverse relationship with changes in RISK and/or LPD. That is, the older the bank the less likely it will change its strategy which in turn lends support to the organizational ecology perspective. If the correlations are positive and significant, the
research will contradict the assumptions of Hannan and Freeman regarding the relationship between organizational age and changes in strategy.

**Relative Inertia**

In order to examine relative inertia, more than one change period must be identified during the post deregulation period. Old and young organizations can then be compared to determine if there was any significant difference between the timing of changes in older and younger firms. Fisher's transformation can be used to calculate $z$-scores and compare the correlations between organizational age and changes in RISK and LPD. The second hypothesis can be stated as follows:

$H_2$: The correlations of organizational age with changes in RISK and LPD in the first period (1978-1983) are the same as the correlations of organizational age with RISK and LPD in the second period (1983-1987) ($r_1 = r_2$).

Failure to reject the second hypothesis would lend support to the argument that age is not related to the timing of changes in RISK and LPD. However, if the null hypothesis is rejected and older firms change strategy before young firms, the data contradict the theory that relative inertia is a characteristic of older organizations. If the correlations are not equal and young firms change in earlier time periods than older firms, support can be given to the arguments of Hannan and Freeman (1984)
regarding the relationship between organizational age and relative inertia.

**Organizational Size**

**Absolute Inertia**

The third proposition examines the relationship between organizational size and strategic change, as defined by this research. Using correlations and t-tests, the direction and magnitude of the relationship between organizational size and strategic change can be explored for the two time periods, 1978-1983, 1983-1987, and the overall period, 1978-1987. The third null hypothesis can be stated as follows:

H3a: The amount of change in RISK is not related to the size of the bank (r=0).

H3b: The amount of change in LPD is not related to the size of the bank (r=0).

H3c: The amount of change in RISK and LPD is not related to the size of the bank (r=0).

This research assumes that a change in RISK and/or LPD constitutes a strategic change. In order to gain a richer picture of the relationship between strategic change based on measures of RISK and LPD and the size of banks, the strategy measures are examined separately and then jointly. A failure to reject H3a indicates that the a bank's size is not related to
changes in the strategy measure, RISK, following deregulation. If the data fail to reject the second null hypothesis a similar statement can be made about the correlation between bank size and LPD. A failure to reject H3c suggests that there is no association between the changing of both variables and bank size.

If the correlations are negative and significant, organizational size will appear to have an inverse relationship with changes in RISK and/or LPD. That is, the larger the bank the less likely it will change its strategy which in turn lends support to the organizational ecology perspective. If the correlations are positive and significant, the research will contradict the assumptions of Hannan and Freeman regarding the relationship between organizational size and changes in strategy.

**Relative Inertia**

In order to examine relative inertia, more than one change period must be identified during the post deregulation period. Large and small organizations can then be compared to determine if there was any significant difference between the timing of changes in large and small firms. Fisher's transformation can be used to calculate z-scores and compare the correlations between organizational size and changes in RISK and LPD. The fourth hypotheses can be stated as follows:
H4: The correlations of organizational size with changes in RISK and LPD in the first period (1978-1983) are the same as the correlations of organizational size with RISK and LPD in the second period (1983-1987) ($r_1 = r_2$).

If the null hypothesis cannot be rejected, the data fail to find support of an association between organizational size and relative inertia. If the null hypothesis is rejected and larger firms change strategy before small firms, the data would lend support to the theory that relative inertia is a characteristic of smaller organizations. However, if the correlations are not equal and small firms change more in the first period than large firms, support would be given to the theories of Hannan and Freeman (1984) that small organizations can change strategy more quickly than larger organizations.

**Organizational Survival**

Several propositions concerning organizational survival were proposed in Chapter 2. The discussions surrounding these propositions argued that organizational ecologists believe that an attempt to change strategy will lead to an increased likelihood of failure (Hannan and Freeman, 1984). On the other hand, strategic choice theorists argue that organizations must adapt to the environment, and that change is often necessary when the environment changes (Child, 1972; Miles and Snow, 1978). Student's t-tests are used to examine the difference between changes in RISK and LPD of firms that survived and firms that exited the
population. The average change in RISK and LPD between 1978 and 1983 are compared for firms that were in existence in 1978 but had exited by 1983 to those that were still present in 1983. This process is repeated for the banks which were in existence in 1983 but had exited the population by 1987. The next hypothesis tests these opposing theories and can be stated as follows.

H5a: The amount of strategic change in RISK is not related to bank failures.

H5b: The amount of strategic change in LPD is not related to bank failures.

If H5a is not rejected, changes in RISK among surviving and exiting firms is not significantly different. Likewise, if H5b is not rejected, changes in LPD among the two groups is not significantly different. However, based on the assumptions of this research that RISK and/or LPD are appropriate measures of strategy, if exiting banks changed RISK and/or LPD less than surviving banks, one could argue that changing strategy increased the likelihood of survival, thus lending support to the adaptation perspective that organizations must adapt to changing environmental conditions. If the opposite occurs, that is exiting banks were more likely to change RISK and/or LPD, then one could make the counter argument that changing strategy led to organizational instability and increased the likelihood of exiting the population, thus providing evidence in support of the organizational ecologist perspective.

In chapter 2 the notion that strategic type might be related to failure was introduced. Lack of theoretical support regarding the
relationship between strategic type and failure precluded the use of a hypothesis, therefore the following research question will be examined.

Is strategic change related to the failure rate of banks following deregulation?

Banks which were present in 1983 but had exited by 1983 and those which were present in 1983 but had exited the population by 1987 are compared to banks which survived those periods. Average RISK and LPD are calculated for each group (exiting and surviving) and compared via t tests. If a significant difference in the strategies of those groups is found it is assumed that a relationship exists between strategic type and firm survival.

VALIDITY ISSUES

INTERNAL VALIDITY

The degree to which one can claim to have found some truth is an important issue in scientific research. While this research has been designed to capture the "true" situation surrounding the deregulation of the U.S. banking industry, there are several threats and confounding factors which may bias the results and inhibit internal validity. The primary threats to internal validity are listed in Table 3.
**TABLE 3: THREATS TO INTERNAL VALIDITY**

1. History  
2. Operationalization of the Strategy Construct  
3. Deregulation as an Event  
4. Interim Effects  
5. Absence of a Control Group  
6. Elimination of BHC's from sample

**HISTORY**

History can be defined as events, other than the treatment, which occur between the pre-test and post-test. This study has no control over the experiences of individual banks, thus one cannot rule out alternative causes of the findings. As shown in Figure 6, confounding factors such as environmental changes, external and internal intervening factors may explain much of the outcome of this research.

**STRATEGY MEASUREMENT**

One of the primary challenges of strategy research is identifying definitions and measures of strategy. In this research only two measures
ENVIRONMENTAL CHANGES:

TECHNOLOGY
COMMUNICATION
ECONOMY
INTERSTATE BANKING
OTHER REGULATORY CHANGES

EXTERNAL INTERVENING FACTORS:

DISINTERMEDIATION
LOCAL ENVIRONMENTS

INTERNAL INTERVENING FACTORS

MANAGEMENT
STAKEHOLDERS
RESOURCES

U.S. BANKS

FIGURE 6: CONFOUNDING FACTORS
of strategy are used. It is possible that the two chosen measures, while important in banking, do not fully capture the strategic orientation of each organization. One might argue that changes in the chosen measures represent adjustments to strategy rather than strategic change. These measures are also taken solely from objective, financial data and do not include any measure of intended strategy or perceptions of strategy.

**THE PROCESS OF DEREGULATION**

In this research, the deregulation of the U.S. banking industry was treated as a single pair of events: the passing of the DIDMCA (1980) and the Garn St. Germain Act (1982). This view omits the process of deregulation and actions taken in anticipation of the event.

**INTERIM EFFECTS**

The method chosen for this research uses three distinct time points to measure strategy, 1978, 1983, and 1987. Time and change, the subject of this research are both continuous, yet this research is cross sectional. Thus, there may be some interim effects not accounted for by this research which threaten it's internal validity.
ABSENCE OF CONTROL GROUPS

The absence of a control group may bias the results of this research in trying to isolate the effects of deregulation on the U.S. banking industry. Potential control groups may have been foreign financial services industries (Guarino, 1991). While most would have very different industry structures, banks in Canada or Japan may offer good comparison groups.

BANK HOLDING COMPANIES EXCLUDED

In order to isolate individual bank age, size and strategy, banks which were affiliated with multi-bank holding companies (BHC) were eliminated from the research. As shown in the findings of this research the number of BHC member banks has more than doubled during the ten year period under study. Thus sample selection bias may have affected the validity of this research.

EXTERNAL VALIDITY

External validity refers to the extent to which one can generalize beyond the particular setting and data of the research. This research is specific to one industry and does not necessarily represent the impact that deregulation may have in any other setting or the impact that other
environmental changes may have in other settings. The U.S. commercial banking industry presents an unique situation as do the controls and measures of this research. Thus, any generalization beyond the commercial banking industry must be made with caution.
CHAPTER IV: FINDINGS

INTRODUCTION

Data from FDIC Call Reports were used to examine the pre-deregulation and the post-deregulation banking industry. Three years of measures were inspected. Measures from 1978 were used as a baseline assessment of the population and individual firm strategy. This year was chosen because it was two years prior to the enactment of the Depository Institutions Deregulation and Monetary and Control Act (DIDMCA) and four years prior to the passing of the Garn St. Germain Act. It can be argued that by 1979 individual banks were already enacting changes in anticipation of deregulation. But, years prior to 1978 might not represent the industry as it was when it entered the deregulation period of the early 1980's. Thus, 1978 is considered to be more representative of the pre-deregulation population and individual firm strategy than prior or later years.

Population data and individual firm strategy data were surveyed in 1983 and 1987 to determine the post-deregulation industry setting and population and individual firm strategy following deregulation. Immediate changes to the evolving regulatory environment were expected in 1983 and more settled strategies were expected by 1987. The years of deregulation (1980-1982) were eliminated from the sample because it was expected that
the industry was in intense turmoil as companies adjusted to and learned about the changes in regulation. The years following 1987 were eliminated because it is likely that changes occurring after that time period were only in part related to the deregulation of the early 1980's. By 1987, the federal government had taken additional action with the passing of the Competitive Equality Act. Moreover, by 1988 the number of problem banks had begun to decline, signalling a bottoming out of the deterioration of the industry (Taylor, 1990).

In this chapter, population measures will be reported for all FDIC insured entities for the years 1978, 1983, and 1987. The cohort of banks under consideration in this research include all banks reporting to the FDIC in 1978. The cohort was divided into four groups based on age and size and each variable was examined for four groups. Large banks and small banks included those whose assets were in the top and bottom one-third, respectively, of the 1978 cohort. Old and young banks were those whose age in 1978 was in the top and bottom one-third, respectively, of the 1978 cohort. Age was based on the date the bank was chartered. Banks exiting the population were examined and compared to surviving banks. A description of the 1978 cohort and the four subgroups is presented in this chapter. The sample size (n), average age and size, the number of new banks and exiting banks, the number of banks owned by holding companies and the average number of domestic branches per bank, and the average strategy variables are reported for 1978, 1983, and 1987.

In order to examine the five hypotheses and one research question encompassed in this research, correlations of the variables of interest
have been calculated. The strategy variable was decomposed and the relationship between each of the measures of strategy used, i.e., LPD and RISK, have been correlated independently with organizational age and organizational size. Then the banks under study were grouped based on magnitude of change in both strategy variables. Banks which changed both LPD and RISK more then the average were included in one subset and banks which changed both LPD and RISK less then the average were grouped into another subset. The age and size of banks in each subgroup were considered. Descriptions and tables of summarized findings are presented below.

INDUSTRY OVERVIEW

INDUSTRY DESCRIPTION

The summarized results of the sample of banks in 1978, 1983 and 1987 are reported in Table 4. The sample for 1978 consisted of the number of banks reported to the FDIC that year.

The industry overview was not limited to the 1978 cohort. A total of 14,592 banks was sampled in the pre-deregulation period. In 1983 the sample size increased to 15,005 and then decreased to 14,642 in 1987. The average age changed very little over the ten year period. In 1978 the average age since date of charter for the sampled banks was 53 years. Average age did not change from 1978 to 1983 and increased only one year.
by 1987. Average assets more than doubled from $108 billion to $252 billion over the ten year period.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978</th>
<th>1983</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>14,592</td>
<td>15,005</td>
<td>14,642</td>
</tr>
<tr>
<td>AVERAGE AGE (in years)</td>
<td>53</td>
<td>53</td>
<td>54</td>
</tr>
<tr>
<td>AVERAGE ASSETS($000)</td>
<td>108,289</td>
<td>172,378</td>
<td>252,098</td>
</tr>
<tr>
<td>NEW FIRMS&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1156</td>
<td>1539</td>
<td>1264</td>
</tr>
<tr>
<td>EXITING FIRMS&lt;sup&gt;b&lt;/sup&gt;</td>
<td>--</td>
<td>1413</td>
<td>2102</td>
</tr>
<tr>
<td>NUMBER OF BANKS IN HOLDING COMPANIES</td>
<td>4093</td>
<td>7839</td>
<td>9676</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF DOMESTIC BRANCHES/BANK</td>
<td>2.3</td>
<td>2.6</td>
<td>3.3</td>
</tr>
<tr>
<td>AVERAGE RISK STRATEGY&lt;sup&gt;c&lt;/sup&gt;</td>
<td>57.4</td>
<td>51.6</td>
<td>53.4</td>
</tr>
<tr>
<td>AVERAGE LPD STRATEGY&lt;sup&gt;d&lt;/sup&gt;</td>
<td>38.4</td>
<td>38.0</td>
<td>39.9</td>
</tr>
</tbody>
</table>

<sup>a</sup>Number represents firms chartered within the previous five years for 1978 and 1983 and the previous four years for 1987.

<sup>b</sup>Number represents firms exiting during the prior period.

<sup>c</sup>Number represents total loans/total assets: the higher the number the riskier the strategy.

<sup>d</sup>Number is a measure of diversification in loans and can range from 20 (equally diversified) to 100 (total focus).

The number of new banks were also counted for each year. New banks in 1978 and 1983 were defined as any bank less than five years old. New
banks in 1987 were defined as those less than four years old. The four year time period in 1987 was used so that new banks in 1983 would not be counted twice. The number of new banks entering the population stayed about the same for the three years. There were 1156 new banks in 1978, 1539 in 1983, and 1264 in 1987.

Exiting banks were identified in 1983 and 1987. Because banks are required by law to report to the FDIC biannually, exiting banks can be isolated based on whether or not they made reports during any given year. Such a count necessarily excludes mergers, acquisitions and any other changes in structure. Banks reporting to the FDIC in 1987, and not reporting in 1983 were counted as exiting in the 1987-83 time period. Banks reporting to the FDIC in 1983, and not reporting in 1987 were considered to have exited the population during the second time period and were thus included in the count of exiting banks in 1987. The number of exiting banks increased from 1413 in 1983 to 2102 in 1987.

Changes in legislation have allowed banks to increasingly change structural elements. Ownership by holding companies and branch banking are two of the structural changes that now occur in the industry. An inspection of the population over the ten year period shows an increase in the number of banks owned by holding companies and in branch banking. Holding company banks more than doubled over the ten year period from 4093 to 9676. The greatest increase over the period came from 1978 to 1983 when the number increased from 4093 to 7839. The average number of branches per bank increased from 2.3 to 3.3 from 1978 to 1987.

CHAPTER IV: FINDINGS
Strategy is measured by two variables: RISK and LOAN PORTFOLIO DIVERSIFICATION (LPD). RISK is measured as total loans/total assets where the higher the ratio the riskier the strategy. LPD is measured in terms of the level of concentration or diversification of the loan mix offered by any one bank and can range from 20 (equally diversified) to 100 (total concentration). These variables represent critical strategic decision areas for bank managers and have been used by researchers to determine strategy in the banking industry (Guarino, 1991; Reger, Duhaime, Stimpert, 1992; Rediker and Middleton, 1992). Average RISK decreased substantially over the first five year period from 57.4 in 1978 to 51.6 in 1983 and then increased slightly to 53.4 in 1987. Average LPD remained relatively constant over the ten year period decreasing from 38.4 in 1978 to 38.0 in 1983 and then increasing to 39.9 in 1987.

The mean changes in strategy variables for the entire 1978 cohort of banks is reported in Table 5. RISK decreased by more than 6 points from 1978 to 1983, but then increased by approximately 1.2 from 1983 to 1987. LPD decreased slightly (-0.424) during the first period, indicating a more diversified strategy of loans, but then increased by 1.412 during the second period. The overall change in variables for the ten year period is

1 For a more complete explanation of the two strategy measures see Chapter III.
TABLE 5: MEAN CHANGES IN STRATEGY VARIABLES FOR THE 1978 COHORT OF FIRMS

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978-83</th>
<th>1983-87</th>
<th>1978-87</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>11,367</td>
<td>11,096</td>
<td>10,015</td>
</tr>
<tr>
<td>RISK(^a)</td>
<td>-6.387</td>
<td>1.188</td>
<td>-6.148</td>
</tr>
<tr>
<td>LPD(^b)</td>
<td>-0.424</td>
<td>1.412</td>
<td>1.115</td>
</tr>
</tbody>
</table>

\(^a\)Number represents the change in total loans/total assets over the period.
\(^b\)Number represents the change in diversification in loans over the period.

A decrease in RISK of -6.148 and an increase in LPD of 1.115. These changes indicate movement toward a less risky, more focused loan strategy.

ORGANIZATIONAL AGE

DESCRIPTIVE FINDINGS

The 1978 cohort of banks is divided into groups based on their age in 1978. The oldest one-third of the 1978 cohort of banks represents the "older" cohort and the youngest one-third represents the "young" bank cohort. Tables 6 and 7 summarize the changes in those banks from 1978 to 1983 and 1987. There were more older banks than young banks remaining in
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978</th>
<th>1983</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>4221</td>
<td>4008</td>
<td>3658</td>
</tr>
<tr>
<td>% OF 1978 COHORT</td>
<td>37%</td>
<td>35%</td>
<td>32%</td>
</tr>
<tr>
<td>AVERAGE AGE (in years)</td>
<td>86</td>
<td>91</td>
<td>95</td>
</tr>
<tr>
<td>AVERAGE ASSETS ($000)</td>
<td>141,972</td>
<td>213,733</td>
<td>271,700</td>
</tr>
<tr>
<td>EXITING FIRMS b</td>
<td>--</td>
<td>213</td>
<td>350</td>
</tr>
<tr>
<td>NUMBER OF BANKS IN HOLDING COMPANIES</td>
<td>701</td>
<td>1880</td>
<td>2489</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF DOMESTIC BRANCHES/BANK</td>
<td>3.1</td>
<td>3.7</td>
<td>4.2</td>
</tr>
<tr>
<td>AVERAGE RISK STRATEGY c</td>
<td>57.1</td>
<td>49.6</td>
<td>49.9</td>
</tr>
<tr>
<td>AVERAGE LPD STRATEGY d</td>
<td>37.6</td>
<td>37.1</td>
<td>38.4</td>
</tr>
</tbody>
</table>

Note: Older banks are defined as the oldest one third of 1978 banks measured in years since charter.

"Number represents firms chartered within the previous five years for 1978 and 1983 and the previous 4 years for 1987.

"Number represents firms exiting during the prior period.

"Number represents total loans/total assets: the higher the number the riskier the strategy.

"Number is a measure of diversification in loans and can range from 20 (equally diversified) to 100 (total focus).
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978</th>
<th>1983</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>4028</td>
<td>3595</td>
<td>3090</td>
</tr>
<tr>
<td>% OF 1978 COHORT</td>
<td>35%</td>
<td>32%</td>
<td>27%</td>
</tr>
<tr>
<td>AVERAGE AGE (in years)</td>
<td>15.5</td>
<td>20.9</td>
<td>25.2</td>
</tr>
<tr>
<td>AVERAGE ASSETS($000)</td>
<td>50,557</td>
<td>96,521</td>
<td>165,156</td>
</tr>
<tr>
<td>NEW FIRMS</td>
<td>899</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>--</td>
<td>433</td>
<td>511</td>
</tr>
<tr>
<td>NUMBER OF BANKS IN HOLDING COMPANIES</td>
<td>480</td>
<td>1791</td>
<td>2192</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF DOMESTIC BRANCHES/BANK</td>
<td>1.1</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>AVERAGE RISK STRATEGY</td>
<td>57.9</td>
<td>53.1</td>
<td>54.0</td>
</tr>
<tr>
<td>AVERAGE LPD STRATEGY</td>
<td>40.1</td>
<td>38.6</td>
<td>40.7</td>
</tr>
</tbody>
</table>

*Young banks are defined as the youngest one third of 1978 banks measured in years since charter.  
*Number represents firms chartered within the previous five years in 1978 and 1983 and previous four years in 1987.  
*Number represents firms exiting during the prior period.  
*Number represents total loans/total assets: the higher the number the riskier the strategy.  
*Number is a measure of diversification in loans and can range from 20 (equally diversified) to 100 (total focus).
1987. The sample of older banks decreased from 4221 in 1978 to 4008 in 1983 and 3658 in 1987. The sample of young banks decreased from 4028 in 1978 to 3595 in 1983 and 3090 in 1987.² The average age of the banks in each cohort increased by approximately 10 years with the average age of older banks being 86 years in 1978 and young banks being 15.5 years. Older banks had average assets of nearly $142 billion in 1978 and assets increased to more than $271 billion over the ten year period. Young banks had average assets of more than $50 billion in 1978 and these increased to more than $165 billion in 1987.

In 1978 there were 899 banks which met the definition for young banks. During both periods (1978-1983 and 1983-1987) more young banks than older banks exited the population. There were 433 (11%) young banks and 213 (5%) older banks that exited during the first period. In the second period, 511 (14%) young banks and 350 (9%) older banks exited.

Both age groups increased in number of banks affiliated with holding companies. In 1978, 17% or 701 older banks were single bank holding companies. That number increased to 47% (1880) in 1983 and 68% (2489) in 1987. The number of young bank holding companies increased from 12% (480) in 1978 to 50% (1791) in 1983 and 71% (2192) in 1987.

The average number of branches per bank was higher for older banks. The number increased from 3.1 to 4.2 for older banks and from 1.1 to 1.8 for young banks over the ten year period.

²It should be noted that the sample sizes (n) for the older and younger cohorts in 1978 were not equal. Despite that a larger percentage of older firms survived than smaller firms.
Older banks in 1978 had slightly lower levels of RISK and more diversified loan portfolios. Average RISK for older banks in 1978 was 57.1 and the average LPD was 37.6 compared to an average RISK of 57.9 and an average LPD of 40.1 for young banks. Older banks decreased RISK substantially from 1978 to 1983 from 57.1 to 49.6, but then increased RISK slightly to 59.9 in 1987. Young banks illustrated a similar pattern decreasing RISK during the first period from 57.9 to 53.1, but increasing RISK to 54.0 in 1987.

Both older and younger banks became less diversified from 1978 to 1987, however young banks exhibited substantially higher LPD ratios throughout the ten year period. Older banks' LPD increased from 37.6 to 38.4 indicating a more concentrated loan strategy. The average LPD ratio increased slightly from 40.1 to 40.7 over the ten year period. Both older and young banks exhibited a similar pattern from 1978 to 1987 becoming more diversified from 1978 to 1983 and then less diversified from 1983 to 1987.

ORGANIZATIONAL AGE AND STRATEGIC CHANGE

ABSOLUTE INERTIA (H1)

H1a: The amount of change in RISK is not related to the age of the bank (r=0).

H1b: The amount of change in LPD is not related to the age of the bank (r=0).
The correlations between individual bank age and RISK and LPD for the three periods are illustrated in Table 8. There was a small, but significant negative correlation between organizational age and a change in RISK for both periods and the overall period. As age increased, change in RISK ratios decreased. Consequently, H1a is rejected for all time periods.

**TABLE 8: PEARSON CORRELATION COEFFICIENTS FOR CHANGES IN STRATEGY VARIABLES AND ORGANIZATIONAL AGE FOR THE 1978 COHORT FIRMS**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978-83</th>
<th>1983-87</th>
<th>1978-87</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RISK</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORRELATIONS</td>
<td>-0.09506</td>
<td>-0.09961</td>
<td>-0.04326</td>
</tr>
<tr>
<td>SIGNIFICANCE LEVEL</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0001</td>
</tr>
<tr>
<td><strong>LOAN PORTFOLIO DIVERSIFICATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORRELATIONS</td>
<td>0.00227</td>
<td>-0.03303</td>
<td>-0.04190</td>
</tr>
<tr>
<td>SIGNIFICANCE LEVEL</td>
<td>0.8098</td>
<td>0.0010</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

The associations between LPD and organizational age are not so consistent. The correlations between organizational age and LPD was negative and significant for changes from 1983 to 1987 and for the overall period, 1978-1987, and positive, but not significant, for changes from...
1978 to 1983. Accordingly, H2b is rejected for the second time period and the overall period, but not for the first time period.

Hlc: The amount of change in RISK and LPD is not related to the age of the bank (r=0).

When the changes in both strategy variables LPD and RISK were examined simultaneously, the null hypothesis is rejected. Two groups of banks were identified based on changes in both LPD and RISK. The first group included those banks which changed both variables more than the average change and the second group consisted of those banks which changed both LPD and RISK less than the average. The first group, the AGGRESSIVES, included those banks where the absolute value change for both variables was more than 1/2 standard deviation from the mean change. The second group, the CONSERVATIVES, included those where the absolute value change for both variables was less than 1/2 standard deviation from the mean change. As illustrated in Table 9, a student's t-test comparing the mean organizational age of the two groups for the two periods shows that AGGRESSIVES were younger in the first period (1978-1983) and older in the second period (1983-1987). The AGGRESSIVES in the first period were significantly younger with an average age of 48.5 years while the CONSERVATIVES had an average age of 58.1 years. In the second period (1983-1987), the AGGRESSIVES were significantly older, 53.3 years compared to 50.4 years for CONSERVATIVES.
## Table 9: Student's T Test for Differences Between the Mean Organizational Age* of Firms Changing Both Strategy Variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEANS</th>
<th>T-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERIOD I (1978-1983)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conservatives†</td>
<td>897</td>
<td>58.1</td>
<td>4.59*</td>
</tr>
<tr>
<td>Aggressives**</td>
<td>310</td>
<td>48.5</td>
<td></td>
</tr>
<tr>
<td><strong>PERIOD II (1983-1987)</strong></td>
<td></td>
<td></td>
<td>-2.0975**</td>
</tr>
<tr>
<td>2Conservatives†</td>
<td>3744</td>
<td>50.4</td>
<td></td>
</tr>
<tr>
<td>Aggressives**</td>
<td>2631</td>
<td>53.3</td>
<td></td>
</tr>
</tbody>
</table>

*Organizational age measured in years from data of charter.
†Represents firms which changed less than 1/2 standard deviation less than the mean change for both variables.
**Represents firms which changed more than 1/2 standard deviation more than the mean change for both variables.
* p<.001  ‡ p<.01  ‡‡ non-significant findings.

### Relative Inertia (H2)

H2: The correlations of organizational age with changes in RISK and LPD in the first period (1978-1983) are the same as the correlations of organizational age with RISK and LPD in the second period (1983-1987) (r₁=r₂).

In order to determine whether organizational age made a difference in how quickly banks could respond to deregulation, the correlations between organizational age and changes in RISK and LPD were compared for
the two time periods 1978-1983 and 1983-1987. Using Fisher's transformation to calculate z-scores, the null hypothesis is rejected for both variables (Table 10). Older banks changed later than younger banks in both time periods.

**TABLE 10: COMPARISON OF THE CHANGE CORRELATIONS BETWEEN TIME PERIODS AND ORGANIZATIONAL AGE (USING FISHER'S TRANSFORMATION)**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Z SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGANIZATIONAL AGE*</td>
<td>-3.793</td>
</tr>
<tr>
<td>2RISK</td>
<td></td>
</tr>
<tr>
<td>LOAN PORTFOLIO DIVERSIFICATION</td>
<td>3.214</td>
</tr>
</tbody>
</table>

*Organizational age measured in years from date of charter.

**ORGANIZATIONAL SIZE**

**Descriptive Findings**

The 1978 cohort of banks was divided into two groups based on assets. The largest one-third of the 1978 cohort of banks represents the "large" bank cohort and the smallest one-third represents the "small" bank cohort. Tables 11 and 12 summarize the changes in those banks from 1978
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978</th>
<th>1983</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>4100</td>
<td>3762</td>
<td>3354</td>
</tr>
<tr>
<td>% of 1978 COHORT</td>
<td>36%</td>
<td>33%</td>
<td>30%</td>
</tr>
<tr>
<td>AVERAGE AGE (in years)</td>
<td>58</td>
<td>63</td>
<td>68</td>
</tr>
<tr>
<td>AVERAGE ASSETS($000)</td>
<td>229,573</td>
<td>370,779</td>
<td>525,181</td>
</tr>
<tr>
<td>NEW FIRMS&lt;sup&gt;a&lt;/sup&gt;</td>
<td>141</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXITING FIRMS&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>338</td>
<td>412</td>
</tr>
<tr>
<td>NUMBER OF BANKS IN HOLDING COMPANIES</td>
<td>772</td>
<td>2141</td>
<td>2702</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF DOMESTIC BRANCHES/BANK</td>
<td>5.2</td>
<td>6.3</td>
<td>7.3</td>
</tr>
<tr>
<td>AVERAGE RISK STRATEGY&lt;sup&gt;c&lt;/sup&gt;</td>
<td>57.7</td>
<td>51.2</td>
<td>53.9</td>
</tr>
<tr>
<td>AVERAGE LPD STRATEGY&lt;sup&gt;d&lt;/sup&gt;</td>
<td>38.1</td>
<td>37.3</td>
<td>39.3</td>
</tr>
</tbody>
</table>

<sup>a</sup>Large banks are defined as the largest one third of 1978 banks measured in assets.
<sup>b</sup>Number represents firms chartered within the previous five years in 1978 and 1983 and previous four years in 1987.
<sup>c</sup>Number represents firms exiting during the prior period.
<sup>d</sup>Number represents total loans/total assets: the higher the number the riskier the strategy.
<sup>e</sup>Number is a measure of diversification in loans and can range from 20 (equally diversified) to 100 (total focus).
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978</th>
<th>1983</th>
<th>1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>4100</td>
<td>3828</td>
<td>3395</td>
</tr>
<tr>
<td>% OF 1978 COHORT</td>
<td>36%</td>
<td>34%</td>
<td>30%</td>
</tr>
<tr>
<td>AVERAGE AGE</td>
<td>51</td>
<td>57</td>
<td>61</td>
</tr>
<tr>
<td>AVERAGE ASSETS ($000)</td>
<td>7,450</td>
<td>13,754</td>
<td>20,428</td>
</tr>
<tr>
<td>NEW FIRMS&lt;sup&gt;a&lt;/sup&gt;</td>
<td>543</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXITING FIRMS&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>272</td>
<td>434</td>
</tr>
<tr>
<td>NUMBER OF FIRMS IN HOLDING COMPANIES</td>
<td>487</td>
<td>1516</td>
<td>1915</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF DOMESTIC BRANCHES/BANK</td>
<td>.13</td>
<td>.25</td>
<td>.37</td>
</tr>
<tr>
<td>AVERAGE RISK STRATEGY&lt;sup&gt;c&lt;/sup&gt;</td>
<td>55.2</td>
<td>50.3</td>
<td>48.2</td>
</tr>
<tr>
<td>AVERAGE LPD STRATEGY&lt;sup&gt;d&lt;/sup&gt;</td>
<td>39.6</td>
<td>38.5</td>
<td>39.0</td>
</tr>
</tbody>
</table>

<sup>a</sup>Small banks are defined as the smallest one third of 1978 banks measured in assets.
<sup>b</sup>Number represents firms chartered within the previous five years in 1978 and 1983 and previous four years in 1987.
<sup>c</sup>Number represents firms exiting during the prior period.
<sup>d</sup>Number represents total loans/total assets: the higher the number the riskier the strategy.
<sup>e</sup>Number is a measure of diversification in loans and can range from 20 (equally diversified) to 100 (total focus).

To 1983 and from 1983 to 1987. There were slightly more small banks than large banks remaining in 1987. The sample of large banks decreased from 4100 in 1978 to 3762 in 1983 and 3354 in 1987 while the sample of small banks decreased from 4100 in 1978 to 3828 in 1983 and 3395 in 1987. The
average age of the banks in each cohort increased by an expected 10 years with large banks being 7 years older than small banks. Large banks had average assets of more than $229 billion in 1978 and these increased to more than $525 billion over the ten year period. Small banks had average assets of more than $7 billion in 1978 and these increased to more than $20 billion in 1987. In 1978 only 3% (141) of the large banks met the definition for a new bank and 13% (543) of the small banks were classified as new. In the 1978-1983 period 8% of the large banks exited the population and 7% of the small banks exited (338 versus 272). Approximately the same number (11%) of large and small banks exited in the 1983-1987 period (412 and 434, respectively).

More of the large banks were holding company banks. In 1978, 772 (18.9%) large banks were single company holding companies. That number increased to 2141 (57%) in 1983 and 2702 (81%) in 1987. The number of small bank holding companies increased from 487 (12%) in 1978 to 1516 (40%) in 1983 and 1915 (56%) in 1987.

The average number of branches per bank was higher for large banks as expected. The number increased from 5.2 to 7.3 for large banks and from .13 to .37 for small banks over the ten year period.

Large banks in 1978 had higher levels of RISK and had more diversified loan portfolios. Average RISK for large banks in 1978 was 57.7 and the average LFD was 38.1 compared to an average RISK of 55.2 and an average LFD of 39.6 for small banks. Large banks decreased RISK from 1978 to 1983 from 57.7 to 51.2, but then increased RISK to 53.9 in 1987.
Small banks, on the other hand, continued over the entire period to decrease RISK with an average RISK of 50.3 in 1983 and 48.2 in 1987.

While large banks became less diversified from 1978 to 1987, small banks increased their diversification of loans. Large banks' LPD increased from 38.1 to 39.3, indicating a more concentrated loan strategy. Small banks' LPD declined slightly from 39.6 to 39.0 over the ten year period. Both large and small banks exhibited a similar pattern from 1978 to 1987 becoming more diversified from 1978 to 1983 and then less diversified from 1983 to 1987.

**Organizational Size and Strategic Change**

**Absolute Inertia (H3)**

H3a: The amount of change in RISK is not related to the size of the bank (r=0).

H3b: The amount of change in LPD is not related to the size of the bank (r=0).

Findings relating the amount of change in RISK and LPD were mixed. When pearson correlation coefficients were calculated for the strategy variables, RISK and LPD, for the three time periods, 1978-1983, 1983-1987, and 1978-1987 (Table 13) only two of the six associations were significant. There were small, but significant positive correlations between organizational size and a change in RISK during the two change


Table 13: Pearson Correlation Coefficients for Changes in Strategy Variables and Organizational Size for the 1978 Cohort Firms

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>1978-83</th>
<th>1983-87</th>
<th>1978-87</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk</td>
<td>0.03611</td>
<td>0.04476</td>
<td>0.01678</td>
</tr>
<tr>
<td>Correlations</td>
<td>0.0001</td>
<td>0.0001</td>
<td>0.0941</td>
</tr>
<tr>
<td>Significance Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan Portfolio Diversification</td>
<td>0.00183</td>
<td>-0.01259</td>
<td>-0.01603</td>
</tr>
<tr>
<td>Correlations</td>
<td>0.8459</td>
<td>0.2079</td>
<td>0.1088</td>
</tr>
<tr>
<td>Significance Level</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

periods, 1978-1983 and 1983-1987. As size increased, change in RISK ratios increased. The relationship between size and change in RISK for the overall period (1978-1987) was also positive, but not significant. Thus, the null can be rejected for the first two time periods only and not for the overall period.

The data fail to reject H3b for any time period. The correlations between LPD and organizational size were not significant and changed directions. The correlation was positive during the first time frame (1978-1983) and negative for the 1983-1987 time period, and the overall period, 1978-1987.

H3c: The amount of change in RISK and LPD is not related to the size of the bank (r=0).
Based on the data and analysis of this research H3c can not be rejected. Two groups of banks were identified based on changes in both LPD and RISK. The first group included those banks which changed both variables more than the average change and the second group consisted of those banks which changed both LPD and RISK less than the average. The first group, the AGGRESSIVES, included those banks where the absolute value change for both variables was more than 1/2 standard deviation from the mean change. The second group, the CONSERVATIVES, included those where the absolute value change for both variables was less than 1/2 standard deviation from the mean change. Using student's t-tests to compare the two groups (Table 14), there were no significant differences between AGGRESSIVES and CONSERVATIVES with respect to organizational size. However, the mean organizational size of AGGRESSIVES and CONSERVATIVES for the three periods showed that AGGRESSIVES were smaller in both periods, but not significantly smaller.

**Relative Inertia (H4)**

H4: The correlations of organizational size with changes in RISK and LPD in the first period (1978-1983) are the same as the correlations of organizational size with RISK and LPD in the second period (1983-1987) ($r_1=r_2$).

In order to determine whether organizational size made a difference in how quickly banks responded to deregulation, the correlations between organizational size and changes in RISK and LPD were compared for the two
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEANS (§000)</th>
<th>T-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERIOD I (1978-1983)</strong></td>
<td></td>
<td></td>
<td>1.1313*ns</td>
</tr>
<tr>
<td>CONSERVATIVES*</td>
<td>900</td>
<td>182,570</td>
<td></td>
</tr>
<tr>
<td>AGGRESSIVES**</td>
<td>310</td>
<td>31,297</td>
<td></td>
</tr>
<tr>
<td><strong>PERIOD II (1983-1987)</strong></td>
<td></td>
<td></td>
<td>1.0839*ns</td>
</tr>
<tr>
<td>CONSERVATIVES*</td>
<td>3767</td>
<td>100,893</td>
<td></td>
</tr>
<tr>
<td>AGGRESSIVES**</td>
<td>631</td>
<td>30,408</td>
<td></td>
</tr>
</tbody>
</table>

*Organizational age measured in years from data of charter.
*Represents firms which changed less than 1/2 standard deviation less than the mean change for both variables.
**Represents firms which changed more than 1/2 standard deviation more than the mean change for both variables.
* p<.001, ** p<.05, ns non significant findings.

time periods 1978-1983 and 1983-1987. Using Fisher’s transformation to calculate z-scores, the data fail to reject the null hypothesis (Table 15). There was no significant difference between the timing of changes for large and small banks.
## TABLE 15: COMPARISON OF THE CHANGE CORRELATIONS BETWEEN TIME PERIODS AND ORGANIZATIONAL SIZE (USING FISHER'S TRANSFORMATION)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>χ² SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGANIZATIONAL SIZE*</td>
<td>1.415</td>
</tr>
<tr>
<td>RISK</td>
<td></td>
</tr>
<tr>
<td>LOAN PORTFOLIO DIVERSIFICATION</td>
<td>1.300</td>
</tr>
</tbody>
</table>

*Organizational size measured in assets (S000).

### ORGANIZATIONAL SURVIVAL

#### Exiting Banks

Banks which exited the population were examined for each period. Table 16 summarizes the measures for the variables of interest in those banks. The values reported for each period are based on measures taken during the previous period. Measures for banks exiting during the first period (1978-1983) were taken in 1978 and measures for banks exiting during the second period were taken in 1983. Eight hundred eleven exiting banks were measured during the first period and 1,771 exiting banks were measured during the second period. The average age of banks exiting the population from 1978-1983 was 42 years and the average age of banks exiting the population from 1983-1987 was 43 years. Exiting banks were
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>PERIOD I</th>
<th>PERIOD II</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE SIZE (n)</td>
<td>811</td>
<td>1771</td>
</tr>
<tr>
<td>AVERAGE AGE (in years)</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>AVERAGE ASSETS ($000)</td>
<td>57,657</td>
<td>86,761</td>
</tr>
<tr>
<td>NEW FIRMS&lt;sup&gt;a&lt;/sup&gt;</td>
<td>121</td>
<td>292</td>
</tr>
<tr>
<td>NUMBER OF BANKS IN HOLDING COMPANIES</td>
<td>70</td>
<td>838</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF DOMESTIC BRANCHES/BANK</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>AVERAGE RISK STRATEGY&lt;sup&gt;b&lt;/sup&gt;</td>
<td>58</td>
<td>54.8</td>
</tr>
<tr>
<td>AVERAGE LPD STRATEGY&lt;sup&gt;c&lt;/sup&gt;</td>
<td>40.3</td>
<td>39.8</td>
</tr>
</tbody>
</table>

<sup>a</sup>Exiting firms in any period include firms which were present in the first year of the period but not in last year of the period.

<sup>b</sup>Number represents firms chartered within the last five years.

<sup>c</sup>Number represents total loans/total assets: the higher the number the riskier the strategy.

<sup>d</sup>Number is a measure of diversification in loans and can range from 20 (equally diversified) to 100 (total focus).

About 10 years younger than the average population age. Average assets were more than $57 billion for those exiting during the first period and more than $86 billion for those exiting during the second period.

Four hundred thirteen (16%) of the 2582 exiting banks were classified as new banks. During the first period (1978-1983) 121 of the
811 banks were classified as new banks while 282 of the 1771 banks were classified as new banks during the second period (1983-1087).

Considerably more of the banks exiting during the second period were holding company banks. Only 8% (70) of the 811 banks which exited by 1983 were single company holding companies, nearly 50% (838) of the 1771 banks exiting between 1983 and 1987 were single bank holding companies. The average number of branches per bank was about the same for the two groups, 2.3 for those exiting from 1978-1983 and 2.4 for those exiting from 1983-1987.

Compared to the entire population (Table 4) exiting banks had higher levels of RISK and LPD. For those banks exiting from 1978-1983, the RISK measure was 58 in 1978 compared to 57.4 for the entire population in 1978. For those exiting from 1983-1987, the RISK measure was 54.8 in 1983 compared to a RISK measure of 51.6 for the entire population in 1983. Average LPD was 40.3 for banks exiting during the first period compared to 78.4 for the entire population and 39.8 for those banks exiting during the second period compared to a population LPD of 38.

**Survival and Strategic Change (H5)**

H5a: The amount of strategic change in RISK is not related to bank failure.

H5b: The amount of strategic change in RISK is not related to bank failure.
Among the banks studied, those which changed strategy were more likely to survive over the period under consideration. Student's t-tests comparing the mean change in RISK and LPD were calculated to determine whether there was a significant difference between the amount of strategic change for exiting and surviving banks. From the findings, H5a is rejected, however, H5b can not be rejected. For both RISK and LPD, exiting banks changed less than surviving banks. Although the differences were significant for RISK they were not for LPD. RISK decreased an average of -6.86 in surviving banks and -2.86 in exiting banks. LPD decreased in surviving banks by an average of -0.44 and in exiting banks by an average of -0.26 (Table 17).

**TABLE 17: STUDENT'S T TEST FOR DIFFERENCES BETWEEN THE AMOUNT OF STRATEGIC CHANGE BETWEEN EXITING AND SURVIVING FIRMS**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MEAN CHANGE</th>
<th>T-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISK SURVIVING FIRMS</td>
<td>-6.86</td>
<td>-11.711'</td>
</tr>
<tr>
<td>RISK EXITING FIRMS</td>
<td>-2.86</td>
<td></td>
</tr>
<tr>
<td>LOAN PORTFOLIO DIVERSIFICATION</td>
<td>-0.44</td>
<td>-0.858ns</td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>-0.26</td>
<td></td>
</tr>
</tbody>
</table>

CHAPTER IV: FINDINGS
SURVIVAL AND STRATEGIC TYPE

Will strategic type affect the failure rate of banks following deregulation?

This research poses the question of whether strategic type is related to organizational survival. The population of banks which existed during the ten year period under review were examined for differences in RISK and LPD. Among the sample of banks studied, it appears that strategic type was associated with organizational survival during the deregulation period. The strategies of exiting and surviving banks were significantly different. Table 18 shows the mean differences and the results of t-tests examining the significance of those differences. For both variables and in both periods, the results were significant at the .001 significance level.

Banks which exited the population had higher levels of RISK and less diversified loan strategies. The average RISK ratio for banks exiting during the first period (1978-1983) was 59.9 compared to 57.1 for those which survived that time period. The average LPD was 40.3 for exiting banks and 38.5 for surviving banks during the same period. Banks exiting the population between 1983 and 1987 had an average RISK of 55.5 and an LPD of 40.1. Surviving banks during that same period had an average RISK of 50.6 and an average LPD of 37.9.
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEANS</th>
<th>T-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERIOD I (1978-1983)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RISK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,368</td>
<td>57.1</td>
<td>-5.2312*</td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>811</td>
<td>59.5</td>
<td></td>
</tr>
<tr>
<td><strong>LOAN PORTFOLIO DIVERSIFICATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,369</td>
<td>38.5</td>
<td>-4.8071*</td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>811</td>
<td>40.3</td>
<td></td>
</tr>
<tr>
<td><strong>PERIOD II (1983-1987)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RISK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,098</td>
<td>50.6</td>
<td>-14.123*</td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>1771</td>
<td>55.5</td>
<td></td>
</tr>
<tr>
<td><strong>LOAN PORTFOLIO DIVERSIFICATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,099</td>
<td>37.9</td>
<td>-8.2041*</td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>1749</td>
<td>40.1</td>
<td></td>
</tr>
</tbody>
</table>

*Represents strategy measure in first year of each period.
**Approximately 1500 new firms entered the population by 1983.
* p<.001.
Survival and Organizational Age and Size

As shown in Table 19, surviving banks were significantly older during both time periods (1978-1983 and 1983-1987). The average age of banks which survived the first period was 55.1 compared to an average age of 44.3 for those that did not. Banks surviving the second period (1983-1987) were approximately 56 years old, compared to an average age for exiting banks of 39.9 years.

During the first period, surviving banks possessed assets averaging $8.7 billion compared to exiting banks with assets of $5 billion. This relationship reversed during the second period, however. Surviving banks were smaller in size ($12.77 billion) than exiting banks ($15.5 billion). There are at least two possible explanations for this occurrence. During the early years of deregulation, slack resources may have sustained the larger banks. However, as competitive strategy became more important smaller banks may have gained the advantage as slack resources dwindled in larger banks. A second explanation may be tied to the earlier findings regarding strategy.

SUMMARY

Ten hypotheses were tested and one research question was examined in this research. The first four hypotheses examined the relationship between organizational age and strategic change. H1a and H1c, which
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEANS</th>
<th>T-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERIOD I (1978-1983)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORGANIZATIONAL AGE</td>
<td>9.3295*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,337</td>
<td>55.1</td>
<td></td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>801</td>
<td>44.3</td>
<td></td>
</tr>
<tr>
<td>ORGANIZATIONAL SIZE</td>
<td>0.8254*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,369</td>
<td>86,956</td>
<td></td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>811</td>
<td>50,255</td>
<td></td>
</tr>
<tr>
<td><strong>PERIOD II (1983-1987)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORGANIZATIONAL AGE</td>
<td>18.677*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,078</td>
<td>56.2</td>
<td></td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>1,762</td>
<td>39.9</td>
<td></td>
</tr>
<tr>
<td>ORGANIZATIONAL SIZE</td>
<td>-0.676*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SURVIVING FIRMS</td>
<td>11,099</td>
<td>127,706</td>
<td></td>
</tr>
<tr>
<td>EXITING FIRMS</td>
<td>1,773</td>
<td>155,083</td>
<td></td>
</tr>
</tbody>
</table>

*Organizational age measured in years from data of charter.
Organizational size measured in assets ($000).
tested the association between bank age and changes in RISK and the relationship between both RISK and LPD simultaneously were rejected. Organizational age associated negatively with changes in strategy. However, H1b, the test of the correlation between changes in LPD and organizational age was rejected for the 1983-1987 time period and the overall period, but not for the first time period (1978-1983). For the significant relationships the correlation was negative. That is, as age increased, changes in strategy variables decreased. H2, which examined the relationship between the age of banks and the timing of strategic changes (relative inertia), was also rejected. Older banks changed strategy later than younger banks.

As with organizational age and strategic change, the association between organizational size and changes in RISK and LPD were tested. H3a examined the correlation between RISK and bank size and was rejected for the first time period and the second time period, but not for the overall period. During those two periods, the correlations were positive. Increased changes in strategy were observed as a bank's size increased. However, the data fail to reject the next two hypotheses, which tested the relationship between LPD and bank size (H3b) and the changes in both RISK and LPD simultaneously with bank size (H3c). Likewise, H4, which examined relative inertia and size of banks, was not rejected. There was no significant difference in the timing of strategic changes between older and younger banks.

H5a and H5b tested the relationship between the amount of strategic change and bank exits. The null was rejected for the test of association
between changes in RISK and survival (H5a), but could not be rejected when testing the relationship between LPD and survival. The results indicated that surviving firms changed RISK more than exiting firms, however, the differences in changes in LPD between surviving and exiting firms was not significant.

The research question posed by this research examined the relationship between bank failure and strategic type. The findings indicated a significant difference between failing and surviving firms. Failing banks exhibited more risky strategies than surviving banks.
CHAPTER V: CONCLUSIONS

INTRODUCTION

This study has examined changes in strategy in the U.S. commercial banking industry in an attempt to add to our understanding of strategic change. Two competing paradigms were examined and several specific theories embodied in these perspectives were tested. Chapter 3 outlined the hypotheses examined in this research and Chapter 4 summarized the findings of the research. This chapter will discuss interpretations and applications of those results, and suggest future avenues of research that may amplify the knowledge base that has been started with this study.

SUMMARY OF FINDINGS

Among the banks examined in the research during the deregulation period, 1978 to 1987, there was a negative relationship between organizational age and strategic change. Each of the four null hypotheses which tested the association between bank age and changes in RISK and/or LPD could be rejected, with the exception of the relationship between changes in LPD and age when 1978 and 1983 LPD measures were compared. This variance may be explained by the time frame. LPD is a measure of product diversification. Banks were given the opportunity to add to their
product lines with the Garn St. Germain Act in 1982. RISK was likely a more stable measure during this time period as banks adjusted their service offerings in response to the changes in opportunities created by the Garn St. Germain Act. However, this research provides some evidence that a negative relationship exists between bank age and changes in bank RISK and LPD.

The association between bank size and RISK and LPD is unclear. Of the four hypotheses, only the relationship between size and RISK could be rejected and only for the two time periods. There was a small, significant, positive correlation between size and RISK when measures of RISK were compared for 1978 and 1983 and a slightly larger, significant positive relationship when 1983 and 1987 measures of RISK were associated. It was expected that the correlation of the overall time period would be a recount of the two time periods which it encompassed. However, the comparison of changes in RISK and size from 1978 to 1987 were positive, but not significant. This outcome may suggest that there is not a veritable association between bank size and changes in RISK and LPD.

The third set of hypotheses examined the relationship between changes in strategy variables and bank exit. The first compared changes in RISK for surviving banks to changes in RISK for exiting banks. The second compared changes in LPD for surviving banks to changes in LPD for exiting banks. The first is rejected, however, the second could not be rejected based on the data used in this research. Surviving banks changed RISK more than exiting banks. Both groups decreased their level of RISK, however, exiting banks decreased RISK less. In other words, surviving
banks more to less risky asset activity, such as government secured loans than did the exiting banks. One explanation of this outcome could be found in the strategy measures. RISK is a measure of the degree of risk in a bank's asset activity. LPD is a measure of product diversification. During this time period when banks were being given new product and service opportunities with the Garn St. Germain Act, RISK may have been a more stable measure of strategy.

The research question explored the issue of whether type of strategy differed among surviving and exiting firms. The data utilized in this research found support for a difference among those two groups. Exiting banks had significantly higher levels of RISK and less diversified loan portfolios. During both periods, banks which survived had more conservative strategies. An argument could be made that type of strategy made a difference in the survival of a bank during the deregulatory period.

Prior to a more complete discussion of the findings it is important to note that sample size may have affected the statistical outcomes. It is not unusual to obtain significant results with an extremely large sample size when the relationship is very weak. The data base used for this research was large, exceeding 14,000 banks in each year under review. Thus, caution must be taken in the interpretation of the findings.
DISCUSSION OF INDIVIDUAL HYPOTHESES

AGE AND STRATEGIC CHANGE (H1a, H1b, H1c, H2)

This research found support for a negative relationship between age and strategic change. As the age of a bank increased, changes in the strategy measures decreased. The theory that older organizations change less than newer organizations is predicted by both adaptation and selection theory. Both perspectives have argued that as organizations age, change in strategy becomes more complicated. As early as the work of Stinchcombe (1965) it was argued that as organizations age, their members learn to trust and to cooperate with each other and are more willing to invest in old routines than in new ones (Nelson and Winter, 1982). Organizational habits form, bureaucracy increases (Inkson, Pugh, and Hickson, 1970; Evans and McQuillian, 1977), and power relationships become fixed (Pheffer and Salancik, 1978) leading to a tendency to repeatedly hire people similar to themselves (Kanter, 1977). Hannan and Freeman (1984) suggest that the processes of external legitimation take time, thus newly created organizations have lower levels of reliability and accountability and ultimately increased levels of inertia. Thus, older organizations will change less than newer organizations.

In order to distinguish more fully between the two perspectives, the idea of relative inertia has also been examined. This research found support for Hannan and Freeman's (1984) theory that inertial tendencies
increase with age creating an inability to change quickly enough to meet changes in the environment. In this research, older banks were more likely to change in the later period than in the earlier period.

**Size and Strategic Change (H3a, H3b, H3c, H4)**

Hannan and Freeman (1984) argue that as organizations become larger they will exhibit more inertia and change strategy or structure less frequently and more slowly than those who are smaller and more flexible. They argue that on the average, firms will respond more slowly than individuals to environmental change. Among large firms the exception to this is rare. Only small firms where the organization is little more than an "extension of the wills of the dominant coalition" (Hannan and Freeman, 1984: 158) and, where the leader does not delegate power down the chain of command will change be accomplished quickly.

This research found inconclusive results to the question of the relationship between organizational size and strategic change. Only two of the correlations examined were significant and they were small, positive relationships. In those two time periods, as size increased the amount of change in RISK increased. However, other nonsignificant correlations and t-tests were in the opposite direction. Thus, caution must be taken in the interpretation of these findings. The conclusions here are that there is minimal evidence that the larger banks had more
ability, perhaps through managerial resources, to change strategy following an environmental change.

With respect to relative inertia, there was no significant difference between the timing of strategic change for large and small organizations. Changes in RISK and LPD indicate that large and small organizations did not react differently to the changes in banking regulation.

**SURVIVAL AND STRATEGIC CHANGE (H5a, H5b)**

Summarizing the findings presented in Chapter 4, surviving firms changed RISK more than non-surviving firms and had less risky and more diversified strategies than exiting banks. However, there was no significant difference between the two groups with respect to changes in LPD. Hannan and Freeman (1984, 1989) argued that firms who change strategy are more likely to fail. The findings of this research question that theory. While the findings of this research are based on numerous assumptions, there is evidence that the type of asset strategy differed for surviving and exiting banks and may have been a factor in survival during that period. There is also an implication that strategic type was important to survival. Those firms that survived reduced their RISK and LPD significantly, changing to a more conservative strategy than those who exited the population.
It could also be argued that this research supports a liability of newness in the U.S. banking industry. However, this interpretation must be made with caution. While exiting banks were significantly younger than those who survived the ten year period under review, the average age of those which failed was 39.9. Forty years is not typically considered to be young in terms of organizational age. However, within this population, surviving banks were older.

The fact that the banking population is biased toward being an "older" population than the average may also be an explanation of the inconclusive findings. According to Hannan and Freeman (1984), longer time periods are needed to study older organizations. Organizations undergoing transformations such as the banking industry during this time period are highly vulnerable to environmental shocks. Large size enhances the capacity to withstand such shocks because they have more margin for error than small organizations. Small organizations can not easily reduce the scope of their operations much in response to temporary setbacks. Thus, the time frame used for this research may not have been long enough to fully examine the relationship between size and changes in RISK and LPD. The finding that exiting banks were smaller during the first period and larger during the second period can also be explained by this view. Larger organizations may have been as traumatized by the deregulated environment as smaller organizations. However, it may have taken longer to see the effects of this outcome.

CHAPTER V: CONCLUSIONS
DISCUSSION

RELATIONSHIP TO PREVIOUS FINDINGS

This research set out to examine two contrasting views of organizational change in the U.S. banking industry. The findings show mixed support for both perspectives. It could be argued that the organizational ecology perspective was supported for the first and second hypotheses. Organizational age did indeed appear to significantly increase inertia and decrease the likelihood of strategic change in this setting. However, the selection perspective was not supported for the other hypotheses. Size did not appear to have an impact on strategic change. Changing RISK and LPD did not increase the likelihood of failure in banks, regardless of organizational size or age. The results do not clearly indicate either the selection or adaptation model as being a more appropriate explanation of strategic change in the U.S. banking industry during the 1980's.

The results are, however, strikingly similar to those found by other researchers who have examined deregulated industries or industries undergoing an environmental jolt. In the airline industry, Kelly and Amburgey (1991) found support for their proposition that organizational age would decrease corporate level change. However, they did not find support for an inverse relationship between organizational size and
corporate level change or for the theory that strategic change would affect corporate failure.

Heather Haveman (1992), in her study of California Savings and Loan Associations, found support for her proposal that organizational change can benefit survival if it occurs in response to dramatic restructuring of environmental conditions. Based on her findings she concluded that the question should not be whether change is detrimental to organizations, but under what conditions change may be hazardous or helpful.

Other researchers found change in response to environmental jolts. Cool and Schendel (1987) found changes in scope and resource commitments in the pharmaceutical industry in response to major environmental shifts. Smith and Grimm (1987) also found that railroads changed strategy variables following deregulation.

**Research Enhancements**

It could be argued that this research could have been enhanced with more fine grained data inspection. The data base was large and the research questions were examined with general overview data. In order to more fully understand the implications of this research it would have been helpful to examine more homogeneous banks controlling for such things as age, size, geographic location, structure, and/or type of exit from the population. For example, the variables of age and size may be correlated and cross tabulations of these two variables may have offered valuable
information in the understanding of the relationship between these two variables and changes in strategy. Questions about the relationship between age and size of banks could have been addressed. It has been argued that the older, smaller banks fared best during the deregulation. They were primarily local community banks which had conservative lending practices in a local, more predictable market. Furthermore, it has been suggested that large banks were at a disadvantage during this time due to pressure from the federal government to become heavily involved in risky foreign investments. More fine grained inspection could examine such hypotheses as these.

It is likely that the two strategy variables are correlated. Both indicate types of risk. LPD is more a measure of product risk and RISK a general level of overall risk. The use of controls, creating a more homogeneous population, may have provided more insight into these two measures of strategy and their general appropriateness as a measure of banking strategy among all types of banks.

One additional enhancement to this research would have been to dissect the population exits and determine why a particular bank exited. Exits based on acquisition of a financially strong institution create a very different picture than exits based on financial insolvency.
ALTERNATIVE EXPLANATIONS

This research began with the expectation that two alternative perspectives of organizational change could be examined and one could be identified as a better explanation of the outcomes. The results have been inconclusive and have generated more questions than explanations.

Interpretations of the findings of this research are complicated by the possibility of interacting effects. Several alternative explanations need to be considered. Age and size are often correlated and attempts to separate them may lead to ambiguous findings. Future research could control for age and size by examining the association between RISK and/or LPD and both age and size. The correlation between the four subsets of banks, cross tabulated on age and size, could be made with the strategy variables. The results may provide more meaningful information about the associations between organizational age and size and changes in strategy.

Another explanation of the findings may be found in the use of the strategy measures. RISK and LPD are common measures of strategy in the banking industry. However, both were likely to have been affected by extraneous variables. In addition, the nature of the distributions indicate that bank strategy, as measured by these two variables, was in a period of change and lacked consistency. Consequently, the conclusions of this research may be based on findings of measures which do not accurately reflect the true state of strategic change.
The examination of the differences between surviving and exiting firms generated some interesting questions. However, the outcomes here may be contaminated by the inability to separate mergers, acquisitions, and financial failures. Firms may have exited the population because they were weak financially and were failing or being acquired or they may have exited the population because they were financially strong and could capture an excellent stock price as they sold out to an acquiring institution. Future research could examine a smaller sample of banks and attempt to make the distinction between types of exits and thus more fully answer the questions associated with this research.

The period under review was fraught with changes which lead to numerous other alternative explanations. Not only was regulation changing, but the economy, which significantly affects the banking community, was in a recession, the government was mandating foreign investment by U.S. banks, new forms of communication were entering the financial services marketplace and technology and communication opportunities were being created on a massive level.

One may conclude that neither the adaptation nor the selection theory provides an aggregate explanation of strategic change during an environmental jolt. In fact, a model based on the hospital industry developed by Meyer, Brooks, and Goes (1990), may provide a richer explanation of strategic change in the U.S. banking industry. They suggest that financial services, along with telecommunication, airline transportation, and health care, are "currently in the throes of quantum
change...discontinuous changes (which) are restructuring the industry, relocating boundaries, and changing the bases of competition" (p. 93).

Meyer, et al. (1990) argue that strategic management theory and research offer little guidance to managers facing such quantum change conditions. While they agree that sizeable literature has accumulated on strategic change, there are no theories dealing with the causes and processes of discontinuous change. They define change in terms of two types, first order or gradual change, and second order or discontinuous change. Deregulation, they suggest, would be of the second order type because it has a disruptive effect on the entire industry. An effect that calls for a major "revolution" in the industry.

Moreover, Meyer, et al. (1990) argue that strategic choice and organizational ecology focus only on continuous or first order change. The authors describe the adaptation perspective as one which involves scanning the environment on a continuous basis and adjusting to it purposively. Similarly, the authors define selection models as first order change models also because they emphasize the inert tendencies of organizations and focus on the long term evolution of populations and gradual fit with environmental niches through selection and replacement procedures.

When environmental conditions exist such that an industry is jolted by a major shift, Meyer, et al. (1990) suggest a model of revolution as opposed to one of adaptation or selection. They propose that industries are restructured and reconstituted during brief periods of quantum change. Based on their research in the hospital industry (Meyer, Brooks, and Goes,
1990), the history of the banking industry, and the findings of this research, a model of strategic change in the banking industry is proposed.

THE MODEL

Based on a historical overview of the hospital industry, Meyer, et al. (1990) developed three propositions explaining the relationship between selection theories, adaptation theories, and their theory of revolutionary change. These three propositions are as follows:

Proposition 1: Over time, an industry's evolutionary changes tend to increase the homogeneity of firms within industries.

Proposition 2: Over time, adaptive changes undertaken by individual firms increase the collective diversity of firms within the industry.

Proposition 3: Revolutionary changes within an industry trigger adaptive and metamorphic changes within firms.

These three propositions could apply to three distinct periods in the history of U.S. banking. The relationship between these three propositions and the U.S. banking industry requires some historical review.
PERIOD I: STRATEGIC HOMOGENEITY

The first period, which began in the early 1930's, was one of heavy governmental regulation which had its roots in the Depression and the banking crisis of the 1930s and the subsequent adoption of a New Deal statute known as the Banking Act of 1933. Since 1863, the federal government had chartered and supervised national banks. In 1913, Congress had established the Federal Reserve System, but it was the legislation adopted in 1933 that laid the groundwork for the banking strategy which dominated the industry for many years.

This legislation separated commercial and investment banking and created the federal deposit insurance system. The purpose of this legislation has generally been thought to have been to protect bankers from their own imprudent decision making as well as shelter them from competition (Kaufman, Mote, and Rosenblum, 1983; Garten, 1991). Thus, the first period was one where banks were very tightly regulated and had little freedom to develop individual strategies. Banks were a homogeneous lot, defined as organizations "which (1) accept deposits that the depositor has a legal right to withdraw on demand, and (2) engages in the business of making commercial loans" (Taylor, 1990: 23).
PERIOD 2: STRATEGIC HETEROGENEITY

During the 1950's and 60's the main issues in banking were structural (Taylor, 1990). Where states limited banks to single offices through unit banking laws, this restriction could be bypassed by the acquisition of multiple banks through bank holding companies. New legislation was passed to curb the growth and power of these holding companies and to limit interstate banking. In addition, banks began to identify other ways to compete with each other by adding NOW accounts and CD's to their product line. Thus, banks were primed for competitive strategy and were finding ways to compete despite the inhibiting regulation imposed by the federal government. Strategic planning committees and marketing departments were becoming more important and banks began to enter a more competitive arena. Some banks were failing and others were gaining ground competitively. Thus, the industry was no longer characterized by homogeneity, but by increasing heterogeneity which was based on managerial decision making (adaptation).

PERIOD 3: STRATEGIC REVOLUTION

According to Meyer, et al. (1990) the revolutionary stage occurs in response to tensions and stress which occurs over time. They employ the theory of punctuated equilibria to explain. Gould and Eldredge (1977) have characterized punctuated equilibria as changes that occur in large

CHAPTER V: CONCLUSIONS
leaps. These changes follow a gradual accumulation of stress, such as the increasing tension created by banks as they tried to carve out competitive strategies in a regulated environment which was designed to decrease competitive opportunities. Thus, the 1980's brought about major changes in the financial services industry. Bank managers were asking for more competitive freedom and the government responded with major deregulatory changes. These changes were initiated by the passing of the Depository Institutions Deregulation and Monetary Control of 1980 and the Garn St Germain Act of 1982. These two pieces of legislation were the beginning of a decade of regulatory change in which banks were thrown into a still more competitive environment.

The literature depicts a sense of anxiety within the industry as the role of the bank manager has become increasingly complex. (See Chapter 2 for a more lengthy discussion of the deregulated environment.) According to Meyer, Brooks, and Goes (1990: 103), "when an organization is jolted away from equilibrium, the rules of the game can change radically." Thus, banks entered the third stage of the model.

Meyer, et al. (1990) identify several ways in which organizations respond to revolution: specifically, interorganizational relationships, experimentation with new organizational forms, affiliations spanning industry boundaries, and interorganizational networks. Even a casual look at the industry now indicates the presence of many of these responses (i.e., mergers, acquisitions, increased use of branching and interstate banking). However, support for much of the application of this theory
must necessarily be left to later research which can be designed to test the specific propositions of this theory.

SIGNIFICANCE OF RESEARCH

IMPlications FOR STRATEGIC MANAGEMENT

When analyzing statistical data there are generally several questions that must be asked in the interpretation of the findings. In the case of correlations it is important to examine not only the direction of the relationship but also the magnitude. With respect to the relationship between organizational age and organizational size, while the correlations were often significant, the magnitude of the relationship in almost every case was very small. In addition, significant findings are more likely to be found given the large sample size. Thus, one might argue that given the small magnitude of the relationship between organizational age and strategic change, the mixed and non significant relationship between organizational size and strategic change, and the very large sample size, the results approach a "so what" status.

However, the implications of this research are important to a number of groups. This research joins one of the primary battles in strategy research because organizational ecologists have challenged the very rock on which the field of strategy stands. Academics in the strategy field have long based their research on the notion that managers can and will

CHAPTER V: CONCLUSIONS

147
enact change when their organization is faced with an environmental
disruption or change. The perspectives of the organizational ecologist
have been viewed by many as discounting the importance of the manager and
the dominant coalition to influence the destiny of organizations.

As a student of strategy, where organizational leadership has long
been considered critical to the performance of organizations, it was
interesting to the researcher to examine the question of which perspective
is "correct" and to test the importance of leaders in organizations.
Thus, this research tested several of the basic propositions of the
organizational ecology perspective in order to determine whether their
arguments more accurately described strategic change during the 1980's in
the financial services industry than the adaptation perspective.

Despite the limitations of this research, the results were similar
to other studies which have examined similar questions in other
industries. One important conclusion to the strategy literature is that
it may indeed be that these are not two competing paradigms, but two
perspectives which ask significantly different questions and which should
be applied at different levels of study.

Moreover, finding mixed support for both paradigms requires more
serious consideration of the appropriateness of either theory during
periods of environmental disruption. One explanation of the mixed results
of this research may be the presence of a major environmental jolt. Based
on the argument presented by Meyers, Brocks, and Goes (1990) that
adaptation and organizational ecology are both explanations of strategic
change in relatively stable and continuous change environments, perhaps

CHAPTER V: CONCLUSIONS 148
future research comparing these two paradigms could better reach its objective in an environment which is in continuous or first order environmental change.

In conclusion, this research may suggest that the question of which is the best explanation is not the correct inquiry. Instead, the more appropriate question may be when is one a better explanation of strategic change than the other. According to Meyers et al. (1990) each is a partial explanation for diversity in populations, but neither is a complete interpretation. Future research can build on the foundation laid by this study. This research examined a large sample of heterogenous firms. Future research may add insight to these findings by controlling for age, size, geographic location, bank types, structure, type of changes and/or reason for exit from the population.

**IMPLICATIONS FOR COMMERCIAL BANKING**

As discussed and argued in Chapter 1, the deregulation of the U.S. banking industry has thrown banks into a more competitive environment and has left them less protected by the government. The original intent of the bank legislation of the 1930's was to protect bankers from themselves (Kaufman, Mote, and Rosenblum, 1983). According to Garten (1991), the new regulatory strategy no longer protects banks from the competitive marketplace.
The findings of this research indicate that banks indeed did change risk and diversification strategy following the DIDMCA (1980) and the Garn St. Germain Act (1982). And, those changes were toward more conservative strategies — less risky and more diversified. One interpretation is that banks that survived the environmental jolt created by deregulation were not swept away by the "opportunities" created by the changes and chose to cautiously compete with more conservative strategies in the new environment as opposed to the failed banks which exhibited more aggressive and risky strategies.

This study's value to bank management may be in that it can serve as an input to strategic planning by giving bank managers an idea of the strategies and structures of their peers and what seemed to "work" in this situation. The results can also be interpreted to illustrate the importance of strategic management and planning in the U.S. banking industry.

Banking and the broader industry of financial services represents the backbone of the U.S. economy. A better understanding of the current situation and an examination of the past few years of changes can provide both bankers and regulators with a better cognizance of the effects of deregulation. There are many lessons that can be learned from in-depth studies of how this process will work out in a sector of the economy that is trying to restructure itself. A recent study conducted by Bank Administration Institute, Arthur Andersen, and Andersen Consulting (1991) reported that an industry shake-out is gaining momentum and that 'breakout strategies' are needed in order to survive the coming years in the banking...
industry. Industry leaders argue that strategic direction is of paramount importance, with major commitments of financial resources being used to identify the best strategies for the coming years (Pihl and Wambay, 1991). This research represents a contribution to this important topic in many ways.

**Implications for Public Policy**

This study examines the notion that changes in regulation can have an impact on the management of organizations. Students and makers of public policy study and set the rules under which managers must compete. The changes in regulation in the banking industry has had profound effects on the banking and broader financial services industry. Historical tracing of the effects these changes can provide policy makers with insight as they develop future policy. This study is a contribution to the limited, but growing body of research on the deregulation of banking. Future research testing the Meyer, Brooks, and Goes (1990) model which was applied to this setting could be beneficial to this group.
LIMITATIONS OF RESEARCH

One of the major limitations of this research is that the banking industry is still in turmoil and deregulation legislation is still being enacted. While objective financial data represents an appropriate method for identifying strategic changes over time, its primary weakness is in finding recent or current changes in strategy (Snow and Hambrick, 1980). Ten to fifteen years of additional data could enhance the study.

Second, although this research examined important strategic banking decisions, the concept of strategy may not have been fully captured. For example, interstate banking law changes, mergers, and consolidations, rapidly changing technology, and increased competition from non-bank organizations have resulted in major changes in the structure of the banking industry which are not directly considered in this study. In addition, because the data are objective, and measure only realized strategies, the decision making process, organizational goals, and intended strategies will not be explored. Hannan and Freeman (1989) argue that "stated goals" are an important core feature. The diversification and goals of the shareholders also strongly influence banking strategy and are being ignored in this research. Future research could include organizational and shareholder goals.

Third, the issue of performance is ignored. The relationship between strategic change and firm success and failure is an important issue for the organizational ecologist. In order to better explain the
role of organizational ecology in the banking industry, future research could include the performance outcomes of change.

Fourth, this research was based on a large sample which was likely heterogenous. Quality of findings may have been sacrificed for quantity. As a initiation study for the questions and proposition of this research, this was appropriate. However, future research demands more fine grained inspection and more controls. The associations between the variables requires examination and a more comprehensive measure of strategy needs to be developed.

SUGGESTIONS FOR FUTURE RESEARCH

The relationships examined in this research are complex. Deregulation, commercial bank strategy, inertia, organizational age, organizational size, and strategic change are each multi-faceted and when combined become very difficult to break apart for the purposes of analysis. However, this study has attempted to contribute in a small way to the vast body of organizational theory and bank management literature by providing some insight and by pointing the way for follow up studies.

The most direct way to gain increased knowledge about this research is to replicate this research. This could be accomplished by adding additional years of data after 1987, including the years omitted in this study (1979-1982, 1984-1986), and/or proposing directional hypotheses instead of the two tailed null hypotheses used in this research.
A second way of building on this research is to modify the analysis of the data. Correlations were chosen as the primary statistical tool for this research. Future research may include the use of such methods as event history analysis, cluster analysis and/or discriminate analysis which could better maintain the continuous nature of the variables.

Another important extension of this research is in the area of operationalization and measurement of the strategy variables. As noted earlier this research is limited to two financial, objective measures of strategy. Perceptions of strategy, intended strategy and process strategy issues are ignored. Adding information about these dimensions of banking strategy may substantially increase our understanding of strategic changes in banking and the effects of deregulation on those changes. Strategies could also be conceptualized in terms of one of the well accepted strategic typologies, or a typology of banking strategy could be developed which could assist bank managers in their strategic planning activities.

It could be argued that this research focused on quantity of data. The exceptionally large data base provided interesting insight into the questions posed, however, the large sample may have been so heterogenous that any consistency in the findings was illusive. Future research on a smaller more homogeneous sample would allow for more fine grained findings. Some possibilities here include controlling for bank age, bank size, geographic location, type of banking institution based on customer and product offerings, and/or structure.

One conclusion of this research is that neither the adaptation nor the selection theories can fully explain the changes in strategy which

CHAPTER V: CONCLUSIONS
occurred in banking during deregulation. As suggested earlier, a new model which takes into account the "revolutionary" changes which occur during environmental jolts provides a better explanation. Testing this model of the U.S. banking industry would seem to be a natural extension of this research.

CONCLUSIONS

This research examined the competing paradigms of selection and adaptation. This study, combined with emerging literature examining these two perspectives offers added insight into the strategy literature. The findings show mixed support for theories embedded in the organizational ecology perspective and the adaptation perspective. Banks did change strategy in response to an environmental jolt, defined here in terms of industry deregulation, and firms which survived the jolt had changed more and had less risky, more diversified strategies than those who failed during that time period.

Neither the selection nor the adaptation model was found to be a better explanation of the banking industry in the 1980's. Instead a third model of revolutionary change was suggested which is designed to consider the unique environmental situations present in industry deregulation.


**BIBLIOGRAPHY**


REBECCA W. BALL

BUSINESS ADDRESS:
Department of Management and Marketing
College of Business
Northern Kentucky University
Highland Heights, KY
(606) 572-5764

HOME ADDRESS:
1807 Yellow Pine Court
Amelia, OH 45102
(513) 753-0344

EDUCATION:
Virginia Tech University, Blacksburg, VA.
Major Area: Strategic Management.
Minor Area: Marketing.
Virginia Tech University, Blacksburg, VA.
MBA, August 1980.
Concord College, Athens, WV.
B.S. in Business Administration, May 1978.
Concentration: Marketing.

TEACHING EXPERIENCE:
Northern Kentucky University, Highland Heights, KY. Instructor of Strategic Management (undergraduate and MBA). August 1993 - present.
Bluefield State College, Bluefield, WV. Assistant Professor of Marketing and Management. August 1992 - May 1993.

BUSINESS AND CONSULTING EXPERIENCE:
West Virginia University, Morgantown, WV. Medical Group Practice Manager. August 1980 - August 1981.
Small Business Consultant. February, 1982 - May 1992. Conducted small business management research and marketing research for a numerous small firms and local, state and federal governments. Among those firms and agencies were: Stanley and Associates, Beckley, WV; U.S. Small Business Administration; First Community Bank, Princeton, WV; U.S. Economic Development Authority; Winterplace Ski Resort, Ghent, WV; Mercer County Development Authority, Princeton, WV.

PUBLICATIONS AND PRESENTATIONS:


RESEARCH IN PROGRESS:

Ball, Rebecca. "Selection vs Adaptation: An Examination of the Impact of Deregulation on Strategic Change in U.S. Banks."

AFFILIATIONS:

Academy of Management.
Southern Management Association.
Strategic Management Society.