

# Making and Breaking Norms

## Competitive imitation patterns in the Swedish mutual fund industry



INSTITUTE OF INTERNATIONAL  
BUSINESS – IIB

STOCKHOLM SCHOOL OF ECONOMICS

Address: Hölländargatan 32, P.O. Box 6501, SE-113 83 Stockholm,  
Sweden.

Telephone: +46 (0)8 736 9500, Fax: +46 (0)8 31 99 27,

E-mail: [iibve@hhs.se](mailto:iibve@hhs.se)

- Founded in 1975
- Is a research institute at the Stockholm School of Economics
- Conducts theoretical and empirical research with emphasis on International Business
- Arranges weekly research seminars, yearly workshops and symposia
- Publishes its research findings and results in a series of working papers, in published journals and books
- Is in charge of graduate courses in International Business at the Stockholm School of Economics
- Is in charge of the International Graduate Program (IGP) at the Stockholm School of Economics
- Is in charge of the Advanced Management Program (AMP) at the Stockholm School of Economics

The IIB Board of Directors

Professor Leif Lindmark, President, Stockholm School of Economics  
(Chairman)

Professor Magnus Blomström, Stockholm School of Economics

Ms. Peggy Bruzelius, Chairman, Lancelot Asset Management AB

Mr. Staffan Bohman, President and CEO, Sapa AB

Mr. Jonas af Jochnick, Vice Chairman, Oriflame International S.A.

Professor Lars-Gunnar Mattsson, Stockholm School of Economics

Professor Harry Lane, Northeastern University, Boston

Mr. Anders Narvinger, CEO, The Association of Swedish Engineering  
Industries

Dr. Lars Otterbeck, President and CEO, Alecta

Dr.h.c. Hans Rausing, Director (honorary member)

Mr. Tom Wachtmeister, Director

Dr. Peter Hagström, Director IIB

More information: [www.iib.edu](http://www.iib.edu) Further information about current research at the institute and its publications will be mailed on request.

# **Making and**

*Competitive Imitation Patterns in the*

# **Breaking**

*Swedish Mutual Fund Industry*

# **Norms**

S t e f a n   J o n s s o n



A Dissertation for the  
Doctor's Degree in Philosophy  
Stockholm School of Economics

© IIB and the author 2002

ISBN: 91-971730-96

*Keywords:*

Competition

Imitation

Strategic management

Diffusion

Norms

Economic sociology

Institutional theory

*Printed by:*

Gotab, Stockholm, 2002

*Distributed by:*

IIB, Institute of International Business

P.O. Box 6501, SE-113 83 Stockholm, Sweden.

Tel: +46 (0)8 736 9500; Fax: +46 (0)8 31 99 27

E-mail: [iibve@hhs.se](mailto:iibve@hhs.se)



To  $S^2$  and  $M$



# Contents

<i>Preface</i>	<i>xv</i>
<i>Acknowledgements</i>	<i>xvii</i>
<b><u>CHAPTER 1- SOCIAL EMBEDDEDNESS OF ECONOMIC ACTION AND THE SPREAD OF NEW IDEAS AND PRACTICES</u></b>	<b><u>1</u></b>
1.1 RESEARCH STRATEGY AND EMPIRICAL SETTING	6
1.2 ORGANIZATION OF THE DISSERTATION	10
<b><u>CHAPTER 2- FOLLOW THE MONEY OR THE LEADER: ECONOMIC AND SOCIOLOGICAL THEORIES OF DIFFUSION</u></b>	<b><u>11</u></b>
2.1 THE SPREAD OF NEW IDEAS – PROCESSES OF ADOPTION AND DIFFUSION	13
2.2 AN ECONOMIC PERSPECTIVE: FOLLOW THE MONEY	15
2.2.1 FIRM CHARACTERISTICS	16
2.2.2 INNOVATION CHARACTERISTICS	19
2.2.3 STRATEGIC INTERACTION	21
2.2.4 AN ECONOMIC VIEW OF DIFFUSION IN TOTAL	24
2.3 A SOCIOLOGICAL PERSPECTIVE: FOLLOW THE LEADER	24
2.3.1 THE LEADER IS LARGE AND COSMOPOLITAN	25
2.3.2 INTERNAL AND EXTERNAL SOURCES OF INFORMATION INFLUENCING DIFFUSION	27
2.4 AN INSTITUTIONAL PERSPECTIVE ON DIFFUSION: INSTITUTIONAL ‘ FIT’ AND CHANNELS OF DIFFUSION	34
2.4.1 INSTITUTIONAL FIT AND THE ADOPTION OF PRODUCTS – YOU ADOPT WHAT YOU UNDERSTAND	34
2.4.2 INSTITUTIONAL CHANNELS OF DIFFUSION – FOLLOW THE LIKE-MINDED	36
2.5 TYING THE THREADS TOGETHER	43

## **CHAPTER 3- THE DEVELOPMENT OF A MARKET AND THE FORMATION OF A LOGIC OF COMPETITION** **44**

<b>3.1</b>	<b>CHOICE OF EMPIRICAL CONTEXT</b>	<b>44</b>
3.1.1	ALL FIRMS IN ONE INDUSTRY OR SOME FIRMS IN ALL INDUSTRIES?	45
3.1.2	DESIRABLE CHARACTERISTICS OF THE INDUSTRY	46
3.1.3	THE FINANCIAL SECTOR AS A CANDIDATE	47
<b>3.2</b>	<b>THE MUTUAL FUND PRODUCT</b>	<b>48</b>
<b>3.3</b>	<b>INITIATION BY IMITATION - A BRIEF HISTORY OF THE SWEDISH MUTUAL FUND INDUSTRY</b>	<b>49</b>
3.3.1	HUMBLE BEGINNINGS: FEW ACTORS, FEWER PRODUCTS (1958 - 1977)	50
3.3.2	GOVERNMENTAL SAVINGS SCHEMES: MORE ACTORS, STILL FEW PRODUCTS (1978-1989)	51
3.3.3	DEREGULATION: MANY ACTORS, MANY PRODUCTS (1989 - 2000)	52
<b>3.4</b>	<b>THE DEVELOPMENT OF NORMS OF COMPETITION</b>	<b>60</b>
3.4.1	CONSTRUCTING A SERVICE MARKET	60
3.4.2	ON THE MUTUAL FUND 'CAT-WALK' - THE VALUE OF NOVELTY	61
3.4.3	INTRODUCING A NEW PRODUCT - SPEED AND UNCERTAINTY	63
3.4.4	THE CONSTRUCTION OF AN INDICATOR OF PRODUCT QUALITY	70
3.4.5	'ACTIVE MANAGEMENT' AS A NORM	73
3.4.6	THE PROFESSIONALIZATION OF ANALYST CAPABILITIES	77
3.4.7	EXTERNAL LEGITIMACY - RATING FIRMS AND MEDIA	90
<b>3.5</b>	<b>EFFECTS OF NORMS ON PRODUCT INTRODUCTION BEHAVIOR</b>	<b>94</b>
3.5.1	COMPETITIVE NORMS AND THE 'FIT' OF NEW PRODUCTS	95
3.5.2	NOT ALL FIRMS MAY FIT THE MOLD	110
<b>3.6</b>	<b>AN INSTITUTIONAL LOGIC AND PRODUCT INTRODUCTIONS IN THE SWEDISH MARKET FOR MUTUAL FUNDS</b>	<b>114</b>
<b>3.7</b>	<b>HYPOTHESES</b>	<b>115</b>
3.7.1	THE INTRODUCTION INTO THE INDUSTRY OF A NEW MUTUAL FUND PRODUCT CATEGORY	115
3.7.2	THE SPREAD OF AN INNOVATION THROUGH AN INDUSTRY	118
3.7.3	PROPOSITIONS AND HYPOTHESES	119
<b>3.8</b>	<b>APPENDIX I - INTERVIEWS</b>	<b>122</b>
3.8.1	PLACE, TIME AND METHOD	122
3.8.2	MUTUAL FUND FIRMS	123
3.8.3	INDUSTRY ASSOCIATIONS	124
3.8.4	RATING FIRMS AND OTHER INDUSTRY OBSERVERS	124

<b>3.9 APPENDIX II – CONTENT ANALYSIS OF INDEX AND SRI MEDIA ATTENTION</b>	<b>125</b>
--	------------

<b><u>CHAPTER 4 – RESEARCH DESIGN, STATISTICAL MODEL AND DATA</u></b>	<b><u>126</u></b>
---	-------------------

<b>4.1 RESEARCH STRATEGY AND DESIGN</b>	<b>126</b>
4.1.1 A NATURAL EXPERIMENT	127
4.1.2 A NOT-SO-NATURAL EXPERIMENT	128
4.1.3 THE NATURAL AND THE PSEUDO EXPERIMENTS	129
<b>4.2 METHOD</b>	<b>130</b>
4.2.1 THE MODEL	131
4.2.2 ASSUMPTIONS OF THE MODEL	135
<b>4.3 VARIABLES AND MODEL STRUCTURE</b>	<b>137</b>
4.3.1 VARIABLES	137
4.3.2 MODEL STRUCTURE	142
<b>4.4 DATA</b>	<b>147</b>
4.4.1 SAMPLE	148
4.4.2 DEPENDENT VARIABLE	149
4.4.3 INDEPENDENT VARIABLES	150
4.4.4 CONTROL VARIABLES	153
4.4.5 DESCRIPTIVES	155
<b>4.5 HYPOTHESIS TESTING</b>	<b>157</b>
<b>4.6 APPENDIX I: ANALYSIS OF POOLING INDEX AND SRI FUNDS</b>	<b>160</b>
<b>4.7 APPENDIX II: TESTING EFFECTS OF DROPPING CORRELATED COVARIATES</b>	<b>162</b>

<b><u>CHAPTER 5 – ANALYSIS AND RESULTS</u></b>	<b><u>164</u></b>
--	-------------------

<b>5.1 AGGREGATE ADOPTION PATTERNS</b>	<b>165</b>
<b>5.2 INVESTIGATING THE MICRO-LEVEL MECHANISMS OF IMITATION BEHAVIOR</b>	<b>167</b>
5.2.1 FIRM-LEVEL MECHANISMS OF DIFFUSION AND MODEL STRUCTURE	168
5.2.2 ALTERNATIVE (ECONOMIC) INTERPRETATIONS	178
5.2.3 ORGANIZATIONAL POLITICS AS AN ALTERNATIVE (?) VIEW	181
5.2.4 TESTING THE INSTITUTIONAL MODEL FURTHER	182
5.2.5 WHAT DO THE ANALYSES SHOW?	189
5.2.6 CONSTRAINTS AND EFFECTS ON THE DIFFUSION PROCESS	192

5.3	APPENDIX I - INTEGRATED HAZARD RATES FOR THREE EQUITY BASED MUTUAL FUND CATEGORIES	198
-----	---	-----

<b>CHAPTER 6- CONTROVERSIAL PRODUCTS AS A STRATEGY: TWO CASE STUDIES</b>	<b>200</b>
--	------------

6.1	BETTING ON BEING AVERAGE: AN INDEX FUND STRATEGY	201
6.1.1	HAS THE INDEX NICHE STRATEGY WORKED?	203
6.2	SALVATION THROUGH SOCIALLY RESPONSIBLE INVESTMENT	205
6.2.1	DID THE SRI NICHE STRATEGY SUCCEED?	207
6.3	BETTER TO BE A BIG FISH IN A SMALL POND OR VICE VERSA?	207

<b>CHAPTER 7 - DISCUSSION AND CONCLUSIONS</b>	<b>211</b>
---	------------

7.1	THE EMPIRICAL CONTRIBUTION - DEALING WITH A 'PRO- INNOVATION BIAS' IN DIFFUSION STUDIES AND AN OUT-OF-SAMPLE STUDY OF HOW SOCIETAL NORMS INFLUENCE FIRM BEHAVIOR	215
7.1.1	THE (DIFFUSION) PATH LESS TRAVELED	215
7.1.2	THE INFLUENCE OF SOCIETY-WIDE NORMS ON THE COMPETITIVE BEHAVIOR OF FIRMS	218
7.2	THE THEORETICAL CONTRIBUTION - INSTITUTIONS INFLUENCED BY COMPETITION AND COMPETITION INFLUENCED BY INSTITUTIONS	218
7.2.1	INSTITUTIONAL THEORY AND DRIVERS OF INSTITUTIONAL CHANGE	219
7.2.2	STRATEGIC MANAGEMENT THEORY	221
7.2.3	THE MYSTERY OF WHY SERVICE FIRMS INNOVATE	223
7.2.4	ORGANIZATIONAL ECOLOGY - COMPETITIVE INTENSITY AND THE INSTITUTIONAL FIT OF THE COMPETITIVE ACTION	224
7.3	CONCERNS OF THE FINDINGS AND FUTURE RESEARCH	226
7.3.1	ABILITY TO GENERALIZE THE FINDINGS	227
7.3.2	PROBLEMATIC MEASURES	228
7.3.3	QUESTIONS SURROUNDING THE RESULTS	229
7.4	CONCLUDING REMARKS	230
7.5	APPENDIX I - ESTIMATING THE MODEL WITH ALL ADOPTIONS AS ONE CATEGORY	232
7.6	APPENDIX II - ESTIMATION WITH 'RECENT FIRM PERFORMANCE' VARIABLE IN BOTH PROPENSITY AND SUSCEPTIBILITY VECTORS	234
	<i>References</i>	236

# Figures

FIGURE 1 - THE ADOPTION OF THREE NEW PRODUCTS	8
FIGURE 2 - AVERAGE PRODUCT DIVERSITY OF MUTUAL FUND FIRMS	53
FIGURE 3 - FIRM ENTRY, EXIT AND DENSITY	54
FIGURE 4 - ASSETS, NET SAVINGS AND THE AFGX	56
FIGURE 5 - MARKET RESOURCES PER FIRM SEK MILLION / FIRM @ 1980=100)	57
FIGURE 6 - NET SAVINGS PER FIRM	58
FIGURE 7 - AVERAGE AGE OF FIRMS	59
FIGURE 8- ADOPTION OF NEW PRODUCTS	65
FIGURE 9 - HOUSEHOLD SAVING PORTFOLIO	69
FIGURE 10 - PRODUCT DIVERSITY AND THE AFGX	70
FIGURE 11 - SECURITY ANALYSTS IN MUTUAL FUND FIRMS	79
FIGURE 12 - AVERAGE AND STANDARD DEVIATION OF NUMBER OF SECURITY ANALYSTS EMPLOYED BY MUTUAL FUND FIRMS	80
FIGURE 13 - DISTRIBUTION OF NUMBER OF ANALYSTS	81
FIGURE 14 - ANALYSTS PER PRODUCT	83
FIGURE 15 - MUTUAL FUND MANAGERS IN ANNUAL REPORTS IN 1992	86
FIGURE 16 - MUTUAL FUND MANAGERS IN ANNUAL REPORTS IN 1996	87
FIGURE 17 - MUTUAL FUND MANAGERS IN ANNUAL REPORTS IN 1999	88
FIGURE 18 - MEDIA COVERAGE OF MUTUAL FUNDS AND THE AFGX	91
FIGURE 19 - MEDIA ATTENTION TO SECURITY ANALYSTS IN THE MUTUAL FUND INDUSTRY	92

FIGURE 20 - PRODUCT ADOPTION PATTERNS	108
FIGURE 21 - ARTICLES BY FUND CATEGORY	109
FIGURE 22 - LAGGED ARTICLES AND ADOPTION PATTERNS	110
FIGURE 23 - AVERAGE WHITE-COLLAR (FINANCIAL SERVICES) AND ANALYST SALARIES	112
FIGURE 24 - ANALYST AVERAGE SALARIES AND THE DEVELOPMENT OF THE STOCK MARKET	113
FIGURE 25 - THE MIXED-INFLUENCE DIFFUSION MODEL	132
FIGURE 26 - THE HETEROGENEOUS DIFFUSION MODEL	133
FIGURE 27 - NELSON-AALEN ESTIMATION OF THE INTEGRATED HAZARD RATE	137
FIGURE 28 - STANDARD DEVIATION NUMBER OF ANALYSTS PER FIRM AND YEAR	140
FIGURE 29 - ANALYSTS EMPLOYED PER PRODUCT	141
FIGURE 30 - THE ANALYSIS MODEL WITH VARIABLES	147
FIGURE 31 - PRODUCT ADOPTIONS AND COVARIATE OBSERVATION WINDOW	148
FIGURE 32 - HAZARD FUNCTION INDEX, SRI AND MIXED ASSET FUNDS	166
FIGURE 33 - INTEGRATED HAZARD RATE OF ADOPTING MIXED ASSETS AND SRI/INDEX FUNDS	167
FIGURE 34 - ADOPTION OF MIXED ASSET FUNDS AND THE DEVELOPMENT OF THE SWEDISH EQUITIES MARKET	174
FIGURE 35 - SIZE AND RANK OF ADOPTER	176
FIGURE 36 - MEDIA ATTENTION AND ADOPTIONS	186
FIGURE 37 - INTEGRATED HAZARD RATE OF THREE EQUITY- BASED MUTUAL FUNDS	198
FIGURE 38 - AVERAGE FUND SIZE (OVER FIRST FOUR YEARS) FOR SMALL FIRMS	209



# Tables

TABLE 1 - PROPOSITIONS AND HYPOTHESES	120
TABLE 2 - CONTENT ANALYSIS INDEX AND SRI MEDIA ATTENTION	125
TABLE 3 - MEANS, STANDARD DEVIATIONS AND PEARSON CORRELATION COEFFICIENTS	156
TABLE 4 - PREDICTED RESULTS IN THE ANALYSIS	158
TABLE 5 - ANALYSIS OF POOLING INDEX AND SRI FUNDS	161
TABLE 6 - EFFECTS OF DROPPING CORRELATED VARIABLES	163
TABLE 7 - RESULTS FROM FIRST DIFFUSION ANALYSIS	171
TABLE 8 - CORRELATION OF RANK AND FIRM SIZE	176
TABLE 9 - ANALYZING INDEX AND SRI SEPARATELY	180
TABLE 10 - ANALYSIS INCLUDING MEDIA ATTENTION TO A FUND TYPE	185
TABLE 11 - ANALYSIS WITH SFF CHAIRPERSON	188
TABLE 12 - PREDICTED SIGNS AND OUTCOMES	190
TABLE 13 - ANALYSIS USING COEFFICIENT CONSTRAINTS	194
TABLE 14 - MULTIPLIER EFFECT OF VARIABLES	196
TABLE 15 - MODEL WITH ALL PRODUCT ADOPTIONS AS ONE CATEGORY	233
TABLE 16 - RESULTS FROM INCLUDING RECENT PERFORMANCE IN PROPENSITY VECTOR	235



# Preface

This doctoral dissertation is part of the research program in Competition and Strategy (C&S) at the Institute of International Business, IIB. It was written while Stefan Jonsson was a Ph.D. candidate at IIB.

The research was generously funded by the Swedish Competition Authority (Konkurrensverket) and the CaMiNO Consortium (Askus, Ericsson, Pharmacia, SEB, Skandia, and Volvo). This support is gratefully acknowledged.

The preparation of the thesis was made possible due to the kind co-operation of The Swedish Association of Financial Analysts (SFF - Sveriges Finansanalytikers Förening), The Swedish Financial Supervisory Authority (FI - Finansinspektionen), Morningstar Sweden and Sparöversikt (Fond & Bank), The Swedish Association of Mutual Fund Firms (Fondbolagens Förening), and all the firms in the Swedish mutual fund industry that generously shared their experiences and participated in the research.

IIB would like to thank participants in all these organizations and firms for their generosity and openness.

Peter Hagström  
Director, Institute of International Business



# Acknowledgements

Writing a dissertation is a long, winding process that involves many persons and touches on many more. Consequently no acknowledgement will cover all those who deserve recognition - my apologies to those left out.

I have had the great fortune to have a fantastic dissertation committee, that provided excellent support and lots of encouragement. Örjan Sölvell provided moral support, guidance and many fresh ideas and takes on my less than clear working drafts. Over the years, Udo Zander listened to more silly ideas than I would care to remember, and he still had the ability to pick out what-ever small grain of worth there may have been in the idea. I am indebted to him for giving me the courage to think freely. He is also an expert 'Tom Tvärtom'. With a rare combination of in-depth industry knowledge, a wide personal network as well as academic insight Karl-Olof Hammarkvist was also an indispensable part of the committee. The research would definitely have been empirically poorer without him. Henrich Greve introduced me to some of the 'tribal knowledge' of empirical statistical research as well as the mysteries of *RATE* in an amazingly clear manner. I am also indebted to him for sharing his excellent writing skills. Last, but not least, Jerker Denrell proved to be the indispensable guide, counselor, and friend that every Ph.D. student should have along for the journey. Without his exacting standards, the dissertation would be what it is today.

The dissertation was written at the *Institute of International Business* (IIB) where parties, professionalism and slackshops blend to form a truly creative working atmosphere. Although a place is more than the

individuals, they still make the parties (and pose the difficult questions at seminars) – so thank you Nicke, Julian, Henrik, Christian, Jerker, Carl, Glimman, Peter, Sigrid, Ciara, Lin, Kjell, Robert, Patrick, Jonas, Laurance, Örjan, Robin, Omar, Alissa, Ivo, Lena and Udo. We would, however, be deceiving ourselves if we thought IIB would be anything without the girls that keep the place a going concern – Vanja, Lena, Malin, Lotte and Kerstin. I am particularly indebted to Lotte Brandt and Henrik Glimstedt for their work on the lay-out of this dissertation. Also providing valuable input along the way while not part of the IIB have been: Richard Swedberg, Tore Ellingsen, Heather Haveman, Paul Ingram, Johannes Pennings and Olaf Sorensen

Regardless of the creative working environment, an empirical dissertation is not much more than the quality of its data. Twenty busy managing directors, product developers and asset managers took time out of their already full schedules to talk to me. Without them sharing their experiences this dissertation would have been very dry and much less interesting. Apart from the industry executives, a number of equally busy industry observers also took the time to talk to me as well as share data on the Swedish mutual fund industry: Jonas Lindmark (Head of Analysis with *Morningstar Sweden*); Håkan Johansson and Mats Wester (*Sparöversikt* and *Fond & Bank*) and Stefan Engström (Department of Finance at the Stockholm School of Economics). Other industry observers who shared their experiences with me included Niklas Lundberg (CEO of *Win Rating*), Patrik Tillman (banking industry analyst *Alfred Berg*) as well as Erik Gjötterberg (*McKinsey & Co.*, in Stockholm). Three institutions and a number people in them played a particularly important role in the quantitative data collection effort. Charlotte Jonsson and Isolde Otteland guided me expertly through the maze of rules, regulations and data sources of *Finansinspektionen* (*The Swedish Financial Supervisory Authority*) and Dan Eriksson ‘dug out’ the relevant data for me. Lilian Hagström and Madelene Lindblad Woodward shared the history and development of *SFF – Sveriges Finansanalytikers Förening* (the *Swedish Association of Financial Analysts*). Marie Lidgaard told me the interesting story of how the industry association (*Fondbolagets förening*) was born, providing an indispensable insight into the formation and workings of professional associations.

Sometimes one can wonder where the drive to write a dissertation comes from. Doubtlessly my parents, by constantly encouraging

curiosity (some times, no doubt, to their regret) were instrumental in my motivation. In particular my father, Ingvar, taught me the value of looking at the world and asking why. In the end, however, a dissertation is about one person endlessly rubbing fingers against one computer keyboard producing innumerable draft-versions of something that will perhaps come to be, sometime. If this sounds bleak, it must be admitted that it sometimes is. At precisely those times, when runs do not converge and formulations slip between your fingers and get lost in your keyboard, it is crucial to have the eager assistance of a two or a four year old to focus your mind on some more gainful activity. The making of a mud-bay in a sand-pit or the investigation of a snail-trail are good examples of such activities. It also helps having the support, and the critical eye, of someone who actually chose to share a life with you. So, last but really not least, Seema, Sebastian and Maya – this one is for you!

Rucklet October 1, 2002





## **Social Embeddedness of Economic Action and the Spread of New Ideas and Practices**

---

INTERACTION AMONG INDIVIDUALS in a community or society follows mainly unwritten rules. Many of these rules have not necessarily developed for the maximum efficiency of the community, but rather as a result of circumstance, opportunism and politics (Granovetter, 1985). Markets can be seen as an instance of human interaction, and understanding how firms compete in markets necessitates an appreciation of the development and influence of these unwritten rules (Swedberg, 1994; Fligstein, 2001; Granovetter, 2002). While most readers would, at an intuitive level, agree with the above statements, those schooled in economic theory would also recognize a discrepancy in some of the more common assumptions of how firms compete with each other. While rational choice theorists allow for the influence of habits and norms – or unwritten rules – on decision making (Abell, 1995), their competitive effects are typically assumed to be cancelled out in the greater economic scheme of things and aggregate, long-term, efficiency prevails (North, 1990). The main question addressed in this dissertation is what effects such rules, or norms, have in conjunction with economic incentives on how firms act in a competitive setting. Empirically, the focus of the dissertation is neither on the very micro-level of individual decision making, nor on the very macro-level of the effects on national economies but rather on an intermediate level where firms live, die and generate an idiosyncratic history which affects us all in our daily lives. To illustrate some of the core issues of this dissertation, consider the following example drawn from Swedish

newspaper reports about developments in the Swedish *hälsobem*<sup>1</sup> industry.

Over the past two decades, 23 out of 30 Swedish '*hälsobem*' have closed down – they have 'died' as firms. A widely quoted reason for the high death rate among these firms is the decline in the popularity of the ascetic treatments the traditional *hälsobem* offered, coupled with a reduction in government sponsored health care. To most observers, it would seem natural that such a radical shift in the environment of the firms should prompt frenetic change activity among them. Curiously enough, the most obvious change – to adapt to the changing tastes of consumers – has been met with utmost skepticism within the industry. In the year 2000, after most of the *hälsobem* had been wiped out, *Tallåsen* (one of the most well known *hälsobem*) met with scorn, ridicule and indignant feelings from within the industry when they attempted to change with the times by introducing coffee, wine and meat on their menu. One of the members of the board was quoted in a newspaper to have threatened to resign 'if animal cadavers were allowed in the *hälsobem*'. Over-all industry resistance to the change was strong enough to threaten the expulsion of *Tallåsen* from the industry association if they proceeded (Hellekant, 2000). Other newspaper stories report an earlier attempt by a *hälsobem* to break with industry norms, which resulted in its expulsion from the industry association and subsequent failure (DI, 1994).

These newspaper stories evoke the image of an industry where firms just do not entertain changes that break with 100-year-old norms about how they should act – even if it means the demise of the firm. While this dissertation is not about the trials and tribulations of the Swedish *hälsobem*, this simple example highlights a host of interesting issues and questions regarding the influence of norms and economic pressures on firm incentives to change. An obvious issue is that of the choice and ability of firms to change. Did 23 out of 30 *hälsobem* choose to perish rather than change, or did they perish because they were incapable of changing? Did the failed *hälsobem* even consider the necessary change or was it an 'unthinkable' action? What role did norms and economic incentives play? This leads to another question that cuts into

---

<sup>1</sup> *Hälsobem* is a particular type of Spa that draws on early 20<sup>th</sup> century ascetic ideas formulated by Mr Are Waerland. Their rehabilitation program is based on strict vegetarianism and a principle of no 'drugs' such as tobacco, coffee or tea.

a soft spot in theorizing on markets and competition – is a market in which firms compete defined by these firms or is it a ‘given’ condition to these firms (White, 1981; Oster, 1982a; Baron and Hannan, 1994; Fligstein, 2001)? If the *hålsöhem* had been able to include meat and wine on their menus to cater to a wider clientele, would such a move have redefined the ‘market’ for the *hålsöhem* and forced these firms to compete directly with hotels and conference facilities? From an economic perspective the ‘industry’ may not have changed, as neither the technology nor the essential consumer need they fulfil had changed (c.f. Porter, 1980). But for the firms in the *hålsöhem* industry it would have meant a totally different way of competing. These questions of firm capability and incentives to change are interesting from the point of view of understanding the competitive behavior of firms.

It is important to distinguish here between the question of the unwillingness of some firms to undertake a specific competitive action and the much wider discussion on technological inertia and resistance to change in general. Economic history is full of examples of resistance to the adoption of new technologies or practices by societies or communities as a whole (Easterlin, 1981; Olson, 1982). The ‘cause’ of inertia is often attributed to vested interests such as guilds, unions or intellectuals that are adversely inclined to the particular innovation, and the effects are seen as far-reaching for the economies as a whole (Mokyr, 1992). Adoption of the disputed practices is, in effect, blocked for all firms in an economy – often by law – and such practices are therefore not available as competitive options to firms. The concern of this dissertation, on the other hand, is with competitive actions that are possible for firms to undertake, but not necessarily considered correct or appropriate. The Swedish *hålsöhem*, for example, is not an outcome of rehabilitation efforts in a vegan society, where the inclusion of meat on the menu would perhaps be unlawful. Rather, it is a reflection of a set of norms that a number of firms have voluntarily submitted to, because of a shared belief. What happens when such norms intersect, or come into conflict with economic incentives and interests? Different streams of literature provide different, and partially overlapping, answers to this question.

An economic perspective, especially strategic management theory, provides insights in to how firms may be expected to behave under competitive conditions, but these theories are often limited by restric-

tive assumptions on the behavior of firms (Nelson, 1991). Such theories of how firms compete often deal with the issue of ability and willingness to change by an assumption that firms are *willing* to change when it is profitable to do so; and when they are not *able* to change they perish (Nelson, 1991; Rumelt, 1995; Geroski, 2001). Attempting a purely economic explanation of the demise of the *hålsöhem*, however, easily becomes strained. If the *hålsöhem* could change easily, why did a majority choose to die rather than change? It does not seem, technically, difficult for a *hålsöhem* to add meat and coffee to the menu, and the economic punishment for resisting change was shown over time to be harsh. This story suggests a socially 'richer' interpretation than the simple case where firms 'choose rich' or 'choose poor' through their strategic choices. The straw man of economic theory as entirely dependent on heroic assumptions about individual rationality should not be taken too far though. Empirically driven theories of economic behavior, such as behavioral finance, explicitly allow for individual 'irrationality', for example when explaining why financial markets are not always efficient (c.f. Shleifer, 1999). Similarly, the 'process school', or a 'cognitive strategy school', in strategic management research places emphasis on the effects of the socio-cognitive aspects of managerial decision making (Reger and Huff, 1993; Hodgkinson and Johnson, 1994). An even more widely cited effort to include human frailty in economic reasoning is the work by Richard Cyert and James March (1992). In an attempt to pry open the 'black box' of the neoclassical economic firm they investigate the effects that a number of known human (mainly cognitive) limitations have on core economic activities of a firm, such as choice of output levels and output pricing.

From the perspective of the present study, these approaches are primarily limited in two ways. Firstly, they tend to focus on the limits of *individual* rationality and cognitive processes (c.f. Granovetter, 2002). Less theoretical and empirical attention has been paid to how firms may behave in competitive situations with norms and values that are commonly constructed and shared across firms (March and Olsen, 1989; Walsh, 1995; Oliver, 1997) – as in the case of the Swedish *hålsöhem*. Secondly, while these approaches point to the existence and effects of norms on economic action, they more rarely present studies of whether such effects have significant consequences at a more aggregate level – for example for industries. Institutional theory, within econom-

ics as well as organizational sociology has however proceeded in such a direction.

Organizational institutionalists of various persuasions have studied how ideas which are taken for granted influence the behavior of firms (Meyer and Rowan, 1977; Scott, 1995). While proving empirically rich, much of the work has been concerned with non-profit organizations (Rowan, 1982; Tolbert and Zucker, 1983; Baum and Oliver, 1991). Alternatively studies have typically investigated administrative or organizational changes with effects from adoption which are difficult to judge (D'Aunno et al. 1991; Burns and Wholey, 1993; Haveman and Rao, 1997). This empirical focus on the effects of institutions on non-profit organizations or the adoption of practices has been argued to lead to an underestimation of the role of technical efficiency, and economic incentives on the action of a firm (Kraatz and Zajac, 1996; Lounsbury et al. 1998). In addition, many studies have conceived of the institutional environment as uni-dimensional, with one 'institution' that sets the frame of reference for most of the actors. In such a conceptualization, the often contested nature of institutions and multiplicity of institutions is cast aside (March and Olsen, 1989; Scott, 1995). Neglecting possible multiplicity of institutional rules is particularly troublesome when investigating a competitive setting where firms often consciously seek out differentiating positions in niches (Caves and Porter, 1977; Carroll, 1985) that may give rise to localized perceptions of competitive 'rules' (Lant and Baum, 1995; Porac et al. 1995).

Given the relatively rich theoretical treatment of the general influence of norms on economic actors, the main contribution of this thesis will be empirical. This dissertation contributes to the relatively few earlier empirical studies on the influence of norms, values and economic incentives on the adoption of new practices that have a clear economic impact<sup>2</sup>. Addressing this gap in literature, the dissertation investigates empirically the intersection of intra-firm values with economic incentives in shaping organizational competitive behavior. More concretely, the question addressed is about the effects of norms and economic incentives on the propensity of firms to undertake competitive change. The empirical focus is not, however, on the *process* by which values influence individual organizational behavior but rather on the *effects* and competitive outcomes that are visible when looking at a

---

<sup>2</sup> Some exceptions include (Palmer et al. 1993; D'Aunno et al. 2000).

larger set of firms. In terms of the above example, this dissertation will not focus on the firm-idiosyncratic decisions or political processes that may lead one or another *hålsöhem* to adopt or to resist any type of change. Instead the aim is to lift the level of analysis to the effects of the ideas commonly held in the industry. The level of interest is not, however, as aggregate as in population ecology studies, where the fate of individual organizations is inconsequential and where *hålsöhem* as a population would compete with the population of hotels and conference facilities (c.f. Carroll and Hannan, 1999). Theoretically, the approach of the dissertation has several points in common with the 'process school' and the 'macro culture' view of strategy (Hodgkinson and Johnson, 1994; Abrahamson and Fombrun, 1994; Peteraf and Shanley, 1997; Rindova and Fombrun, 1999). However, the theoretical framework chosen to work within is primarily the organizational neo-institutional framework (DiMaggio and Powell, 1983; Scott, 1995). While there are large areas of intersection between a macro culture and an institutional perspective on the effects of shared norms (DiMaggio and Powell, 1991; Walsh, 1995), there are also some distinctions. A key difference of importance to this research, is that a macro culture view focuses on the role and effects of common norms as a product of common processes among firms *within* an industry (Abrahamson and Fombrun, 1994). A neo-institutional perspective, on the other hand, employs a wider societal lens when investigating the formation of norms (Friedland and Alford, 1991; Haveman and Rao, 1997).

The particular research interest leads to a number of empirical and methodological challenges and considerations – primarily the need to differentiate between what are institutional and economic influences on firms' behavior (c.f. Mezas, 1990; D'Aunno et al. 2000). These issues are discussed further below.

## 1.1 Research strategy and empirical setting

To identify economic and institutional influences on the competitive behavior of firms, the empirical investigation focuses on competitive actions with rather clear institutional and economic consequences. Product market changes represent a tangible competitive action undertaken by a firm, with direct effects on the competitive position of the firm that can also be clearly observed retroactively. Following Davis

and Greve (1997) and Strang and Meyer (1994), the research traces the spread of multiple product innovations through a single firm population during one historical time period. The product innovations studied are not technological and there are no legal or information barriers to imitation in the industry that would direct the diffusion or the ease of making money for the innovator (Levin et al. 1987; Teece, 1987b). Economic incentives for firms in the industry to adopt new products quickly are strong, so the base-line adoption rate of new product innovations is fast.

Empirically, the research task is to distinguish whether the diffusion of new products is influenced by their economic potential or by their perceived congruence with norms and values. Prevailing institutionalized norms of competing, and of products appropriate to compete with, are inferred from an in-depth qualitative study of the historical development of the market under study (c.f. Leblebici et al., 1991; Haveman and Rao, 1997; Thornton and Ocasio, 1999). To distinguish between the effects of economic (firms as driven by profit) and institutional (firms as driven by appropriateness to context) product adoption incentives, firms are characterized with respect to how likely they are to conform to institutionalized norms by investigating firm-level institutional 'markers' (c.f. Strang and Meyer, 1994; Chaves, 1996). The empirical setting chosen is the industry for mutual funds in Sweden – an industry that has experienced fundamental regulatory and competitive changes during its brief history. Over a period of roughly forty years, the industry has changed from a small insignificant alternative to bank saving to the largest form of private savings, competing with direct stock investment (Niemeyer, 2000). This industry transformation has engendered a shift in the way firms in the industry define how they compete (c.f. Lounsbury, 2001). From competing with mutual funds as standard retail-bank products (like savings accounts), a norm of competing on the 'quality of asset management' formed and became increasingly accepted among the firms in the industry. This development took place in conjunction with the professionalization of security analysts, and an increase in their importance in the operations of mutual fund firms. Based on this insight, hypotheses are formulated about how such constructed norms of competition influence the actual product introduction behavior of mutual fund firms. These hypotheses are then investigated in a longitudinal quantitative event-history study

of the product introduction behavior of firms in the mutual fund industry.

The quantitative empirical study investigates the diffusion of three product categories of mutual funds from 1989 – 2000 (see Figure 1). One of the product categories investigated is *Mixed asset* funds – mutual funds investing both in equity and bonds. This product category was primarily popularized when changes in the pension rules increased individual pension saving in 1993.

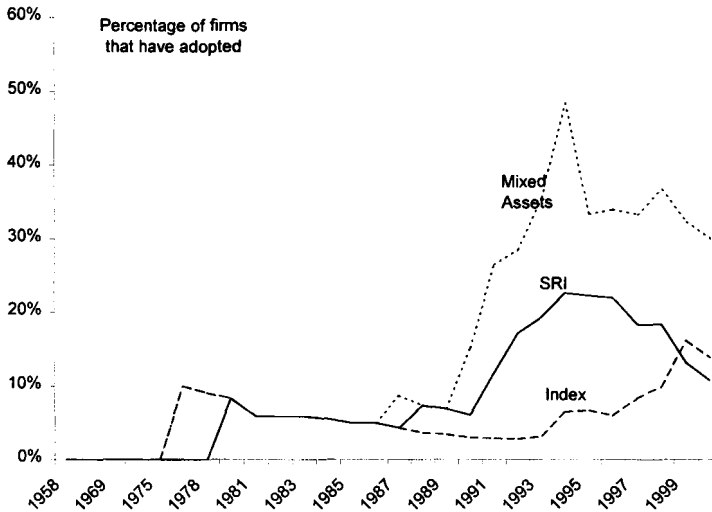


Figure 1 – The Adoption of three new products<sup>3</sup>

By the year 2000, about 30 per cent of the firms had adopted the *Mixed assets* fund product innovation, a diffusion pattern similar to most other product introductions in the industry. From the point of view of norms of how to compete in the industry, the product is well in line with the shared industry notion that firms compete on the quality of the asset management they provide to the consumer.

The two other product categories investigated are *Index* and *Socially Responsible Investment* (environmental and ethical/charity) funds. Introduced at the same time as *Mixed asset* funds, approximately 15 per cent of the firms had adopted either of these products by the end of 2000. Both index and socially responsible funds represent innovations that diverge from current competitive norms. *Index* funds pose a direct

<sup>3</sup> Source: The Swedish Financial Supervisory Authority and author's calculations



challenge to the concept of active management whereas *SRI* funds appeal to traditionally non-economic values such as ethical or environmental concerns. For example, in the U.S. the *Index* funds were, when first introduced, ridiculed within the finance industry for being 'un-American' as they 'bet on mediocrity' by following an index for investment decisions rather than relying on analysis of securities by financial analysts (Damato, 2001). At the heart of the controversy regarding index funds is that *index* funds in essence can be construed as a vote of no confidence in active management and the work of security analysts (Gruber, 1996). *Socially Responsible Investment (SRI)*, on the other hand, is controversial because of the perceived lack of rational economic logic underpinning its core ideas. It is by some analysts seen as 'the domain of cranks... or loonies', presumably for the belief that environmental soundness is a systematically positive sectoral factor. At a more fundamental level, there is industry skepticism about the belief that there may be other values to investment than maximum immediate financial return (Euromoney, 1999). While these two mutual fund categories diverge from an idea currently strongly espoused within the Swedish mutual fund industry about how firms should compete their potential economic value as a product to a firm is not, per se, lower than that of other funds. *Socially Responsible Investment (SRI)* funds have, for example, commanded a higher management fee than the average managed fund for a long time (Euromoney, 1999). Index funds, on the other hand, command generally lower fees than actively managed funds but instead offer large actors better scope for leveraging their size in competition with smaller actors through economies of scale. Using economic reasoning it is thus not clear, a priori, why these funds trail *Mixed asset* funds in their diffusion across the industry.

The quantitative study investigates why the product innovations of *index* and *socially responsible investment* mutual funds diffuse differently than *Mixed assets* funds. Current diffusion theories within the economic and sociological traditions provide both answers and further questions to explain these differences. Did *index* and *socially responsible investment* funds diffuse at a slower rate because they were less profitable product innovations (the economic story)? In that case, why did they diffuse to even 15 per cent of the firms and how did most firms know, before trying them out, that these funds would not be profitable? An alternative (institutional explanation) is that *index* and *SRI* funds diffused at a

slower rate because they were not in congruence with prevailing norms of how firms should compete. A follow-up question then presents itself – why did some firms go against the prevailing norms and adopt these products? To answer some of these questions this dissertation argues the usefulness of viewing economic and sociological perspectives on competitive action as complementary, providing a fuller and more nuanced understanding of competitive firm behavior (c.f. Baron and Hannan, 1994; Dobbin and Baum, 2000; Geroski, 2001).

## 1.2 Organization of the dissertation

The dissertation is organized as follows. Chapter two reviews economic and sociological diffusion theories and studies. Apart from deriving propositions from the literature, the chapter also argues that some of the different findings of the perspectives may stem not from theoretical incompatibilities but largely from different empirical foci. Chapter three introduces the empirical setting and provides a historical study of the development of the market for mutual funds in Sweden and the development of shared norms of how to compete. By contextualizing the propositions of chapter two, chapter three provides a number of empirically grounded and testable hypotheses. Chapter four discusses the research strategy and introduces the analysis method and the statistical model chosen to operationalize the research strategy. The data collection process as well as the operationalization of relevant variables used for testing the hypotheses of chapter three are also discussed. Chapter five presents the results of the quantitative analysis, interpreting these from both an institutional and an economic perspective. Chapter six illustrates the findings from the quantitative analysis from two case studies of firms adopting products that contradict the prevailing norms. Chapter seven concludes the dissertation by discussing the implications of the findings for existing theories of competitive behavior, the limitations of the study as well as future research.

## **Follow the Money or the Leader: Economic and Sociological Theories of Diffusion**

---

HOW DO NORMS which are taken-for-granted as appropriate firm behavior and economic incentives for undertaking certain competitive actions influence actual firm behavior? Investigating this issue calls for the study of which firms undertake a specific competitive action under what circumstances, and when. As argued in the preceding chapter, this can be done where the action in question is observable and has clear economic as well as 'appropriateness' consequences for the firm. The adoption, and spread, of new product innovations in an industry is an example of such an action. Product adoptions are tangible expressions of a competitive action and firms in the mutual fund industry are subjected both to an institutionalized as well as a competitive environment. When seeking to understand how firms compete by adopting new ideas and practices, it is natural to look to the literature on diffusion research to take stock of what is known. Diffusion studies intersect economic as well as sociological fields of research (c.f. Rogers, 1995; O'Neill et al. 1998; Greve, 2000) providing a suitable empirical framework for this dissertation. While the field of diffusion research is wide and spans several disciplinary boundaries, this review draws mainly on the findings from economics and organizational sociology for two reasons. Firstly, the phenomenon to be studied is the adoption behavior of organizations, not of individuals which is the central concern of many of the diffusion studies within the fields of anthropology or geography (c.f. Katz et al., 1963; Brown, 1981). Secondly, a subsidiary point in the dissertation is to argue the complementarity of an economic and a sociological view of diffusion and competition (c.f. Dobbin and Baum, 2000; Strang and Macy, 2001).

Central to an argument of how these two views complement each other is a recognition that economically and sociologically oriented theories of diffusion typically have had different empirical foci, as well as the fact that they have largely relied on divergent assumptions about human action. Seen from such an angle, some of the different diffusion predictions of economic and sociological models can be understood as addressing different (and complementary) aspects of a diffusion process (Strang and Macy, 2001). While economic diffusion studies have investigated the diffusion processes of economically significant innovations (c.f. Mansfield, 1961; Rose and Joskow, 1990), sociologically inspired diffusion studies have often focused on the spread of administrative practices and ideas of how to organize (c.f. Tolbert and Zucker, 1983; Burns and Wholey, 1993). The analytical diffusion models used in the economic and sociological traditions have also differed, primarily with respect to assumptions of human rationality. Strang and Macy (2001) argue that economic ideas of diffusion processes are often 'over rational' whereas sociological notions tend to be 'under rational'. Their argument is that the typical economic diffusion model focuses on the adoption decision, assuming that an efficient innovation will spread among rational actors. The sociological diffusion model, on the other hand, focuses mainly on the mechanism of contagion (the spread by observation) and assumes that actors pay little attention to what happens after adoption - to whether or not the innovation actually works.

These different empirical foci in combination with the different behavioral assumptions have led to idiosyncratic findings. Economic studies have mainly studied the diffusion of innovations with a clear 'bottom-line' (Teece, 1980; Greve, 1994), generating strong findings for the relevance of the profitability criteria in the diffusion process. Sociological diffusion studies, on the other hand, have commonly been concerned with the spread of practices or ideas - innovations for which efficiency or profitability are not easily determined (Strang and Soule, 1998). Thus, while economic diffusion studies have emphasized the importance of the relative advantage (or profitability) of an innovation in determining the diffusion of an innovation, a sociological approach, dealing with innovations of ambiguous efficiency, has focused more on the channels of information among adopters. By juxtaposing propositions from an 'over rational' economic and an 'under rational'

sociological tradition of diffusion studies, this dissertation seeks to overcome some of the limitations of earlier diffusion studies (c.f. Strang and Soule, 1998; Strang and Macy, 2001). Common to both theoretical views, however, is an empirical focus on studying innovations that have diffused successfully<sup>4</sup> (Rogers, 1995; Strang and Macy, 2001). The selection criteria, to study what are seen *ex-post* as significant innovations, have contributed to a 'pro-innovation bias' in many findings (Rogers, 1995). Findings that are 'pro-innovation biased' tend to over-estimate the speed and the rationality by which innovations diffuse through a community of adopters, because of an over-sampling of successful diffusions (Rogers, 1995; Abrahamson and Fairchild, 1999; Strang and Macy, 2001).

## 2.1 The spread of new ideas – processes of adoption and diffusion

The process by which a new idea or product spreads across a community is often termed a diffusion process. Following from a 'pro-innovation' bias in most diffusion studies, the research question most often phrased is a variation on the theme of 'why did not all actors adopt at once?' (Brown, 1981; Rogers, 1995). The answer is typically found in the fact that adoption is more advantageous to some actors (providing a stronger incentive for these actors to adopt early), or that some actors are more centrally placed in a social structure and therefore receive information about earlier adoptions before other firms. Once these early actors have adopted and demonstrated the benefits of an innovation more widely others follow suit. As discussed briefly above, economic and sociological formulations of diffusion processes tend to differ with respect to the theoretical aim and the understanding of the diffusion process. There are also differences in the reasons for undertaking economic and sociological diffusion studies.

Economics pose the question why an innovation takes time to spread, often with the aim of examining what governs the rate of change in economies and in industries. The speed of diffusion is seen as positively related to societal efficiency, but negatively related to the individual incentives of firms to undertake R&D (Nelson, 1959). New,

---

<sup>4</sup> Notable exceptions are Burns and Wholey (1993), Greve (1995) and Rao et. al, (2001) who all investigate the decline in popularity of a new practice.

progressive innovations should be used by most firms for the greatest over-all efficiency in the economy. On the other hand, fast diffusion means short temporary monopolies of the innovators, which reduces private incentives to undertake R&D. Economic diffusion studies have in general paid little attention to aspects other than the relative advantage of an innovation<sup>5</sup> as determining diffusion patterns. This focus has resulted in a preponderance of studies of innovations with definable benefits and costs, i.e. products and technologies (Greve, 1994). Sociologists, on the other hand, often investigate diffusion processes to test hypotheses about how social structure influences action - viewing the diffusion processes as a means of investigating channels of inter-organizational influence (Katz et al. 1963; Strang and Soule, 1998). Sociologically inspired organization theorists, in particular within neo-institutional organization theory, have proceeded beyond a structural theory of diffusion channels to explicitly include cultural similarities as influencing the diffusion process (Strang and Meyer, 1994; Chaves, 1996). In comparison with economic diffusion studies, sociologically inspired diffusion studies have paid relatively more attention to the issues of how acceptable an innovation is to the adoption environment. As the empirical focus has been on the spread of practices and forms of organizing, less attention has, however, been paid to the influence of profit and competition concerns on adoption (Palmer et al. 1993; Kratz and Zajac, 1996).

An aim of this overview is to bring together ideas of an economic, a sociological structural and an institutional perspective of diffusion. A particular theoretical focus is on deriving propositions for the diffusion of new ideas and products that may or may not be in line with the dominant ideas and perceptions within an industry. The next three sections outline diffusion research within the economic and the sociological traditions and each section is concluded with a number of propositions from each particular perspective.

---

<sup>5</sup> Exceptions are Mansfield (1961) and Oster and Quigley (1977) who discuss the possible effects of 'worker resistance' to innovations although neither includes this in the analysis.

## 2.2 An economic perspective: follow the money

A central notion in the economic perspective is that firms adopt innovations expected to be profitable, thus a diffusion pattern should follow differences in perceived profitability (Molyneux and Shamroukh, 1999; Geroski, 2000). The profitability of adopting a given innovation may differ across firms depending on a number of factors. Particularly salient in economic diffusion research are issues of firm and innovation characteristics, strategic interaction and market conditions<sup>6</sup>. Firms may differ in several characteristics relevant to the utilization of an innovation and these differences lead to variations in the perceived profitability of adoption (Davies, 1979). At the firm level, size-related complementary assets (Teece, 1987a), or the benefits of market power (Porter, 1980) may alter the relative profitability of adoption across firms. Innovation characteristics may also render an innovation more or less easy to imitate for a particular firm and thus affect diffusion rates and patterns (Winter, 1987). Investment size and the nature of knowledge required for imitation have been found to influence diffusion rates (Mansfield, 1961; Zander and Kogut, 1995). Strategic action may also affect the perceived profitability of adoption, and thus adoption rate and pattern, among firms (Reinganum, 1989). Strategic entry decisions depend on the nature of the innovation, whether or not the innovation supports or destroys existing market power and firms' knowledge structures, the uncertainty of the innovation and the market position of the potential adopter (Gilbert and Newberry, 1982; Reinganum, 1983; Katz and Shapiro, 1987; Henderson, 1993). Finally, changes in market conditions, such as market growth and structure, may influence the salience and dynamics of either of the above influences on the diffusion process (Porter, 1980).

The following sections discuss these theoretical arguments in-depth and present earlier empirical findings. After each section, the relevant propositions are formulated.

---

<sup>6</sup> Curiously absent from economic diffusion analysis are, however, theories and findings from multi-product competition literature (e.g. Shaked and Sutton, 1987; Shaked and Sutton, 1990). A central finding in this literature is that multiproduct firms may not be equally likely to adopt a particular product, depending on their existing product portfolio (c.f. Burton, 1994).

### 2.2.1 *Firm characteristics*

The characteristics of a firm play a role in the diffusion process when they render the adoption of an innovation differently profitable across firms. Two particularly important firm characteristics investigated in relation to adoption behavior are the firm's size and market power.

#### 2.2.1.1 Firm size and speed of adoption

The notion that firm size and market power positively influence speed of adoption was first proposed by Schumpeter (1996/1942) in the context of discussing where in an economy innovation takes place. Schumpeter argued that larger resource-rich firms with market power were the prime engines of innovation in an economy. The two 'Schumpeterian hypotheses' about the relationship of innovation, firm size and market structure subsequently set the research agenda for much of the industrial organization research on innovation and diffusion (Cohen and Levin, 1989). The proposed positive relationship of firm size and innovation is based on the idea that a larger firm has greater resources to apply to innovation. With these resources follow greater opportunities for realizing economies of scale when adopting, and better chances of utilizing complementary assets in enhancing the value of adoption (Teece, 1987). Since these characteristics of large firms render adoption relatively more profitable than for smaller firms, large firms tend to adopt innovations faster<sup>7</sup>.

Empirical studies of diffusion have focused on the relationship between firm size and speed of adoption, often with contradictory findings (Geroski, 2000). Mansfield (1961) used firm size as a proxy for the availability of complementary assets as well as the ability to cope with financial risk-taking, and found support for a positive relationship between firm size and speed of adoption. Later studies also support a positive relation between firm size and speed of adoption of new technologies (Romeo, 1975; Hannan and McDowell, 1984; Pennings and Harianto, 1992), but it has been contradicted in other studies (Oster, 1982b; Levin et al. 1992). Rose and Joskow (1990) attribute some of the contradictory empirical findings to flawed research de-

---

<sup>7</sup> An opposing view is proposed by economists interested in decision making processes, who suggest that large hierarchical firms are slower to adopt due to more complex decision processes and problematic incentive structures (c.f. Kuran, 1988; Dearden et al. 1990; Fernandez and Rodrik, 1991).



signs<sup>8</sup>. When controlling for the most common research design flaws, they found strong support for a positive effect of firm size on speed of adoption. Thus, while there are divided opinions about what exactly firm size is a proxy for, most empirical evidence indicates that large firms are faster adopters than smaller firms (Cohen and Levin, 1989; Geroski, 2000).

#### 2.2.1.2 Market structure and incentives to adopt innovations

Theorized relationships between market structure and incentives to adopt innovations follow two different lines of argumentation. One argument holds that firms, when experiencing increased competitive pressure, increase their efforts to innovate and also adopt new practices more rapidly to 'keep up'. This is the reasoning behind 'competitive band-wagons' where firms imitate out of fear of losing out (Katz and Shapiro, 1987; Abrahamson and Rosenkopf, 1993). The other, empirically richer, argument suggests that firms adopt innovations more readily when they are confident of the innovation being profitable. This argument derives from Schumpeter (1996/1942) who proposed that, since innovation is normally a risky business, firms need to be compensated for the risk by gaining (temporary) market power to compensate for the gamble undertaken. Firms that are in a position to wield market power are more confident that they will be able to introduce an innovation successfully and hence the presence of market power is positively related to innovation. This proposition that ex-post (innovation) market power is an important incentive of innovative activity at firm level has become central to mainstream industrial organization and strategic management theory (c.f. Porter, 1980; Teece, 1987b; Reed and DeFillippi, 1990; Peteraf, 1993).

Market power is thus another firm characteristic, in theory, positively related to adoption speed. Again the empirical support for the proposition is mixed. Mansfield (1961) finds that the diffusion of new technologies is faster in industries with a lower degree of concentration (i.e. harboring fewer firms with market power). In his study of the diffusion of 12 innovations in four industries, tin cans diffused much faster in the highly competitive U.S. beer industry than did centralized traffic control in the less competitive (more concentrated) railroad industry. Although widely quoted, the Mansfield (1961; 1963) studies

---

<sup>8</sup> Most importantly, a sample selection bias by excluding non-adopting firms.

have been criticized for being deficient in the number of observations (Davies, 1979) as well as for comparing different innovations across industries (Hannan and McDowell, 1984). Controlling for the problem of inter-innovation comparability Hannan and McDowell (1984) investigate the adoption of Automatic Teller Machines (ATM's) by banks across the local retail banking markets in the U.S. Their findings indicate that market concentration has a positive effect on the rate of adoption. In addition, Levin et al. (1992), investigating the adoption of scanners among super-market chains in the U.S., found that large chains, in terms of local market share, were relatively early adopters. Empirical evidence thus indicates that market concentration is positively related to the speed of adoption of innovations within an industry.

#### 2.2.1.3 Some initial propositions

A central idea in economic diffusion theory is that perceived profitability drives adoption. The first proposition is thus simply:

Proposition 1: Perceived innovation profitability relates positively to product introduction speed

Following on from this proposition are a number of propositions about what drives perceived profitability. Empirical findings, although not univocally, support a positive relationship between a firm's size, market power and speed of adoption. The second proposition is then:

Proposition 2: Firm size is positively related to the speed of adoption of innovations

The theoretical argument behind proposition 2 suggests firms operating in a monopolistic environment have an easier time predicting rival reactions to innovation and thus become more confident in investing money in innovation – hence ex-ante monopolistic structures favor innovation (Schumpeter, 1996/1942). Porter (1980), in a related vein, proposes that the growth rate of a market (and hence the availability of resources for which to compete) is positively related to fast adoption as the risk of competitive retaliation is less in a more resource rich market. Hannan and McDowell (1984) show that growing markets

are more likely to lead to a need for firms to replace technology and hence increase the adoption rate. Where the market is growing both the intensity of rivalry and predictability of rivalry, along with a higher demand for substitution of capital lead firms in general to adopt innovations faster:

Proposition 3: Growth of resource base relates positively to innovation adoption

These findings support the theoretical proposition that firms exhibiting certain characteristics have a greater *incentive* to adopt quickly. To actually adopt an innovation, an action of imitation must be carried out and the success of this action may be contingent on the characteristics of the innovation.

#### 2.2.2 *Innovation characteristics*

Even if a firm has incentives to adopt an innovation, there may be differences in how difficult an innovation is to imitate. Theory and empirical research on firms' ability to imitate point to two main barriers to imitation: access to resources for imitation and the complexity of imitation.

##### 2.2.2.1 Access to resources as a barrier to imitation

A common observation is that innovators, by virtue of being first, often have preferential access to critical resources needed to commercialize the innovation (Wernerfelt, 1984). An issue for the imitator then becomes to acquire these critical resources at terms that are not worse than the innovator, in order to be able to compete with the final output. This perspective has been particularly well elaborated within the resource - based view of strategy where 'barriers to imitation' are seen as crucial to the creation of sustainable competitive advantage (Wernerfelt, 1984; Reed and DeFillippi, 1990; Peteraf, 1993). Imitation is understood as problematic due to innovation-specific barriers to imitation such as factor acquisition (Barney, 1986; Dierickx and Cool, 1989), first-mover advantages (Schmalensee, 1982; Wernerfelt, 1984; Liberman and Montgomery, 1988) or the lack of complementary assets (Teece, 1987b).

Investigating first-mover advantages in the financial industry, Tufano (1989) shows that while innovators typically do not charge higher

prices than followers, differences in market shares between innovators and followers are persistent. First-mover advantage is interpreted as deriving from steep learning curves. This steep learning curve stems from the nature of investment banking where opportunities for learning are few – so having managed one or two large mergers in a particular industry may constitute a formidable knowledge advantage in comparison with competitors. Makadok (1998) similarly investigates first-mover advantages in the U.S. market for money market mutual funds and finds persistent pricing premiums for early entrants in spite of the lack of barriers to imitation. He interprets the findings as indicative of the fact that innovators (and early adopters) are able to establish a 'resource position barrier' (Wernerfelt, 1984) by attracting the limited number of consumers that are interested in their type of product. Subsequent entrants, although not faced with direct barriers to imitation, may find it less profitable as the 'easy money' is already tied up, and attracting new investors would cost relatively more than it did for the pioneers.

A proposition from the resource-based perspective is thus:

Proposition 4: Speed of adopting an innovation is positively related to the accessibility of critical resources for the innovation

#### 2.2.2.2 Complexity as an impediment to imitation

Even where there are no barriers to imitation in the resource-based sense, imitation may still be difficult due to the complexities inherent in imitation. Lippman and Rumelt (1982) suggested that even without entry barriers, differences in the efficiency of firms would persist if there were any uncertainty as to the imitability of technology, coupled with the need to make irreversible investments to utilize the technology. Moving from the field of technological innovations to new ideas about how to do business, Schoemaker (1990) and Porter (1996) proposed that sufficiently complex strategies may yield sustainable competitive advantage to an innovator. By modeling the effect of strategic complexity (parameterized as the number of elements and their interconnection), Rivkin (2000) shows that even where there are no resource based-barriers to imitation, imitation may be difficult due to decision processes and the localized nature of search processes. Complexity of the strategy in combination with incomplete information about competitors quickly renders imitation of a strategy unlikely to

succeed. Siggelkow (2002) investigates how sets of strategies that fit well with an environment are the result of a firm-specific evolutionary process and how this contributes to difficulties for competitors in imitating even an apparently successful strategy.

From a technological perspective there are studies on the complexity of the innovation and the efficiency of patent protection. In a study of how fast new technology leaks out, Mansfield (1981) found that secrecy and lead-time was almost as efficient as patents in protecting innovations against imitation. Levin et al. (1987), surveying a large number of R&D executives, found similar support for the importance of secrecy and lead time in deterring imitation. Distinguishing the different types of knowledge according to their codifiability and visibility, Zander (1991) and Zander and Kogut (1995) found that innovations that employ less visible and codifiable knowledge are more difficult to imitate and that they are adopted at a slower rate. Similarly Szulanski (1996), investigating voluntary knowledge transfer, found that knowledge tended to be locally 'sticky' (difficult to transfer) due to a variety of organizational issues such as lack of absorptive capacity (Cohen and Levinthal, 1990) and the 'Not Invented Here' syndrome (Katz and Allen, 1982).

An innovation complexity barrier perspective thus offers the following proposition:

Proposition 5: Speed of adoption is negatively related to the complexity of an innovation.

Thus far, aspects of the firm adoption decision have been viewed from the perspective of the individual firm acting in isolation. However, firms often attempt to influence their competitive environment through strategic actions. The next section investigates theory and research on how strategic interaction in the adoption decision affects the diffusion process.

### *2.2.3 Strategic interaction*

Strategic action affects the perceived profitability of adoption by competing firms, and thus the adoption rate and adoption patterns among firms. Most commonly, the core question has been framed in terms of a market incumbent-entry problem. Potential market entrants threaten

incumbents with introducing new technology and the question is whether or not the incumbent should respond by early adoption (pre-emption) or late adoption (to avoid cannibalization) in comparison to their competitors (Reinganum, 1989).

Incumbent firms, with a dominant market position, have an incentive to adopt an innovation early, to pre-empt competitor adoption to extend their market power to a new generation of technology (Arrow, 1962; Gilbert and Newberry, 1982). If the innovation is uncertain, however, incumbents may rationally under-invest (enter late) in the new technology if it threatens to substitute (cannibalize) their existing (for the time being secure) market dominance for more uncertain market dominance in the future (Reinganum, 1983). Later theoretical refinements have differentiated between innovations that destroy or enhance existing market power. In essence it is suggested that market incumbents would have an incentive to preemption where innovations are market power enhancing but not where they cannibalize on market power (Bresnahan, 1985; Katz and Shapiro, 1987).

The following two propositions emerge from the discussion on market power and strategic interaction:

Proposition 6a: Dominant incumbent firms are fast to adopt market power supporting innovations

Proposition 6b: Dominant incumbent firms are slow to adopt market power destroying innovations

As noted in the discussion above, a decision to adopt is not only guided by incentives but also affected by a capability to do so. Drawing on findings from organizational research on incumbent response to discontinuous technological change (Tushman and Anderson, 1986; Henderson and Clark, 1990), Henderson (1993) introduces the distinction of economic and technological discontinuity of an innovation. The main point is to distinguish between the *incentive* and the *capability* to adopt early. An innovation is discontinuous, or radical, in the economic sense when it destroys market power by cannibalizing on existing sales. The innovation is incremental when it enhances the existing market power of an incumbent. The same innovation is also radical or incremental in an organizational sense, depending on whether it builds

on-, or destroys-, the existing knowledge and information processing capabilities of firms. An organizationally radical innovation is argued to be more difficult for an incumbent firm to adopt successfully due to existing set ways of processing information and using knowledge. Under the assumption that incumbent firms understand their deficient capabilities, innovations that are incremental from an economic point of view may still be subject to rational under-investment (late entry) due to lower estimates of success.

Attacking the same issue of incumbent failure, but looking at a slightly different explanation, Christensen (1993) found that having a strong customer base that did not appreciate the innovation could induce incumbent inertia too<sup>9</sup>. The argument revolves around the effect on managerial cognition of having a strong customer that influences the choice of future technologies. Tripsas and Gavetti (2000) have shown similar effects of managerial cognitive barriers to new ideas.

The impact of strategic interaction on the diffusion of innovations has not been extensively empirically researched (Reinganum, 1989). Bresnahan (1985) shows how *Xerox's* concerns with cannibalization of existing profits delayed the introduction of new technologies even when it meant a probable loss of market shares. Similarly, Ghemawat (1991) found that actors with a large market share in corporate switchboards tended to be laggards in adopting the new PBX technology for fear of cannibalizing existing sales. Henderson (1993), investigating the effects of radical and incremental changes in the photolithographic alignment equipment industry, tests the effects of the type of change on the success of incumbents to introduce and profit from an innovation. Her findings indicate that innovations which are radical, from either an economic or organizational perspective, are less likely to be successfully introduced by an incumbent and are likely to be under-invested in, whereas incremental innovations are likely to be adopted successfully early.

Further distinctions between the incentive and capability to adopt successfully (which, in a rational setting, feeds back into an adoption decision) thus provides the following propositions:

---

<sup>9</sup> The empirical study of Christensen (1997) has subsequently been criticized by Mckendrick and Haggard (2000).

Proposition 7a: Dominant incumbent firms are fast to adopt competence enhancing innovations

Proposition 7b: Dominant incumbent firms are slow to adopt competence-destroying innovations

#### *2.2.4 An economic view of diffusion in total*

The first and foremost assumption of economic diffusion theory is that firms adopt what is perceived as profitable. Perceived profitability of a given innovation may, however, differ across firms. It is often easier for large, market leading, firms to introduce new products and other innovations in a profitable manner, and they are therefore likely early adopters. In growing markets, firms are keener to introduce new products as the chances of profiting from introducing a new product are greater than in a shrinking market. When the innovation destroys existing market structures, for example by radically changing the technological or organizational base of competing, large incumbent firms are sometimes better off being late entrants.

Economic diffusion theory maintains that the quest for efficiency is the primary driver of adoption. Like much economic research, economic diffusion theory has been criticized for being 'under-socialized' (Granovetter, 1985) or 'overrational' (Strang and Macy, 2001) as it pays scant attention to the rich social fabric that channels the flow of information and the meaning a particular practice may assume for a potential adopter. The following sections on a sociological and an institutional perspective of diffusion review studies that focus on these aspects of the diffusion process.

### **2.3 A sociological perspective: follow the leader**

In contrast to the economic view of diffusion, a sociological perspective places more emphasis on the flow of information and the meanings attached to the innovation in the diffusion process. This section reviews diffusion theory and empirical findings within the broadly defined field of sociologically inspired 'macro-diffusion' studies – studies of how practices and innovations spread across firms and organizations (rather than among individuals). The diffusion process is understood as comprising two interrelated processes where actors adopt an



innovation on the merits of the innovation itself (when they receive information about the innovations), or they adopt the innovation because of the influence of earlier adopters in the community. Innovations are typically introduced by outward-looking, large actors seeking efficient solutions to problems (Damanpour, 1991; Rogers, 1995), although the pattern is moderated by the cultural understanding of the innovation (Menzel, 1960). The spread of an innovation through a community then follows social structures of information and influence, such as social proximity and the status of adopters (Katz et al. 1963; Strang and Soule, 1998).

The structure of this section follows the above line of argumentation. Starting with how new ideas are introduced into a community, the discussion proceeds to general reasoning about how the two mechanisms of diffusion (internal and external influences on adoption) are related, and ends with a more specific discussions of these mechanisms.

### *2.3.1 The leader is large and cosmopolitan*

The introduction of an innovation into a community of firms is often by a large firm, with many contacts outside the community that experiences a problem needing to be solved (Rogers, 1995). Large firms are more likely introducers of novelty as they have a wider range of activities and therefore are exposed to (and observe) more innovations than a smaller firm. Along the same lines, a large firm is also, *ceteris paribus*, more likely to experience a problem that prompts a search in any one of its activities. Since firm size is often positively correlated with the size of its resource base, large firms are also seen as more likely to venture the risk of innovating to solve their problems (Kimberly, 1981). Salient empirical findings across a large number of empirical studies by and large support an idea that large, specialized non-hierarchical firms are fast adopters of new things (Damanpour, 1991).

These findings, culled mainly from the literature on organizational innovativeness<sup>10</sup>, closely match the findings of economic diffusion studies (refer proposition 2). It is important to note, however, that there are a small number of sociological studies investigating the diffu-

---

<sup>10</sup> 'Organizational innovativeness' connotes a high propensity of an organization to adopt new ideas (c.f. Damanpour, 1991), rather than the usage in the R&D and technology management literature where organizational innovativeness means the ability of an organization to produce new ideas.

sion of innovations not considered appropriate in their social context. Early sociological and anthropological diffusion research at the individual level provides interesting examples of how the idea of a central or large innovator is changed when discussing the introduction of an innovation seen as deviant<sup>11</sup>.

Drawing on theories from cultural anthropology and sociology, Menzel (1960) found that actors centrally placed in a social network were early adopters of 'culturally legitimate' innovations whereas actors on the fringe were the first to adopt 'culturally illegitimate' innovations. His explanation for this was that the 'marginal men' were less constrained by social norms. Similarly, Becker (1970) showed that innovations of 'high adoption potential' (low on a risk and controversy index) diffused faster than did innovations of 'low adoption potential' (high risk, high controversy). The difference in speed was attributed to the difference in the path of diffusion. 'Low adoption potential' innovations were adopted first by socially marginal doctors, whereas 'high adoption potential' innovations spread first to socially central doctors. The explanation was that socially central doctors were less likely to take a high risk, adopting a 'low potential' practice than were marginal doctors. Studies into institutional and organizational change report similar findings at the organizational level. Drawing on a historical case study, Leblebici et al. (1991) suggest that most radical changes in the U.S. radio broadcasting industry emanate from actors on the periphery of the industry. The (in those days) radical idea of having advertisements pay for programming, for example, was introduced by 'unsavory characters' who could not persuade magazines to carry their dubious ads, so they bought radio stations instead to spread their messages. Similarly Kraatz and Zajac (1996) showed that failing liberal arts colleges were more likely to add an institutionally illegitimate change (vocational training programs) to their curricula than were more successful colleges.

#### 2.3.1.1 A sociological proposition on the introduction of innovations

Introduction of an innovation is normally seen as an act of a large firm seeking an efficient solution to a problem (c.f. proposition 2). However, with respect to innovations considered controversial in their context,

---

<sup>11</sup> Abrahamson and Rosekopf (1993) also investigate these phenomena in a simulation model, calling it the 'trickle-up' effect.

marginal players are often seen to take the lead (c.f. Menzel, 1960; Leblebici et al., 1991; Kraatz and Zajac, 1996). Thus:

Proposition 8a: Firm centrality is positively related to the introduction of legitimate innovations

and conversely

Proposition 8b: Firm centrality is negatively related to the introduction of illegitimate innovations

Once introduced into a community, an innovation diffuses by several mechanisms. A common way of thinking about these mechanisms is to separate adoption influences that are *internal* to the adoption community (contagion influences – the effect of seeing your neighbor adopt) from those that are *external* to the adoption community (reading about an innovation in the newspaper). The following section discusses theory and empirical findings relating to the channels of information in the diffusion process.

### 2.3.2 *Internal and external sources of information influencing diffusion*

Most empirical models of diffusion are 'mixed-influence' models including both external and internal sources of influence to understand the diffusion process (Mahajan et al. 1990; Rogers, 1995)<sup>12</sup>. Adoption influences are thus assumed to be *external* to the adoption community (those not dependent on earlier adoptions, such as media advertisements) as well as *internal* to the adoption community (the effect of seeing others adopt). The relative influence of external and internal information varies over the lifecycle of the diffusion process (Rogers, 1995). External information is initially the most important, but is eventually overtaken in importance by internal sources of information. Early adopters, prompted by efficiency concerns, are keen enough innovators to act on 'impersonal' (external) information such as media reports. Later adopters, perhaps not facing the same problems may not be motivated enough by external information to adopt, then choose to

---

<sup>12</sup> An exception would studies of diffusion processes obviously dependent on contact, such as the spread of measles or HIV.

adopt when they see other actors in their position adopt or when more information from earlier adopters is available (Brown, 1981).

In an early and influential study, Tolbert and Zucker (1983) show that early adopters of civil service reforms in the U.S. were chiefly interested in solving a problem. Later adoptions, after the reform had become institutionalized, were more indiscriminate (less specific to a problem) and seemed mainly aimed at gaining legitimacy. Similarly, Westphal et al. (1997) show that early adopters of TQM customized the practice to a higher degree than did later adopters. Their interpretation of the findings was that early adopters adopted for efficiency gains, whereas late adopters were convinced that 'it was the thing to do' to look good, even if there were no direct efficiency gains. Rao et al., (2001) provide support for this general idea but from a different angle. Investigating how the mechanism of 'social proof' (Cialdini, 1993) guides the initiation and cessation of security analyst coverage of firms in the U.S. they find that firms early in initiating coverage were less likely to cease coverage after initial disappointing results. Their interpretation is that firms that initiated coverage early did so for a calculated reason, while later firms initiated coverage because 'everyone else can not be wrong'. If the coverage turned out to be disappointing, the later adopters, with less 'reason' abandoned coverage more quickly.

One implication of the above discussion is that propositions 8a and 8b may be interpreted as suggesting that legitimate products can be efficient for established actors to adopt, whereas illegitimate products can be efficient for less established actors to adopt. The argumentation of both Leblebici et al. (1991) and Greenwood and Hinings (1996) suggest such an interpretation. As a practice is institutionalized, or becomes legitimate, the competition for necessary resources for the practice increases and it thus becomes less profitable for smaller actors to adopt the practice. A better alternative for a marginal actor in many cases is to adopt a less legitimate practice, for which the competition of relevant resources is less. Given that the importance of external and internal influences shifts over the course of a diffusion process, it is interesting to discuss in greater detail how these different sources of information may influence the diffusion process.

#### 2.3.2.1 External information – read all about it

External information sources provide two types of influence - information for the initial adoption as well as information regarding the ef-

fects of earlier adoptions (Rogers, 1995). Three main sources of external information are the media, the state and professional groups. The mass media is portrayed as the archetypal 'broad caster' of information, providing and editing information for all (Rogers, 1995). States and professional associations, on the other hand, are often portrayed as agents of change, providing information in accordance with an agenda for diffusion (Baron et al. 1986; Sutton and Dobbin, 1996). The media can be seen as spreading new ideas and practices by carrying stories of successful adoptions and the heroes and villains behind new ideas. Empirical results suggest that positive media reporting influences the diffusion process. Strang (1997) and Abrahamson and Fairchild (1999) show that media attention in general is not neutral but focuses on positive aspects early in diffusion cycles to later on shift to criticism, abetting cycles of adoption and abandonment<sup>13</sup>. Nor are individual firms just mere spectators in the media game but try to put their point across by using rhetorical tactics as well as filtering their own experiences to project success (Elsbach, 1994). Zbaracki (1998) finds that the public discourse around TQM becomes overly optimistic as managers pay heed to the prevailing rhetoric when designing their TQM programs and then filter their own experiences from implementation to project success in their particular TQM effort. With respect to the effect on diffusion processes, Burns and Wholey (1993) show that the incidence of the spread of matrix management increased with the increase in media coverage of the practice, indicating the important role of media as an external source of information. Strang and Macy (2001) show through the use of diffusion simulations that, given positive media reports, performance-seeking firms may exhibit a faddish adoption behavior of even entirely worthless innovations.

While the mass media may not be entirely neutral 'broad casters' of information, states and professional associations are seen as more purposive actors in the provision of information. States can influence the speed of diffusion of practices by providing policy and legislation that encourage or discourage the practice in question. Baron et al. (1986) show how the modern day personnel policies of U.S. firms developed from state policies, which were initially developed to cope

---

<sup>13</sup> A more cynical view of the role of the media is held by Herman and Chomsky (1994) who suggest that the media edit stories to fit their interest of 'manufacturing consent' around specific issues.

with the experience of World War II. Policy imperatives from the state are often ambiguous though, and need interpretation to become implementable. Professional associations often serve the function of interpreting policies for the adoption community (Mezias, 1990; Greenwood et al. 2002). Through their dual role situated within firms as well as being networked across organizations, professional associations are particularly suitable for the role of community level interpreters (DiMaggio and Powell, 1983; Galaskiewicz, 1985; Freidson, 1986). Their interpretations will often be in line with the advancement of their professional group in competition with other associations in society (Abbott, 1988; Lounsbury, 2002) thus providing an additional dimension of agency in the diffusion process.

For example, investigating how corporations interpret the Civil Rights Law, Edelman (1992) shows that firms construct compliance to laws in a way that signals compliance externally, while managerial interests are maintained internally. She also shows that at the level of the individual organization, the organizational politics and the existence of professional personnel administrators influence the construction of compliance. Mezias (1990), investigating how large firms deal with ambiguities in financial reporting requirements, finds that professional accountants devised and spread an understanding of how such reporting requirements should be interpreted across firms. Similarly, in a study of the development of human resource practices in large U.S. firms, Sutton and Dobbin (1996) found that human resource professionals (over)interpreted legislation on affirmative action as forceful enough to require human resource departments to deal with the issues. The likelihood of a firm interpreting these laws as important was predicted on the basis of whether or not they had a human resources department. Human resource professionals thus influenced the interpretation of the legal requirements to enhance their professional status. Additionally, Lounsbury (2002) shows that security analysts in the U.S. mutual fund industry utilized a change in the way firms competed induced by wider societal change to forward their professional position in firms and within the industry.

While external sources of information, such as the media, professions and the state, are important to the diffusion process, information also spreads within the adoption community from earlier adopters to later, potential, adopters. The next paragraphs deal with the struc-

tures that channel such information and influence within an adoption community.

### 2.3.2.2 Structures for internal information flow

Adopting an innovation most often entails taking a risk and firms try to minimize the risk by drawing on the experiences of other firms who have (or have not) adopted the innovation earlier (Haveman, 1993). External sources may provide the function of broadcasting information about earlier adoptions across adoption communities, but often the problem is not of obtaining information in general, but rather how to obtain trustworthy information (Greve, 1998). A central proposition in the literature on inter-firm contagion is that firms primarily take notice of actions by other prestigious firms that are perceived to be similar to themselves (Burt, 1987). Internal influences affecting the diffusion process are thus expected to flow along lines of perceived similarity. There are two main theoretical interpretations of how actors perceive similarity – through cohesion or through structural equivalence. The cohesion argument builds on the idea that contacts and communication lead to perceived similarity whereas structural equivalence incorporates an element of competition and social comparison in the relationship (Strang and Tuma, 1993).

#### 2.3.2.2.1 *Influence through cohesion*

At the core of the cohesion argument is the idea that interaction, or socialization, leads to the development of a common understanding of the environment. Firms that view the environment in a similar manner tend to be more influenced by the actions of each other. Interaction is, in its turn, facilitated by spatial proximity (Brown, 1981), by sharing network affiliation (Granovetter, 1973; Davis, 1991) as well as by sharing an understanding of the institutional or cultural context (DiMaggio and Powell, 1983; Strang and Meyer, 1994). Empirically, the cohesion argument has mainly been investigated with respect to the effects of social proximity or network overlaps among actors.

Hedström (1994) shows that the spread of Swedish trade unions was influenced by spatial proximity beyond the economic need for a trade union. Davis and Greve (1997) similarly show that the spread of the corporate 'poison pill'<sup>14</sup> defense against corporate take-over was through local market interaction among firms. Spatial proximity may

---

<sup>14</sup> A 'poison pill' is a legal device that renders a hostile take-over extremely costly.

also lead to avoidance of adoption when it is seen to increase competition. Greve (1996) shows that radio stations in the U.S. were less likely to imitate a change in the market position if it was undertaken by a local competitor as compared to if it was undertaken by a non-local competitor.

Proximity in a network is another core theme of cohesion research, and corporate board-interlocks have received much attention as a presumably important network link between firms. Haunschild (1993) investigates how corporate board-interlocks (sharing board members across firms) influence the action of firms. She finds that the likelihood of a firm engaging in take-over efforts increases when firms shared board members with firms that had earlier engaged in take-over efforts. Palmer et. al. (1993) show that firms that shared corporate board members with earlier adopters of the M-form of management were more likely to adopt the M-form. Davies and Greve (1997) show that firms that shared board members with firms that had adopted the 'golden parachute' compensation plan for managers<sup>15</sup> were more likely to adopt the plan themselves. Rao et. al. (2000) show how large U.S. corporations change listings from *NASDAQ* to the *NYSE* based on their membership of social reference groups. Membership in a corporate network is also a powerful channel of influence. Greve (1995; 1996) demonstrates that both the adoption and abandonment of a competitive position in the U.S. radio industry was heavily influenced by the actions of the non-local 'sibling stations' in the corporate network.

While a cohesion view of influence operates on the idea that contact between firms is important to socialization, there are other ideas about how firms influence each other more indirectly, through competition and social comparison.

#### *2.3.2.2.2 Influence through structural equivalence*

A structural equivalence argument of perceived similarity does not require direct socialization between actors, but relies on the idea of common third-party contacts, competition and social comparison. The basic mechanism proposed involves two actors who share a common third contact. If one of them adopts, the other will feel compelled to do so to avoid looking 'the laggard' in front of the third party. Intro-

---

<sup>15</sup> A 'golden parachute' is a generous deal for an executive who loses his job through re-structuring.



ducing competition into the relationship adds explanatory power to the cohesion argument with respect to what actually triggers adoption after observation (Burt, 1987). Much of the empirical evidence of structural equivalence at work is at the individual level (Strang and Tuma, 1993; Galaskiewicz and Burt, 1991), but the idea is conceptually close to cognitive strategic group theory. According to this theory, firms are seen to pay much closer attention to actors that have been constructed as competitors, or members of the 'strategic group'. Two important mechanisms behind this are social comparison and competition (Porac and Baden-Fuller, 1989). Porac et. al. (1995) illustrate the construction and effects of cognitive strategic groups in the Scottish knit-ware industry, where a certain type of technological innovation was limited to the 'low end' strategic group. Lant and Baum (1995) investigate the formation of strategic groups while Baum and Haveman (1997) investigate the competitive effects of these groups in the hotel industry on Manhattan. The findings support the idea that firms pay closer attention to other firms that have been constructed as a competitor, while downplaying the importance of firms defined as 'outside' the group.

Within a cohesive or structurally equivalent reference group not all actors are accorded the same dignity, rather firms differ in status and prestige (Burt, 1982; Podolny, 1993). The core idea is that lower - ranking social members aspire to be similar to the higher - ranking ones and thus adoptions by high-ranking members thus have a greater likelihood of being adopted (Becker, 1970). Haveman (1993) elegantly illustrates how thrifts in California, in the face of environmental turmoil, follow large and successful thrifts into new markets, despite them always suitable for the smaller ones. Similarly Burns and Wholey (1993) find that when high-status firms have adopted matrix management, others are more likely to follow suit. Podolny (1993) shows how price competition among U.S. investment banks is embedded in a status structure which ensures the stability of the market. Haunschild and Miner (1997) found that the choice of acquisition banker made by a successful firm was more likely to be imitated than the choice of a less successful firm.

These perspectives of what renders firms likely to look to each other's adoption behavior prompt the proposition:

Proposition 9: Perceived similarity with earlier adopters is positively related to the speed of adoption of an innovation

The above discussion has dealt with the structural bases for the spread of information and influence regarding innovations but not the likelihood of adoption once the information is received. In the next section, socially constructed similarities (commonly expressed as institutionalized values and norms) are discussed with respect to their role as non-structural channels of diffusion as well as influences on what innovation is adopted.

## 2.4 An institutional perspective on diffusion: institutional 'fit' and channels of diffusion

While the mechanisms of cohesion and structural equivalence both represent structural 'diffusion channels', cultural (or institutionalized) proximity is centered on the idea that firms can belong to the same reference group through a process of social construction. Strang and Meyer (1994) argue that literal social ties (such as networks or spatial proximity) do not capture all the ways diffusion influences flow among actors. They suggest the use of reference groups constructed around shared (institutionalized) categories or norms. An institutional definition of similarity provides two insights into the diffusion process. If the adoption community is homogenous, the 'fit' of a new idea with the predominant ideas becomes crucial to whether or not it will diffuse at all (Katz et. al., 1963). Not all firms will be equally concerned with the institutional environment however, and some firms will be more likely than others to break with established norms (Greenwood and Hinings, 1996). Where the adoption community is institutionally heterogeneous, institutional affiliation of firms may serve as an important 'diffusion channel', distinct from structural diffusion channels (Chaves, 1996; Soule and Zylan, 1997b).

### 2.4.1 *Institutional fit and the adoption of products – you adopt what you understand*

The idea of cultural 'fit' is theoretically well developed in institutional theory where a central proposition is that the understanding, or framing, of an innovation as appropriate and/or efficient will speed up its adoption rate (Strang and Meyer, 1994, p. 108). Starting from the point

that perceived similarity is based on theorized, or constructed, categories of the adopters, practices are likewise theorized by adopters. Theorization of practices utilizes existing cognitive schemes and ways of categorizing the environment that are present in the wider society. Over time these theorized understandings are shared across firms, at times reinforced by regulatory and normative processes, and become institutionalized (Meyer and Rowan, 1977; Scott and Meyer, 1983). Professions are particularly important in the process of theorizing, as much of what they do involves creating abstractions of organizational activity (Abbott, 1988; DiMaggio and Powell, 1983). Theorizing also means simplifying and elaborating a model of causality to understand the innovation (Greenwood et al., 2002). Simplifying an innovation treats some of the features as salient and defining and others as insignificant (Rao, 1994), a process of using analogies to what already is known, thus linking the new to existing values of what is appropriate and what is not (Leblebici et al. 1991; Haveman and Rao, 1997; Greenwood et al. 2002). A central implication is thus that innovations that are easily rationalized within existing norms will diffuse at a faster rate (Strang and Meyer, 1994), and that the process of theorization may influence the resulting diffusion process of an innovation as well as what diffuses (Czarniawska and Joerges, 1996).

There is a wide range of empirical evidence of the general effects of institutional norms on the diffusion of new practices and ideas, mainly with respect to the adoption of new organizational or administrative practices. The importance of the state in legitimizing new practices is made evident by Rowan (1982) who investigated how the legitimacy of school reform with the local government influenced its diffusion across U.S. schools. Professional groups are also important in providing legitimacy for a new practice to enable its diffusion. Tolbert and Zucker (1983) find that after professional groups concur on a positive evaluation of the civil service reform, the reform spread at a faster rate. Public debate, within the community or in society in general, is another important mechanism for conferring legitimacy on an action. Hirsch (1986) shows how the change in the language of the business community describing the practice of corporate take-over corresponded with a change in the speed of adoption of the practice. As the language surrounding corporate take-over became more positive, the speed at which firms adopted this innovation increased. Davis

and Greve (1997) show how two innovations (poison pills and golden parachutes), that were differently legitimate in the community differed in their speed of diffusion among the U.S. fortune 500 firms. Similarly Chaves (1996) demonstrates that the ordaining of women clergy in the U.S. was much more likely after 'second-wave' feminism had changed public attitudes.

Innovations in line with existing shared norms and values of an adoption community are thus more likely to be adopted quickly. However, not all firms may think that all norms are equally important to abide by. Another important aspect of the role of institutionalized ideas is thus the effect of heterogeneity among firms with respect to their institutional embeddedness.

#### *2.4.2 Institutional channels of diffusion – follow the like-minded*

Innovations that are legitimate within an organizational field are likely to diffuse faster than less legitimate innovations. Such an assertion raises a number of questions. Firstly, as suggested by Leblebici et. al. (1991) and Greenwood and Hinings (1996), concern for adhering to existing norms may vary across individual firms with some being more sensitive to 'doing the legitimate thing' than others. There might also, as they argue further, be an in-built 'dynamism' of institutions. When a practice becomes institutionalized, competition for the resources underlying the practice will increase and so will the rewards of violating the norm, inducing de-institutionalization (Oliver, 1991; Greenwood and Hinings, 1996). A second issue is the effect of multiple sources of legitimacy (D'Aunno et al. 1991). If firms have a choice among several sources of seeking legitimacy for their actions, whose legitimacy will count for the adopting firm (Zuckerman, 1999)? There are different elements of legitimacy that may be conferred by a number of sources, sometimes internally inconsistent and individual firms may differ in how and where they seek legitimacy (Deephouse, 1996; Ruef and Scott, 1998) and there may also be temporal differences in where legitimacy is sought (Thornton and Ocasio, 1999).

The above discussion outlines two main sources of heterogeneity among firms with respect to what institutionalized values they subscribe to. The first is the ambiguity of sources of legitimacy that a firm can aspire to (D'Aunno et. al., 1991; Ruef and Scott, 1998). The second issue relates to changes in institutionalized values and incentives to

break with norms (Oliver, 1991; Greenwood and Hinings, 1996). These two issues are discussed in the next two sections.

#### 2.4.2.1 Whose legitimacy matters?

The legitimacy of an action is a conferred, not an absolute, status (Suchman, 1995; Zuckermann, 1999). Where there are multiple sources of legitimacy, firms may have a choice of what source of legitimacy to aim for. Not all sources of legitimacy are equally likely to be highly valued at all times. Historically contingent 'institutional logics' contextualize the antecedents and effects of different sources of legitimacy (Thornton and Ocasio, 1999; Lounsbury, 2001). An institutional view of a firm's action in a market builds on the notion of 'organizational fields' - a set of actors that take into account the actions of each other. Actors in the organizational field try to produce a system of dominance in the field and develop a common set of values that defines their social relations (DiMaggio and Powell, 1983; Scott, 1995). Institutionalized norms, or norms taken for granted, for interaction and status enable the firms to reproduce themselves over time. A central aim of the firms in the organizational field is to survive, and they all face the threat of the effects of 'runaway' competition with price-cutting and poor survival chances. While not always successful, firms in an organizational field try to develop norms of social interaction that minimize the likelihood of destructive competition (Fligstein, 1996). From this perspective, the actions of a firm, in terms of choice of product mix, organizational form, relationship with competitors, can be understood as attempts to mitigate the possible negative effects of competition (Fligstein, 2001). These norms of competitive behavior within a field develop in the general setting of a society and a historical context. The concept of 'institutional logic' is used to connote the interconnection between higher (societal) order belief systems and lower level (local market) practices (Thornton and Ocasio, 1999). Institutions are thus seen as supraorganizational patterns of human activity, ways of ordering reality and rendering experience of time and space meaningful (Friedland and Alford, 1991). These societal influences are mediated through a prevailing institutional logic - historically contingent practices, beliefs and rules that define the way firms compete with each other and how to succeed (Fligstein and Brantley, 1992; Thornton and Ocasio, 1999). Understanding the institutional logic of an industry is essential to an appreciation of what sources of legitimacy are particu-

larly salient at that time (Fligstein, 1996; Dacin, 1997). A relevant boundary for identifying an institutional logic is the industry, as common identities and social relations of firms are constructed at this level (Porac and Baden-Fuller, 1989; Haveman and Rao, 1997).

Empirically, Haveman and Rao (1997) show how the 'moral sentiments' of a society (in their case the level of 'progressivism' in U.S. society in the early 1900's) together with technical change shaped the founding and disbanding of organizational forms in the early California thrift industry. Thornton and Ocasio (1999) examine the sources of executive power in publishing houses and find that, as the institutional logic changes from editorial (professional) to market (economic) logic, the sources of legitimacy of executive power change. According to an editorial logic, executives with a solid professional reputation were perceived as powerful, whereas according to a market logic the ability to enhance the profitability of the firm was rewarded. Ruef and Scott (1998) relate the prevailing institutional logic to the antecedents of legitimacy of hospitals in California. They show that the salience of managerial and technical forms of normative legitimacy changes across different institutional logics. Hospitals with strong managerial legitimacy do well in an environment that premieres this particular type of legitimacy, and vice versa. Antecedents of legitimacy also vary with the institutional environment. Ownership structure (profit, non-profit) mattered to the managerial legitimacy of a hospital, with non-profit hospitals experiencing a legitimacy crisis in a more strongly market-oriented environment.

At the level of the individual firm there is a particularly interesting study by Davis and Greve (1997), who investigate the mechanisms of the diffusion of two innovations of different legitimacy. They show that while a legitimate innovation (the corporate 'poison pill') spread through local market contacts, the illegitimate innovation ('golden parachute') spread through elite (board) networks. The speed of diffusion through local market contacts was higher than the spread through elite networks rendering the over-all diffusion rates to be different. Their interpretation for why the innovations spread through different diffusion mechanisms was that the adopters of the innovations drew on different sources of legitimacy for their actions. The poison pill was legitimate in the larger social context as protection against corporate raiders, hence adopters did not need to generate any 'moral legitimacy'

(Suchman, 1995) to justify their adoption. Influence from seeing other actors in their industry adopt it (providing cognitive legitimacy) was enough to induce adoption. Golden parachutes, on the other hand, were not considered legitimate in the wider social context, but rather seen as an expression of executive greed, and for a firm to adopt this innovation they needed to generate moral legitimacy. Moral legitimacy for adoption could be gained from other executives who had already adopted the practice, and thus the diffusion path for this innovation was along corporate board-interlocks, or elite networks. Chaves (1996) also provides a good example of the effects on diffusion processes of organizations aspiring to different sources of legitimacy. Investigating the spread of the ordination of women clergy in the U.S., he found that denominations sharing the same theological orientation (biblically inerrant or sacramental) both showed a lower propensity to ordain women clergy than other denominations. Chaves argues that their theological orientation is a 'cultural marker' - an indication that they share a similar interpretation of the bible which renders them less influenced by institutional pressures such as the society-wide women's rights movement. Other denominations, also aspiring to be legitimate in terms of their interpretation of the bible were quicker in ordaining women clergy.

Firms may thus differ in their 'use' of sources of legitimacy and wider social norms or institutional logics may render some sources more attractive than others. One implication for diffusion theory is that firms may thus be differently sensitive to the institutional 'fit' of an innovation. The implication is that an innovation may be legitimate with one group of firms (i.e. non-sacramental denominations) while illegitimate with another group (i.e. sacramental denominations). Apart from choosing to draw on different sources of legitimacy, firms may also face different incentives to break with norms they ascribe to. The next section discusses this issue.

#### 2.4.2.2 One 'iron-cage' fits all? - incentives to bend the bars

While institutions influence diffusion processes, they are not rules that force homogeneity on all actors. Concerns about breaking the norms may vary across firms for a variety of reasons. Early sociological studies suggest that actors that are marginal in a social setting are 'less concerned' with social norms (Menzel, 1960; Becker, 1970). In a competitive setting, concern with norms is often thought negatively related to

economic centrality with economically frail firms being less concerned about taking illegitimate action (Kraatz and Zajac, 1996). Competitive pressures as well as differences in a firm's characteristics may thus provide incentives to break the norms. The above discussion on institutional influences on diffusion center on the homogenizing effect of institutions on the adoption decisions of individual firms – where a practice is perceived as legitimate diffusion is speeded up and where it is perceived as illegitimate, diffusion is slowed down. In the face of competition, however, this logic of institutionalization of a practice may actually lead to higher competition for the resource behind this practice and thus raise incentives for breaking the norms (Leblebici et al. 1991; Palmer et al. 1993; Greenwood and Hinings, 1996).

Leblebici et. al., (1991) show that radical new practices in the U.S. radio industry tended to be adopted by competitively marginal actors seeing that competing in a legitimate fashion would be prohibitively expensive. As an example, pre-recorded radio programs were seen as illegitimate even by the government but as competition for good programmers increased, less resource-rich firms found this to be the only viable way of competing. Kraatz and Zajac (1996) showed that failing liberal arts colleges were more likely to adopt an institutionally illegitimate change (vocational training programs) to their curricula than were more successful colleges. The results were interpreted as indications that these colleges were more sensitive to efficiency rather than institutional adoption pressures due to their precarious economic situation. However, as found in both studies, adoption of illegitimate practices by marginal actors did not have the same influence on further adoptions by other actors as an adoption of a legitimate practice by a central actor would have (c.f. Burt, 1982). Leblebici et. al. (1991) and Greenwood et. al. (2002) suggest that for an illegitimate practice to take hold it must prove to be efficient to its users. Their argument is that mimicry is used for economic gain and thus an obvious imitation target is a seemingly successful practice (DiMaggio and Powell, 1983; Haveman, 1993). Davis and Greve, (1997) on the other hand, suggest that if an initially illegitimate practice can find a legitimating source (cognitive or moral), it may still diffuse even when efficiency is uncertain. Greenwood et. al. (2002) and Lounsbury (2001) elaborate further and suggest how a professional group, through their association, articulate reasons and gather legitimacy for specific organizational change. The main motivation of a



particular profession is neither mimicking earlier success nor gaining legitimacy for the firm but rather to further organizational change that advances their intra-professional status (c.f. Abbott, 1988). There are thus many reasons for breaking with existing norms – ranging from concerns of profitability to the status mobility of an organizational sub-group.

Institutional theory thus provides a theoretical framework for specifying influences on the diffusion process outside literal social relations, but based on shared norms and values. Ideas and practices that resound with this context, or institutions, diffuse fast while those that do not translate favorably languish (Strang and Meyer, 1994). Firms are, however, not impotent spectators but may choose sources of legitimacy or have incentives to break the norms, particularly when experiencing economic hardship (Kraatz and Zajac, 1996). Illegitimate practices are thus often introduced by marginal actors and as they diffuse from the periphery to the center, the diffusion is slower than when it travels the other way. Initially illegitimate innovations may thus diffuse, but most often more slowly and only after ‘proving their worth’ with the early adopters (Leblebici et. al, 1991). Firms adopting illegitimate innovations may seek legitimacy wherever it can be found, and there are normally many sources available to the firm in need, although the salience of the source is contextual (Davis and Greve, 1997; Ruef and Scott, 1998).

#### 2.4.2.3 Some institutional propositions on the diffusion of an innovation

While the review has covered studies of diffusion processes in general the propositions focus on the theory and findings related to the legitimacy of diffusing practices. There are a number of findings to indicate that controversial, or illegitimate, innovations diffuse in a different way to innovations that are non-controversial. While the main finding is that controversial innovations diffuse more slowly, if at all, current knowledge allows for more specific propositions as to the mechanisms of this difference in speed.

Once introduced into an adoption community, innovations diffuse through a number of mechanisms. These range from the flow of (external and internal) information about earlier adoptions to the likelihood of potential adopters acting on the information. The speed of diffusion is likely to differ between legitimate (fast) and illegitimate

(slow) innovations (Becker, 1970). Earlier studies suggest two different social mechanisms to explain such differences in diffusion rates between legitimate and illegitimate innovations. Burt (1982) suggests that socially marginal actors are less likely to influence other actors by their behavior, and because marginal actors are more likely than central actors to adopt illegitimate products, such products diffuse at a slower rate. This proposition is supported empirically by Leblebici et. al. (1991) who find that socially marginal firms are more likely to adopt an innovation considered illegitimate, and by Burns and Wholey (1993) and Kraatz and Zajac (1996) who find that socially marginal adopters were less likely to start adoption 'band-wagons'. Thus

Proposition 10a: Legitimate innovations spread from larger firms to smaller firms (fast diffusion)

and conversely,

Proposition 10b: Illegitimate innovations spread from smaller firms to larger firms (slow diffusion)

Another possible source of the differences in diffusion processes is suggested by Davis and Greve (1997) who found that controversial innovations diffused through other channels than non-controversial innovations since they relied on different sources of legitimacy. Hence:

Proposition 11: Market contact with earlier adopters is positively related to the adoption of legitimate innovations (drawing on cognitive legitimacy)

and

Proposition 12: Sharing an interpersonal network with an earlier adopter is positively related to the adoption of illegitimate innovations (drawing on moral legitimacy).

## 2.5 Tying the threads together

Contrasting and comparing the propositions from economic and sociological diffusion studies on the one hand provides rather different understandings of the dynamics of the adoption of new ideas. An economic view suggests that external competitive pressures and individual firm's expectations of profitability from adoption will determine adoption speed and the adoption pattern of an innovation. A sociological view suggests a picture where a firm's status, network position, inter-firm professional alliances and the cultural fit of the innovation may moderate firm level responses to competitive pressure. A point made in this dissertation is that these views, in most respects, are not contradictory but to a large extent complementary. The mechanisms of the sociological diffusion process, for example, are likely to be influenced by the profitability of an innovation – if an innovation introduced by competitors is very successful even the most die-hard opponent may succumb and adopt. Conversely, an innovation that may be economically viable may be too socially controversial for most firms to undertake. This kind of dynamic interplay between pressures on firms and groups within firms to conform to socially sanctioned roles and other pressures on the same actors to act according to economic pressures, provides an interesting field of research (Palmer et al. 1993; Kraatz and Zajac, 1996; Dobbin and Baum, 2000). This dissertation follows this tradition and aims to model adoption as a response to economic as well as institutional pressures and limitations.

The next chapter introduces the empirical setting – the market for mutual funds in Sweden. The historical development of the industry, specifically the development of the particular institution of its competitive logic, provides a basis for the propositions of this chapter, and allows the explication of a number of context-specific hypotheses from the theoretical propositions.

## The Development of a Market and the Formation of a Logic of Competition<sup>16</sup>

---

THIS CHAPTER INTRODUCES the empirical context of the dissertation—the mutual fund industry in Sweden. Central to the chapter is the thick description of how the development of a market is driven by several mechanisms, which together shape the historical context in which an individual firm takes the decision of introducing or not introducing a new product category. However, first the selection of this specific empirical context is discussed, with particular emphasis on the trade-off between a wide and a narrow firm-observation plan. Then follows a general description of the products and the firms in the chosen industry, to provide an understanding of some of the specific issues related to the product introduction decision. Following this general overview is a detailed historical account of the development of the market and the formation of institutionalized norms of competing. The implications of such norms on the product introduction behavior of firms are discussed in the following section. Finally, hypotheses are formulated by contextualizing the theoretical propositions of chapter two.

### 3.1 Choice of empirical context

As discussed in chapter two, the empirical investigation aims to study the influence of economic and institutional incentives on the product adoption behavior of firms. Industries can be categorized according to

---

<sup>16</sup> Interviews quoted in this chapter are translated from Swedish by the author. Identities of interviewees quoted are withheld, as this was a condition for many interviews. A complete list of interviews is found in appendix I to this chapter.

the degree to which exchange is driven by technical or institutional criterion for evaluating action (Scott and Meyer, 1983). Arguably, the propositions of chapter two are best tested in an empirical setting that is institutionalized as well as competitive. A large number of industries and sectors fulfil this wide criterion, providing many different ways of designing a firm sampling strategy and observation plan. The next section discusses the concerns of a suitable observation plan.

### *3.1.1 All firms in one industry or some firms in all industries?<sup>17</sup>*

Central to the design of an empirical study is the plan for which firms to include in the sample and how to observe them. While there are many different possible observation plans, they all have benefits and drawbacks with reference to specific research questions. Considering the choice of which firms to select, and how to observe these, the possible plans fall into three broad categories. The first observation plan is to choose a representative sample of firms from a large number of industries. An alternative plan is to select one industry and sample all firms in that industry – a single population census. A third alternative is to conduct a multi-population census. Each of these designs has their own merits and demerits, and the proper way to choose between them is to evaluate each design with respect to the research question at hand.

In this case, the focal empirical question is how institutional and economic incentives, respectively, influence the product adoption behavior of firms. As this is thought to be influenced by the adoption behavior of other firms, a longitudinal observation plan is essential. Furthermore, the competitive and institutional environment of the firm is also thought to influence the adoption behavior, necessitating the gathering of comprehensive data on industry-level covariates over a long period of time. While a representative sample, repeated over a long time period would have several advantages, it is not practically feasible to collect longitudinal industry-level covariates for a large number of industries. Furthermore, a design for sampling firms (as opposed to a census approach) requires some sampling criteria (such as size, age etc.) which may also be difficult to motivate with respect to the current research question. For example, excluding all the young (or old) firms from the sample is difficult to defend as there is no clear theoretical

---

<sup>17</sup> This section draws heavily on chapter 5 of Carroll and Hannan (1999).

reason to believe that the action of this specific group of firms would not influence the actions of the other firms; meaning that their exclusion would also be likely to influence the outcome of the study. The most appropriate choice is thus a single population census design.

While a single-population census approach suffers from definite limitations as to the generalizability of the findings, running the risk of capturing only an industry-specific behavior of firms, it is the preferred observation plan for this study. The main strength is the feasibility of gathering comprehensive industry-level covariate data. Choosing a single population (industry) observation plan is also useful as it controls for variations in the institutional context (c.f. Dacin, 1997; Strang and Soule, 1998). The next issue to discuss is what industry to select for a census approach.

### *3.1.2 Desirable characteristics of the industry*

When discussing the organization of societal sectors Scott and Meyer (1983) make the distinction between organizational environments that are primarily institutionalized and those that are primarily technical. Their distinction of organizational environments as institutional or technical depends on the criterion by which firms are rewarded in exchanges with each other. In a strongly technical environment, the efficiency of firms is transparent and firms are rewarded for efficiency. In an institutionalized environment, on the other hand, the link between action and outcome is often vague or poorly understood and therefore firms are rewarded not on their exact efficiency, but rather by how they fulfil the behavior that is expected of them. Examples of strongly institutionalized and strongly technical sectors suggested by Scott and Meyer (1983) are general hospitals and banks, whereas health clubs are an example of a weak/weak environment. An ideal sector for this study should be at least strongly institutionalized, and perhaps even technical.

Another related consideration in the selection of an industry is the need to control for the technical complexity of innovations. Studies of the diffusion of technical innovations show that complexity, as well as observability of the innovation is significant in how fast it is imitated (Levin et al. 1987; Cohen and Levin, 1989; Zander and Kogut, 1995). As this is a point already 'proven', and beside the main aim of this dissertation to investigate further, a suitable industry would be one where innovations are technologically simple. Nor should product innovation

and introduction be too expensive so that it takes place only a few times in the life of a firm, as this would permit little firm-level variation in the data. The final consideration in selecting an industry is data availability – most importantly the availability of longitudinal qualitative (for the institutionalization of competition) as well as quantitative (product introduction and competition) data.

### 3.1.3 *The financial sector as a candidate*

Following the categorization of organizational sectors as institutionally weak or strong by Scott and Meyer (1983), the financial sector has been selected as a candidate sector for the empirical setting. Considering the level of innovative activity (number of product introductions), the geographical position of the researcher, as well as the need for accurate longitudinal data, the choice of industry is the mutual fund industry in Sweden. There are several reasons why the mutual funds industry is particularly well suited for this research. Firstly, financial markets in general are highly institutionalized as the technical criteria for evaluation of product efficiency are vague. Even though there are 'clear' product efficiency indicators, such as historical performance, the validity of these are commonly discussed (see further section 3.4.4). The industry is also highly professionalized through the development of a corps of qualified financial analysts (c.f. Lounsbury, 2001; 2002). The competitive intensity is high, and firms attempt to be efficient in their operations (c.f. Sirri and Tufano, 1993; Levinthal and Myatt, 1994; Makadok, 1998). Furthermore, there are low, or insignificant, legal, technical or cost barriers to product imitation (Näslund, 1986; Tufano, 1989; Makadok, 1998), controlling some of the possible technical or legal reasons influencing adoption rates. Lastly, as a result of government regulations and supervision, quantitative longitudinal data on firm level activities is comprehensive and relatively accessible. The industry is also suitable with respect to the availability of qualitative data about the institutionalization of norms of competition as it is relatively 'young'. The first mutual fund was introduced in Sweden in 1958, and most of the individuals who 'invented' and developed the market are still alive and, in some cases, active today. This allows for an in-depth historical analysis of the development of the market later in this chapter.

The mutual fund industry is often categorized as a financial *service* industry in innovation studies (Silber, 1983) and in a service industry the concept of an innovation and a product differs from the 'norm' in

innovation studies – the product innovation (Barras, 1986). Therefore the next two sections deal with the nature of the mutual fund ‘product’ and the product introduction decision as seen by a manager in a mutual fund firm.

### 3.2 The mutual fund product

Simply put, a mutual fund is an investment form that enables investors to spread their risks by allowing a number of investors to pool their money (by buying shares in the mutual fund) which can then be used to purchase assets such as equity stock, bonds or other securities. A sales argument for investing in a mutual fund rather than investing directly in stocks, which has become more important over the years, is the professional management of the fund offered by specialized security analysts (c.f. Lounsbury, 2002). From the product innovation literature point of view, a mutual fund product represents a continuous service commitment to a customer, rather than the one-off transfer of a product such as a car or a stereo. Mutual funds offered in Sweden are open-end mutual funds<sup>18</sup> which means that an investor can sell their shares in the fund at their asset value, and there can be new share offerings on demand. The mutual fund is a legal entity that can (since 1991) be regulated under two different sets of rules. Either it conforms to the standard European Union *UCITS* - Undertakings for Collective Investments in Transferable Securities<sup>19</sup>, which renders the fund legal on markets within the European Union. Alternatively, the fund can be a *national* fund (in Swedish: *nationell fond*), which means that it conforms to a less restrictive set of regulations and that it is not legal to actively market the mutual fund outside Sweden. Mutual funds differ primarily in their investment objectives. Over time, a number of different investment objectives have been introduced, commonly related to either a sectoral or geographical dimension (i.e. a IT-fund or a Latin America fund) or investor risk profile. Common classification categories, in Sweden, are equity funds (investing in equity), bond funds (investing in bonds) and balanced, or mixed assets funds (investing in both equity and bonds).

---

<sup>18</sup> As opposed to closed-end funds where investors buy and sell shares of the fund like equity stock.

<sup>19</sup> These rules are similar to the U.S. Investment Company Act of 1940.



A mutual fund is a financial service that consists of four basic elements: investment management, distribution, shareholder services and fund accounting (Levinthal and Myatt, 1994). A mutual fund management firm (called mutual fund firm in this dissertation), sometimes also referred to as a 'sponsor', handles the investment management and sometimes the distribution of the mutual fund. Investment management includes the daily operation of fund asset management. Shares in the mutual fund are either distributed directly or handled through sales agreements with other distribution channels such as electronic brokers or regular stockbrokers and in some cases even by competitors. Shareholder services include the administratively challenging record keeping of shareholder transactions and can be carried out by the firm itself or it can be sub-contracted. Finally the firm needs to keep the securities and the cash of the fund in safe custody, which is a service that an external bank or trust company must perform. *Finansinspektionen* - The Swedish Financial Supervisory Authority (*FI*) - is a governmental body that supervises the operation of mutual fund firms in Sweden. All new product introductions are screened and licensed by *FI*, a procedure that can take up to six months depending on the novelty of the product as well as the current workload of the *FI*. *Finansinspektionen* also maintains complete records of all mutual funds in the market, their sponsors and their trading activities as well as their reporting to shareholders to monitor compliance with the UCITS.

With this brief background to the mutual fund product and firm, the next section provides a more detailed historical account of the development of the Swedish market for mutual funds. The aim of this historical exposé is to provide a background for the coming discussion on the development of norms of competition and how these influence the product introduction behavior of firms.

### 3.3 Initiation by imitation – a brief history of the Swedish mutual fund industry<sup>20</sup>

*Koncentra* - the first Swedish mutual fund – was started in 1958 and was modeled on what Mr. Åhlen of *Åhlen & Hohn* (a Swedish trading firm)

---

<sup>20</sup> This section draws on Carlson (1998), information from Fondbolagens Förening (the Swedish association of mutual fund firms) and interviews with most of the individuals involved in creating the market (see appendix I to this chapter for list of interviewees).

had seen during a visit to the US<sup>21</sup>. In less than 40 years, this embryonic market would develop into the largest form of private saving in Sweden. Not only did the market expand in size over these forty years, but its competitive character also changed in fundamental ways. Based on significant changes in the regulative framework of the market, the development of the market can be divided into three periods: a formative period (1958 – 1978), the period of governmental savings schemes (1978 – 1989) and the period of deregulation (1989 – 2000).

### 3.3.1 *Humble beginnings: few actors, fewer products (1958 – 1977)*

From 1958 until 1967, when *Sparbanken*<sup>22</sup> also introduced a mutual fund modeled on *Koncentra*, there was only one product on the market. At this time, there was no separate legal provision or regulation for mutual funds and they were legally constructed as non-profit foundations. There was also little conceptual clarity as to what the product should be or what the firms offering the product should do, and there were no ‘professional’ security analysts managing the funds. Consumer awareness of the new product was also limited, and consisted mainly of saving as an alternative to regular savings accounts. At the time, there were also a number of ‘investment firms’ (in Swedish ‘*investmentsbolag*’) that served a similar function by holding shares in a number of other firms and managing this portfolio ‘professionally’. In 1970 *Koncentra* was acquired by one of the four largest banks, *Handelsbanken*, changed name, and was later transformed into an Index fund<sup>23</sup>. In 1971, *Skandinaviska Banken*<sup>24</sup> joined as the third major bank with a mutual fund, also modeled on *Koncentra*<sup>25</sup>. *Enskilda Banken* became the most aggressive bank in promoting the new product among its customers, presumably because of their high number of wealthy customers in comparison to the other banks. Apart from large banks, there was one independent mutual fund firm, established in 1969, *Interfond*<sup>26</sup>. The initial period was thus more or less totally dominated by a few large banks, presumably

---

<sup>21</sup> The first open-end mutual funds were introduced in the U.S. in 1924 (Lounsbury, 2001).

<sup>22</sup> Later *FöreningsSparbanken*

<sup>23</sup> An index fund is a mutual fund that ‘passively’ follows a specific index (e.g. the AFGX or the S&P 500) in its investment decisions.

<sup>24</sup> Which later became S-E Banken and then SEB.

<sup>25</sup> A possible reason why *Enskilda Banken* was relatively late in introducing a mutual fund was the shared corporate parenthood with the then largest investment firm (*Investor*) which might have been considered a competing product.

<sup>26</sup> Interfond was subsequently acquired by *Provinsbankerna* and *Banco* in 1977

because they had access to a customer base that was interested in a relatively unknown product. All this was to change as a result of government initiatives.

### 3.3.2 *Governmental savings schemes: more actors, still few products (1978-1989)*

Mutual funds remained a marginal savings product with an almost negligible share of private savings until 1978 when the then conservative government of Sweden introduced a saving scheme where tax-incentives were given to private investors who saved in mutual funds or in a special bank account (*Skattspar* and *Skattefonder*<sup>27</sup>). One of the political objectives of the scheme was to infuse new capital into the Swedish stock market, which had been depressed for a number of years. In 1981, the market for mutual funds started to grow and in the period 1981 – 1983, the number of investors in these schemes rose from 75 000 to 750 000. One possible reason for the sudden interest is that the saving scheme became a political issue in the (1981) elections. The Social Democratic Party publicly derided the idea of tax incentives for investments in stocks and the ensuing debate widely publicized the saving scheme. In 1984, when the social democrats had come to power, they replaced the *Skattspar* and *Skattefonder* saving scheme with their own version – *Allemansspar* and *Allemansfonder*<sup>28</sup>. In essence, this was the same saving scheme but with the political sanction of both the social democrats and the largest blue-collar union in Sweden (*LandsOrganisationen*). The tax-rebated saving scheme had a stipulated monthly maximum saving per person (initially SEK 400, then SEK 600 – approximately USD 100 at the time) institutionalizing the novel concept of monthly saving in mutual funds. This new savings behavior turned out to be an administrative challenge to the mutual fund firms as many of their systems were manual or relied on rudimentary computer systems, all of which buckled under the huge increase in the number of transactions.

The nature of the market for the mutual fund firms changed in this period from catering mainly to a few, wealthy individuals to servicing a large number of smaller investors on a more regular basis. There were two main direct competitive effects of this. Firstly, the strategic value of having an extensive collection and distribution/sales

<sup>27</sup> Literally translated as 'tax-save' and 'tax-funds'.

<sup>28</sup> In line with social democratic rhetoric the names literally translate as 'everyman's save' and 'everyman's fund'.

network (i.e. local bank offices) increased dramatically during this period. Secondly, banks with a traditional customer base of less wealthy individuals - who had earlier held very limited market shares in equity trading - now gained significant market shares in the mutual fund industry. This change can be seen in the shifting market leadership of *S-E-Banken* (traditionally a bank for wealthy individuals) and *Sparbanken* (traditionally a small-saver's bank). In 1983, *S-E-Banken* held a mutual fund market share of about 35 per cent. By 1989 the market share of *S-E-Banken* had contracted to about 22 per cent - the level at which it would remain throughout the next decade. *Sparbanken* on the other hand increased their market-share during the same time period from about 22 per cent to about 32 per cent in 2000.

Competition in this second period was thus heavily influenced by government efforts to resuscitate the Swedish stock market. The manner in which it was done benefited the already large actors, in particular the banks with their large sales networks. The reason is that the specific aim of introducing small-savers to saving in mutual funds, and the limit on the size of investments rendered large-scale collection of investor money essential. This provided actors with an already existing sales and distribution network with an advantage and as it happened, these actors were the large established retail banks in Sweden. It is notable that there were no legal restrictions preventing retail banks from entering the mutual funds savings market as there were in the U.S. at that time. This is probably one reason for the early dominance of the mutual fund industry by a few large banks. The market was heavily regulated, though, and the scope of competitive action among the firms was limited<sup>29</sup>. In general, most of the products sold were *Allemansfonder* sold mainly on the tax-saving argument, and not so much on the differentiating features as compared to what was offered by other firms.

### 3.3.3 *Deregulation: many actors, many products (1989 - 2000)*

The period 1989 - 2000 was a period of extensive deregulation of the entire Swedish financial system (Niemeyer, 2000). In 1989, Swedish currency restrictions were abolished and the earlier system of a 'Switch

---

<sup>29</sup> There was, for example, a currency regulation system in place that effectively restricted product development to include only Swedish assets.

currency<sup>30</sup> was abandoned. This change opened the way for mutual funds to invest in foreign stocks without having to pay a premium for the currency to invest with. This de-regulation opened opportunities for competition through product differentiation. Aggregate product diversity data shows that the average number of product categories marketed by a firm increased rapidly from about 3 in 1989 to 8 in 2000 (Figure 2).

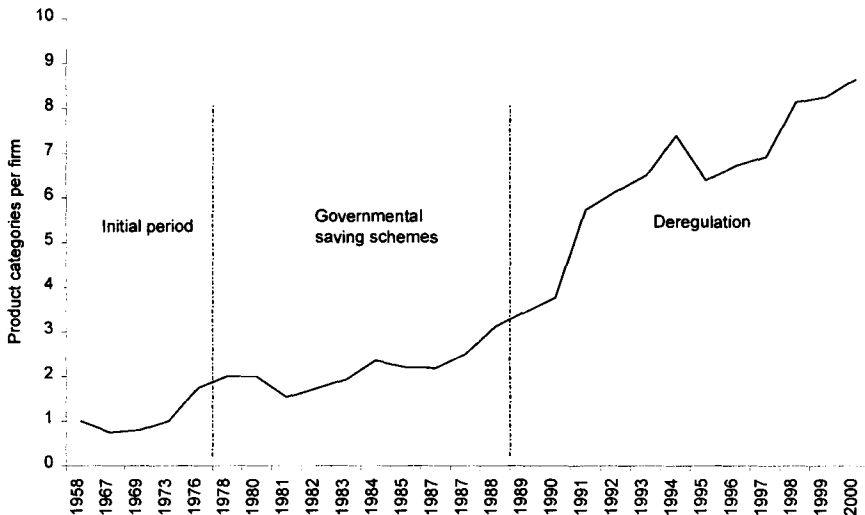


Figure 2 - Average product diversity of mutual fund firms<sup>31</sup>

In 1990, unit-linked insurance products<sup>32</sup> were regulated, which provided a boost for the market for mutual funds as many insurance holders chose mutual funds for their insurance investments. In 1994 changes in the rules for individual pension saving (*IPS*) also enabled individual pension savings to be invested in mutual funds according to individual choice under special taxation rules<sup>33</sup>. These two regulatory changes effectively merged the mutual fund direct savings market with

<sup>30</sup> A system where outflow transactions in a foreign currency was allowed only when an equivalent amount of inflow could be guaranteed, which created a secondary market where export-oriented firms could sell 'rights' to use foreign currency.

<sup>31</sup> Data source: FI and authors calculations. Note that the x-axis is broken (1958-1967).

<sup>32</sup> Unit-linked insurance products allow for the insurance holder to choose what the insurance premium should be invested in, in contrast to the traditional asset management of the insurance firm where all individual premiums are pooled.

<sup>33</sup> Under the IPS scheme, the investor can change assets within the pension plan deferring capital gains taxation until the pension is used.

the market for individual pension savings into a new market for long-term savings (Niemeyer, 2000). As a result of this deregulation, banks gained access to the insurance market and Swedish insurance firms likewise made inroads into the market for direct saving in mutual funds.

Another significant regulatory change was allowing the entry of foreign mutual fund firms to compete openly in Sweden. In 1994 the rules for foreign entry into the market were considerably eased, allowing any mutual fund firm operating within the EU to actively market mutual funds in Sweden by simply registering with the Swedish Financial Supervisory Authority (*Finansinspektionen*). This change led to the entry of a large number of foreign-based mutual fund firms in the period 1994 – 2000. Based on data on firm entries and exits from *Finansinspektionen*, Figure 3 charts the development of the total number of firms (firm density) operating in the Swedish market from 1958 – 2000. As is evident, the marked increase in firm density from 1995 onwards was primarily driven by the large inflow of foreign firms<sup>34</sup>.

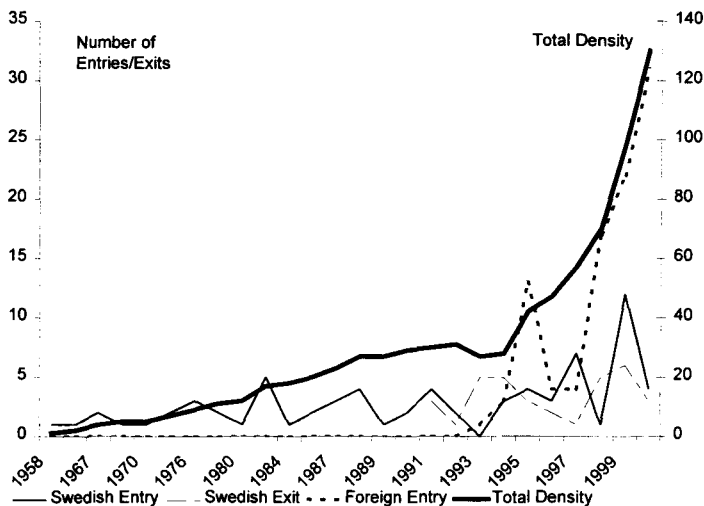


Figure 3 - Firm entry, exit and density

An interesting question is what prompted so many large global mutual fund firms to enter the (relatively small) Swedish market within a period of a few years. Two important factors were the rapid growth

<sup>34</sup> Without the entry of foreign firms there was even a dip in the firm density in 1993/1994 primarily due to mergers among Swedish firms.

of the Swedish stock market during the 1980's and the early 1990's and the planned change in the Swedish state-pension system.

### 3.3.3.1 Strong growth in the equity market driving growth of the Swedish market for mutual funds

In 1996, mutual funds became the largest form of private savings, surpassing bank deposits. From an international perspective this is noteworthy, as the same shift in saving behavior occurred only in 1997 in the U.S. (Engström, 2001). This shift was a signal to the banks that the ugly duckling, the mutual fund firm, had become a very important and profitable swan. The size of the mutual fund market is commonly defined as the total assets under management. Assets under management grew very quickly during the 1990's as a result of increased private savings in mutual funds (net savings), but more significantly as a result of the general upswing in the equity markets. Figure 4 charts the net savings in funds, the development of the stock market index (AFGX<sup>35</sup>) and the total assets under management during the 1990's. As is evident, the main growth in assets under management is not due to a large inflow of new money into the funds, but rather from the appreciation of the money already in the funds. As most of the mutual funds in the market are equity funds (as opposed to bond or money market funds), the growth of the assets under management is closely related to the growth of the equity market.

---

<sup>35</sup> AFGX – Affärsvärldens General Index tracks the development of the most traded firms on the Swedish stock market and was until recently used as the main indicator of the development of the equity market in Sweden.

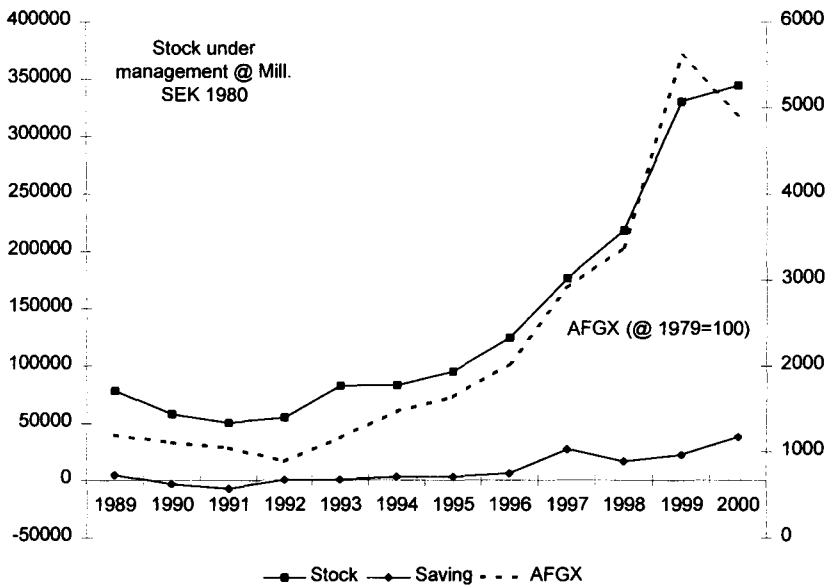


Figure 4 - Assets, net savings and the AFGX<sup>36</sup>

As a mutual fund firm primarily generates revenue by charging a management fee on the assets under its management, growth in the asset stock (through appreciation of the underlying assets) is as valuable as new inflow into its funds through net savings (new sales). Thus, in contrast to 'normal' (production) firms, a mutual fund firm can enhance its revenue either by new sales or by achieving over-performance of their existing assets (old sales) by good management. For the individual firm (including foreign firms), the growth of the mutual fund market may thus have served as a powerful incentive to enter. Looking at the resources (asset stock) available for which each firm could compete, however, provides a slightly different picture as this takes into account the number of firms competing for the asset stock at a given time. Figure 5 depicts the (deflated) total assets under management divided by the number of Swedish firms in the market and by the total number of firms in the market.

<sup>36</sup> Source: *Fond & Bank* and Niemeyer (2000)



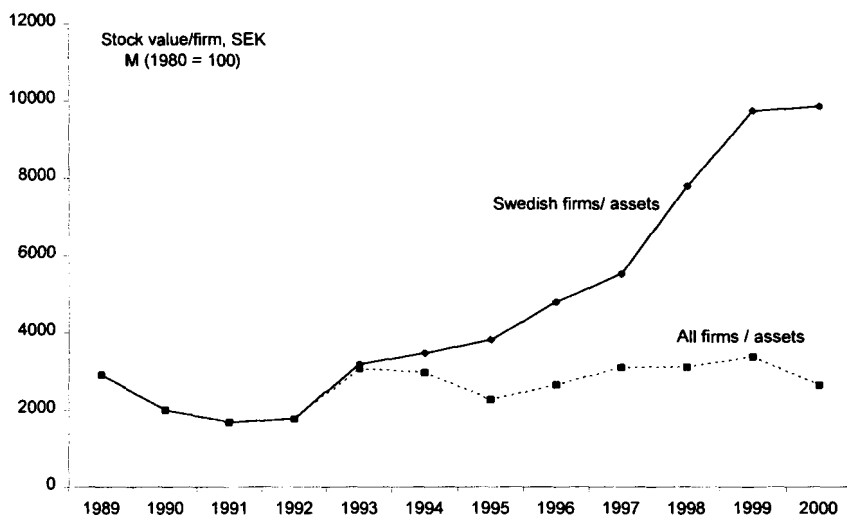


Figure 5 - Market resources per firm (SEK Million / firm @ 1980=100)<sup>37</sup>

The potential competitive effect of the large inflow of (mainly foreign) competitors in the latter half of the 1990's can be seen clearly. The asset stock calculated per the number of Swedish firms in the industry increases rapidly from 1993 through 2000, whereas the asset stock per total number of firms (including foreign firms) remains more or less stable throughout the period. However, concluding that the firms in the industry have had an equally large 'pie' to compete for during this period is not entirely correct. Current tax laws serve to 'lock-in' money invested in funds<sup>38</sup>, as it becomes costly to shift them between mutual funds. An investor who wants to move money already invested to a competitor thus has to pay a gains-tax on any gains achieved when moving the money. This means that the investor loses the compound growth effect of the share that is taxed which in effect reduces the incentive to move money between funds. The effect is, in the industry, widely understood to limit the competition for the assets already under management – an understanding also shared also by a government investigation into the future of the finance industry in Sweden (Dennis, 2000). The money available to compete freely for is thus essentially new savings. Figure 6 shows the deflated (1980=100)

<sup>37</sup> Source: *Fond & Bank, FI*

<sup>38</sup> Moving money from one mutual fund to another incurs a gains tax of approximately 30 per cent.

net savings per firm in the industry during the 1990's. While there has been an increase in the 'free money' that firms can compete for since 1990/1991, the picture is different when looking at the total asset stocks under management.

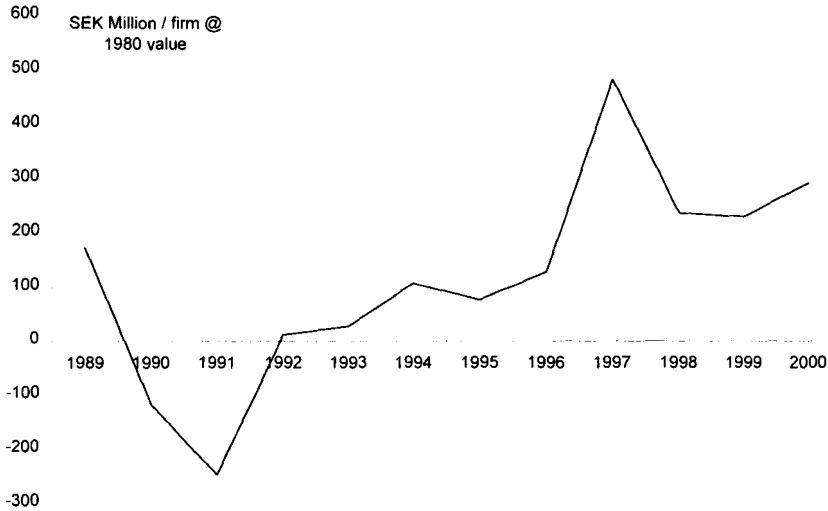


Figure 6 - Net savings per firm

### 3.3.3.2 Changing the pension system – the promise of PPS

Apart from the strong growth in the asset stock under management during the period 1993 – 1999, the Swedish government proposed as early as 1993, sweeping changes to the state-pension system. In essence the proposed change meant that individuals would annually decide on the investment of 2.5 per cent of the pension fee in the *Premiepension* (a part of the legislated pension system). The *Premiepension system* (PPS) is constructed as a special unit-linked system for pension savings, and it is managed by Premiepensions Myndigheten (PPM). Starting in 1995, the state deducted money from individual earnings to be invested through the new system. When the system finally came into effect in 2000, 4.4 million Swedes invested 57 billion SEK through the PPM. This change was long expected to be a major injection in the market and is commonly thought in the industry to have contributed to the inflow of mutual fund firms into the market. Apart from (presumably) attracting foreign actors on the market, the promise of a new mutual fund-based pension system attracted a number of smaller Swedish niche players, and the first wave of serious independent (non-bank) actors started to

appear in the market at this time. Looking at the age distribution of the firms active in the market reveals that this period was one of 'rejuvenation' where aging actors met with new competitors (Figure 7).

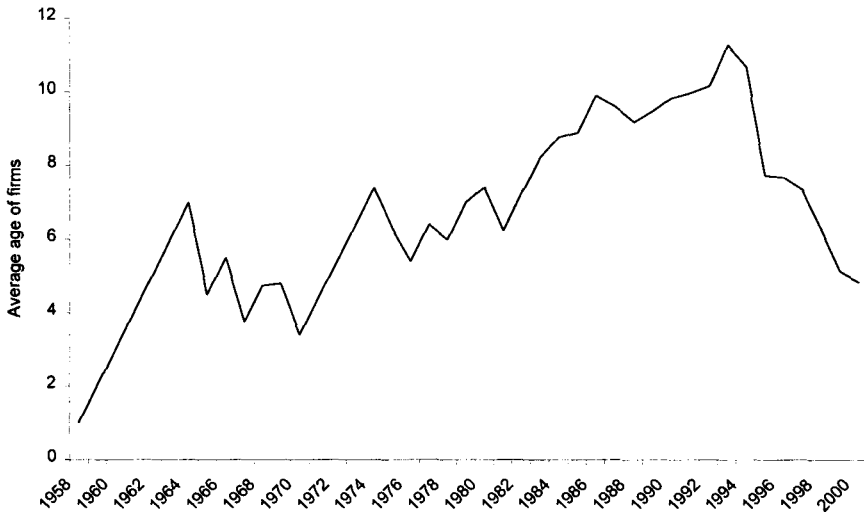


Figure 7 - Average age of firms<sup>39</sup>

The sharp drop in average age from 1994 onwards is however partly an artifact generated by the way the data was coded. Foreign firms were coded at zero age when they entered the Swedish market regardless of whether they were *Fidelity* or a young firm. But, as early as in 1993, prior to any foreign entry, the average age of firms had already started to decline.

The decade of deregulation (1989 – 2000) was thus a decade when the competition increased for the available investment money (the consumers) – resource competition grew fierce. Looking at the entire period from 1958 until 2000, the market for mutual funds developed from a more or less 'clean slate' into a complex, competitive market with over 100 active firms. This development was largely guided by changes in government regulations and a strong Swedish economy but also by influences from earlier and more developed mutual fund markets, such as that in the U.S. In this process of change, managers faced significant environmental jolts and wide-ranging changes in the societal appreciation and image of the industry. Somewhere in this turbulent

<sup>39</sup> Source: FI and authors calculations

process, managers made significant choices of how to compete – such as what the product offering is and how wide a product portfolio should be. The next section discusses in greater detail the formation of ideas of how to compete in the industry. Two primary questions are addressed: what were the norms formed, and how have these norms influenced the product introduction behavior of firms?

### 3.4 The development of norms of competition

This section asks the question what competitive norms formed in the market for mutual funds during its development? The guiding framework for the analysis is the notion of a market as a construction by firms and other actors in an organizational field (White, 1981; Fligstein, 2001). The set of interrelated norms of how to compete that define the market is perpetuated as an institutional or competitive logic (Fligstein and Brantley, 1992; Lounsbury, 2001). In the case of a market for services, such as financial services (Silber, 1983; Näslund, 1986), there are a number of special considerations important to how the market is constructed .

#### 3.4.1 *Constructing a service market*

A central idea in a construction of markets perspective as well as in strategic management is that firms do not want competition to ‘degenerate’ into a price-cutting war and therefore they need some way of coordinating their competition (Porter, 1980; Fligstein, 1996). An obvious, but not always legal, way to coordinate competition is to simply divide the market into a number of monopolistic or oligopolistic markets (Stigler, 1968). A more common way is for firms to develop strategies of differentiation, where firms segment the market in some way to minimize resource competition (Porter, 1980; White, 1981; Shaked and Sutton, 1987). Seeking to differentiate a service offering is difficult, however, because of the classic problem of marketing a service - it is difficult for the consumer to sample it (Gershuny and Miles, 1983). You cannot go for a ‘trial ride’ with a mutual fund in the way you would with a car. Arguing that a service product is qualitatively different from another product (a common point of differentiation) thus requires the discovery of an indicator of product quality that does not demand sampling the actual product.

By investigating how firms in the Swedish mutual fund market have handled the problem of threatening price competition, and how they have converged in the use of a common 'metric' of product quality, an understanding is formed of a central aspect of the competitive norms that define the market. This investigation starts by discussing current managerial ideas of the central competitive role of product introductions, in particular the perceived benefits of 'novelty'. From these ideas the development of a number of core competitive norms in the market is traced in the second section. These historically contingent norms constitute an important source and antecedent of legitimacy in the market (c.f. Ruef and Scott, 1998; Thornton and Ocasio, 1999). The third section then discusses the implications of these norms for patterns of product introductions.

### 3.4.2 *On the mutual fund 'cat-walk' - the value of novelty*

There are several strategic considerations for a manager to take into consideration in the product introduction decision – the most obvious being the optimal width of the product portfolio, where the more is not always the merrier (Burton, 1994; Barnett and Freeman, 2001). Firms in the Swedish market for mutual funds diverge on the width of their product portfolios. While some of the most profitable firms (e.g. *Brunner and Partners*) operate only a few funds, some of the large banks operate up to seventy different funds. One consideration in the choice of width of portfolio is the costs associated with managing many funds. There are direct costs, e.g. for shareholder information, but also indirect costs such as smaller economies of scale in asset management and marketing. On the other hand, a wider product portfolio may, in some instances, generate more revenues. A mutual fund firm derives the main part of its revenues from the management fee leveraged on the assets under management where a larger asset base gives higher total revenues<sup>40</sup>. Assets under management can grow by sales of new shares (new inflow of money to the fund) as well as by an appreciation in the asset value of the money already under management (appreciation of the asset stock)<sup>41</sup>. As most firms are presumably already doing their best to maximize their asset management performance (and thus

---

<sup>40</sup> Staggered fees (where the fee percentage is reduced as the fund grows) are not very common in Sweden, as opposed to in the U.S.

<sup>41</sup> Conversely, the asset stock can shrink from net outflows from the fund as well as from depreciation of the assets held by the mutual fund.

the appreciation of assets under management), a key lever for increasing revenues is new fund sales, for which new products are particularly suitable. An additional argument for product diversification from marketing literature holds that diversification is useful to achieve higher market penetration in a market, where consumer sophistication is increasing. Khorana and Servaes (1999) show that in the U.S. market for mutual funds, most of the new sales flow to products introduced in the last two years. Interviews with executives in the Swedish market show a similar awareness of the value of product novelty. Executives of two of the largest mutual fund firms (bank-owned) expressed their views as:

*"It is crucial to be an innovator in the fund market. Of our new sales, 60 per cent comes from funds that we have introduced during the year"*  
(Executive in fund management company of bank 1)

*"It struck me the other day – ours is really an entertainment industry. Soon funds and stock trading will be like sports... You must have a new fashion collection every year... of course it is about finding funds that deviate from the crowd. It is customer driven. If you do not have entertaining stuff to offer, you will have problems."*  
(Executive in fund management company of bank 2)

One reason for why new products (as opposed to old, perhaps successfully established) would generate relatively more new sales is the motivational effect on the sales personnel. Executives spoke of the need to keep the sales representatives inspired by providing 'new, exciting stories' (products) for them to sell. Consumers are seen as key in this view of why new products are important to launch as was emphasized in several of the interviews. Increasingly, sophisticated consumers request a wider variety of products, which is what the sales staff sense when they want 'exciting stories' to sell.

Managers thus consider new product introductions important to mutual fund firms for a number of reasons. But the product introduction decision is not simple and the next section draws on interview data to elucidate how firms in the Swedish mutual fund market handle the product introduction decision.

### 3.4.3 *Introducing a new product – speed and uncertainty*

The decision to introduce a new mutual fund product is one of the most important strategic tools available to the mutual fund manager, and it is also a complex decision. Unfortunately there are few studies (known to this author) of product introduction behavior in the market for mutual funds, and there are none of the Swedish market for mutual funds. Most of the research on mutual funds has been within the field of finance, with an emphasis on identifying success factors of asset management (Chevalier and Ellison, 1999; Dahlquist et al. 2000) or the ability of mutual funds to outperform the market in the long run (Ippolito, 1989; Gruber, 1996; Carhart, 1997). Khorana and Servaes (1999), however, studied the determinants of 1163 mutual fund openings in the U.S. under the period of 1979-1992. Their findings support many of the economic theory propositions forwarded in chapter two. Firstly, that firms were more likely to open new mutual funds when the investment objective size is large. This means simply that firms are more likely to imitate a fund category that they have seen to do well with earlier competitors. Secondly, firms with 'star funds' are more likely to open new funds - a behavior interpreted as leveraging a brand name. Firms are also more likely to open a new fund in conjunction with having recently already opened a fund - this was interpreted as evidence of economies of scale and scope in opening. Lastly, when one of the eight largest fund firms introduced a particular type of mutual fund, other firms were more likely to follow - a 'follow the leader' behavior. Relatedly, Rao and Drazin (2002) investigated how mutual fund firms in the U.S. market introduce new products in the face of resource constraints (in terms of access to fund managers). They found that larger firms were more likely to introduce a new product and that smaller, resource poorer, firms were likely to recruit experienced fund managers to over-come their resource constraints. Makadok (1998) on the other hand studied the existence of first-mover advantages in the money market mutual fund industry in the U.S. by investigating speed and success of imitation of product introductions. His findings indicate that an early mover gains 'resource position barriers' (Wernerfelt, 1984) in the form of access to customers that performs the function of warding off too many imitators. These two studies, however, reveal little about how the product introduction behavior relates to institutional incentives. Both of these studies start with the neo-classical assumption

that firms, when seeing a competitor introduce a product showing promise, will imitate quickly - if the *can*; whether or not the firm in question is *willing* to imitate is not an issue.

Due to the paucity of relevant studies, this dissertation adopts an inductive approach to develop an understanding of how managers deal with these issues in the industry. This section uses interviews with product managers and CEOs for most of the medium and large mutual fund firms currently active in the industry, in conjunction with secondary sources<sup>42</sup>, to build an understanding of the specific issues facing a mutual fund manager with respect to the product introduction decision. A crucial issue faced by managers is that while product introductions arguably are important, there is always uncertainty as to the future success of a new product category. A common managerial strategy of handling decisions under uncertainty is to imitate competitors (Cyert and March, 1992).

#### 3.4.3.1 Imitation to reduce uncertainty

Executives see product introductions as essential to attracting new sales, but there are questions concerning how the new product will perform. One way of alleviating uncertainty is to follow the lead of others. Earlier studies suggest imitation as a common managerial response to uncertainty (Haveman, 1993; Greve, 1998). Most of the new product introductions in the mutual fund industry are results of firms imitating each other, and most of the products that are entirely new to the Swedish market are imitations of what already exists in the financial markets of New York or London. A case in point is *Koncentra*, the first mutual fund that was modeled on a U.S. precedent. The prevalence of imitation is well illustrated in the interviews with Swedish executives. As one asset management officer expressed it:

*"Imitation is alive in this industry, enormously alive... if someone else gets a good idea it is only to go out and snatch it. You really cannot copy right very much here... in the traditional product development within this industry, the absolutely most important tool has been the Xerox machine."*

(Asset management officer in bank 3)

---

<sup>42</sup> Annual reports, the industry news letter *Fond och Bank* as well as business press from Affärsdata (an article database covering all the Swedish business press).



The historical pattern of product introductions in the Swedish market for mutual funds (Figure 8) indicates that firms, in general, are quick imitators. Most new product categories diffused rapidly through the industry, as would be expected when imitation is cheap, simple and legal. Not only are the new products technically uncomplicated, but their 'blue-prints' are actually official documents registered with the *FI*. Within five years, many new categories have been adopted by 40-50 per cent of the firms. The early adoption rates of 100 per cent simply reflect that these products defined the early market – there was only one firm with one product. Likewise a negatively sloping line (dropping percentage), does not indicate that firms are abandoning the product but rather that new firms have entered the market (raising the total number of firms) and these new firms have not been as keen on adopting the particular product category<sup>43</sup>.

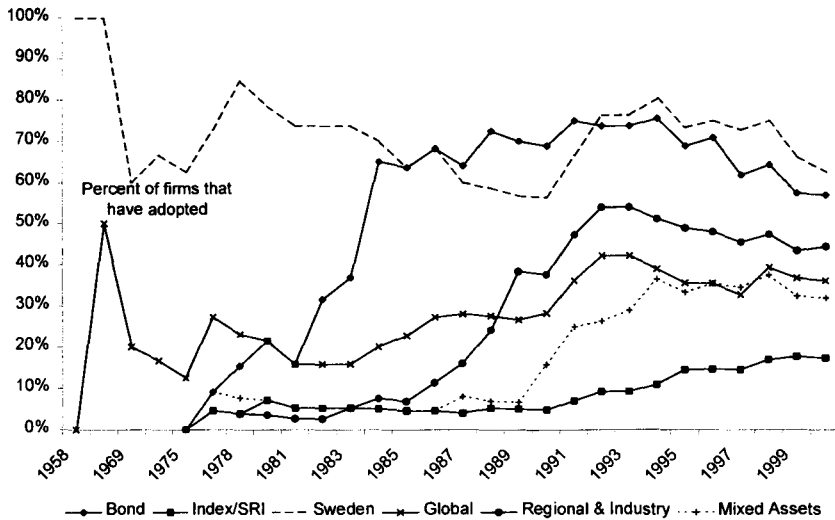


Figure 8- Adoption of new products<sup>44</sup>

Firms do not imitate each other blindly though. Perceived success of the firm as well as the product seems to matter in the decision on what and when to imitate. Khorana and Servaes (1999) report that product introductions by one of the large eight mutual fund firms in the U.S. market are more likely to be imitated by other mutual fund firms. The interpretation, in line with earlier studies, is that while imita-

<sup>43</sup> There has been no large scale abandonment of a fund category as yet.

<sup>44</sup> Source: FI and authors calculations

tion is a common strategy it is not random or blind but guided by social comparison among actors (c.f. Haveman, 1993; Greve, 1996). Cyert and March (1992) suggest that simplified 'rules of thumb' are often used as measures of perceived success. Interviews with Swedish executives show that a common rule of thumb in the industry is the asset size of a mutual fund. If the size of the fund can be expected to reach SEK 500 million (approximately USD 50 million) within a couple of years it is seen as a worth-while effort to start it. Khorana and Servaes (1999) likewise show that the asset size in the product category is highly correlated with the propensity of a firm to introduce such a mutual fund. In other words, firms are more likely to introduce mutual funds with the same investment objective as other funds that have been seen to succeed earlier (where assets are large).

The discussion thus far has focused on the product introduction decision from a current managerial perspective. A finding is that while product introductions are in general seen as an important competitive action, there are problems in knowing what product to introduce. A common managerial tactic for dealing with this issue is to imitate earlier adopters that seem to be doing well. Rapid imitation has led to a quick proliferation of products in general (see Figure 8). Product differentiation was, however, not always seen as a crucial competitive action in the Swedish market.

#### 3.4.3.2 Historical changes in the product range

As touched on in the historical background above, the first products were sold to a limited clientele, often as a substitute for regular bank-saving. As consumer awareness was limited, a wide product range was not of interest to the firms. As the product was sold mainly through the investment advisory services of the banks, there was no direct need for a well-defined 'product identity' at that time. In the second period (1978 - 1989), when the tax-rebated savings programs (*Skattspar* and *Allemansfonder*) became important drivers of the expansion of the market, firms did vary their product offerings slightly. On average, firms sold between 2 - 4 different product categories during this period (see Figure 2) - typically a Sweden fund, a money market fund and an '*Allemansfond*' (a tax-incentive product). The main selling argument was the tax-saving effect of the product, not the superior value growth of the product. It is essential to bear in mind that when these tax-break products were introduced (in the early 1980's) Sweden had very high indi-

vidual tax rates which created a particular 'tax-evasion' mentality. As one manager quipped about the attitudes in those the days:

*"... people were prepared to pay 150 SEK to avoid 100 SEK in tax"*

During this period the main selling point for banks and the other firms was the offer that investing in *Allmansfonder* (tax-break product) would lower their tax. Questions of relative product performance were not essential points of differentiation in this period. One former bank manager explained the lack of focus on performance:

*"... ten years ago there was no one who cared about whether a fund was good or bad. A fund was a fund... How does it invest? Nobody knew. It invested in equity it said in the sales material - 'oh, very good'. The fund manager was an old man in his 60s, with five years to go until retirement who sat and administered the fund and shuffled stocks back and forth. ... That is how it worked."*

(Former office manager at bank 2)

An illustrative story is how the present system of common reporting of fund *Net Asset Value*<sup>45</sup> (NAV) to the media came about. Until the early 1990's, there was scant reporting of NAV's in Swedish media. As consumers began to express a greater interest in learning about the performance of mutual funds, the business press gathered NAV values directly from the mutual fund firms. As the number of mutual fund firms grew, this system was considered too cumbersome and expensive by the media, and one of the largest business dailies even ceased providing NAV values for their readers in the mid 1990's. Presumably after strong reader reactions, the daily decided to start presenting NAV values again, but now the Association of Mutual Fund Firms (*Fondbolagensförening*) stepped in as a coordinating organization between the firms and the media. All firms that were members of the association (in practice all licensed firms) agreed to deliver daily NAV values to the association, who compiled the figures and distributed them to the media. Lounsbury and Leblebici (2002) similarly argue that early in the development of the U.S. market for mutual funds there was scarcely any attention paid to product performance. It was only after a

---

<sup>45</sup> NAV reflects the daily market value of one share of a mutual fund.

very critical high-level investigation that actors in the industry started to take performance seriously.

Apart from low consumer awareness of relative product performance during the two first historical periods, firms also did little to differentiate their products. An example of the low priority of product differentiation is the naming of the *Allemansfonder* (the tax-saving products). The two largest firms *SEB* and *FöreningsSparbanken* simply named their *Allemansfonder* by bank name and number (i.e. *SEB Allemansfond 1-7*; *Sparbankens Allemansfond I - V*). This naming convention may not, however, entirely stem from a limited interest in product differentiation. The law required an *Allemansfond* had to include the word *Allemansfond* in the name and another legal 'quirk' added to the need to multiply the number of *allemanfunds*. Ostensibly to limit the influence of the mutual fund firms, each *Allemansfond* had a maximum legal size - which had the effect of the larger banks needing to 'split up' their *Allemansfonder* as they grew in popularity. The habit of simply naming the funds *Allemansfond I - V* may thus have come from these two legal requirements and the awkwardness of giving a product a longer name than *Allemansfond V*.

Competitive product introduction behavior increased in the third period (1989 - 2000) and consumers grew more experienced and demanding. Tax benefits of the *Allemansfonder* were gradually phased out to disappear entirely in 1997. Firms increasingly needed a way to differentiate their product offerings from those of the competitors and introduced a large number of new products evident in the sharp increase (from 3 to 8) in the average product diversity of the firms (see Figure 2). At a societal level, the role of the mutual fund product in the household savings portfolio also changed during this period. From being sold primarily as an alternative to bank deposits (in the early 1990's), mutual funds were sold in the late 1990's as a cost-efficient alternative to direct equity investment. Using data from the Swedish Financial Supervisory Authority (*Sparbarometern*) on the composition of the aggregate household savings portfolio in Sweden from 1995 - 2000 Figure 9, shows the increasing importance of direct savings in mutual funds as an investment alternative.

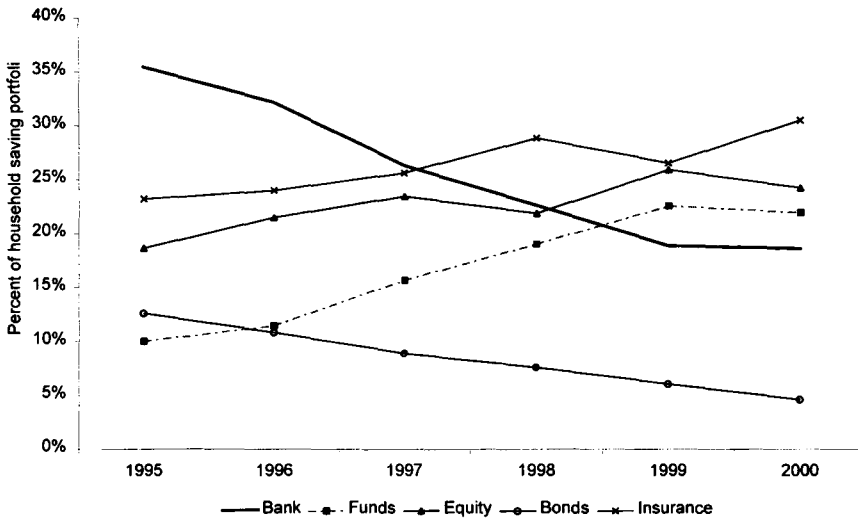


Figure 9 - Household saving portfolio

Note that the category 'insurance savings' includes mutual funds based on insurance products such as the Individual Pension Savings (IPS) and Unit-linked schemes. By 2000, according to this statistical definition, direct savings in mutual funds had overtaken direct bank deposits as the largest form of household saving in Sweden.

From the above discussion it is evident that the nature of competition in the Swedish market for mutual funds changed considerably during the third period (1989 – 2000). The change has been in line with a shift in society at large in attitudes towards investing in mutual funds, and a response to the increased number of actors in the market. Competition increasingly took on the character of new product introductions, as reflected in the currently held managerial view of the 'value of novelty'. An economic line of explanation would suggest that the sharp increase in product diversity observed in Figure 2 would be largely driven by an expanding market potential for the products. An institutional view, on the other hand, may argue for the power of the *idea* of introducing new products (a value of 'novelty') as driving (partially) the expansion. Investigating the face validity of these different lines of argument in a very coarse way, the product diversity pattern can be compared to the development of the Swedish stock market (as proxied by the *AFGX*).

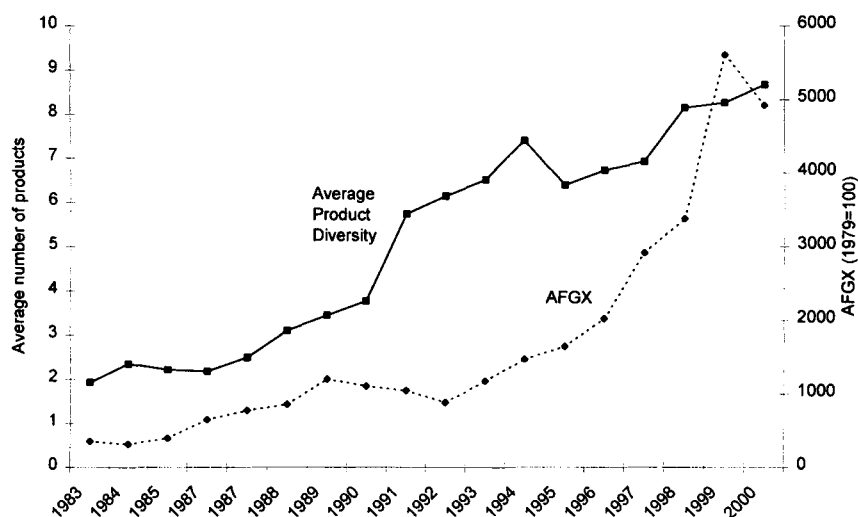


Figure 10 - Product diversity and the AFGX

As can be seen in the figure, average product diversity and AFGX develop rather closely, and it is difficult to judge from this figure if one of the curves leads and the other lags (as they are graphed against different y-axes). However, it is possible that firm managers may have been inspired by the idea of product diversification rather than the efficiency of it. The specific development of increased product proliferation is, however, not self-evident in a market where firm profit is closely related to economies of scale in marketing and asset management and the 'product' is a service. A key development underlying the notion of product diversity as a viable competitive strategy has been the construction of an indicator of 'product quality' - a point where firms can differentiate their product offering from other firms.

#### 3.4.4 *The construction of an indicator of product quality*

It is difficult to find good 'indicators' of the quality of services mainly due to the fact that they cannot be sampled (Gershuny and Miles, 1983; Normann, 1993). In the history of the Swedish market for mutual funds there have been a number of more or less successful attempts at differentiating products. When *Nordbanken*<sup>46</sup> introduced their first *Mixed assets* (or balanced) fund *Optima* they differentiated the product from earlier mutual funds by offering a wider range of more exclusive

<sup>46</sup> Now Nordea.

share-holder services (such as frequent 'investor letters' and meetings) than normal. The mixed assets funds offered today have, on the other hand, none of the 'flair' of *Optima*, and the additional service level is quite homogeneous across firms. Another dimension where firms may differentiate their offerings is with respect to price. In the early periods, mutual fund products were priced much higher than today, and in many more ways. Some firms used entry, exit and management fees to price their product; other firms used a management fee in combination with an exit fee while a few firms early on used a plain management fee. Today most firms have converged on the use of a flat management fee, differentiated between equity, mixed assets and bond funds. However, even the system of a flat management fee has been contested. In 1994, the first Swedish Hedge fund (*Zenith*) introduced the performance-based fee system, where the mutual fund firm charges a low fixed fee and then shares with the investor the return exceeding a specified rate. This pricing model has been hotly debated in the media (Svensson, 2001; DN, 2001) with representatives of some of the largest banks publicly claiming that it is too complicated to operate such a pricing system and that it would, in the end, be disadvantageous to the customer. Counter arguments have been presented that consumers should not be made to pay for bad performance. By the end of 2001 only one additional firm has adopted a performance-based fee system.

These various attempts at product differentiation can be understood against the background of firms wanting to avoid competing on price, and indications are that firms have succeeded. While the average fee level has come down significantly from the early 1980's when annual management fees of 5 per cent were not unheard of, there is limited evidence of price competition during the 1990's. Using a sample of the management fees leveraged for Swedish equity funds, (the most popular fund category in Sweden) during 1989 – 2000 shows that average fees have risen from a level of about 1.2 per cent per annum to 1.4 per cent per annum over this period. Actors in the market explain the relative price-stability by the claim that the existing fee levels in Sweden are already as low (or even lower) as they could possibly be (FT, 2001). International comparisons with mutual fund firms in the U.S.<sup>47</sup>, how-

---

<sup>47</sup> A comparison with U.S. firms may not be entirely fair though. Firms operating in the much larger U.S. market have greater scope for economies of scale and therefore should be able to maintain lower prices than firms operating in the smaller Swedish market.

ever indicate that Swedish management fees are still relatively high (DI, 1998).

Another explanation for the relative price-stability is that the firms in the industry have solved the issue of a product quality indicator and therefore can compete by product differentiation rather than on price. After initial trials, the industry converged on using the historical performance of mutual funds as an indicator of product quality. Historical performance of the mutual fund is expressed as the annual growth in relation to a chosen benchmark index. Using historical performance as a guide to product quality, although taken for granted now, is not an obvious solution and can be interpreted as a result of a process of construction of market norms in the industry (c.f. Rao, 1994). Alternative predictors of product quality, with rivaling theoretical and empirical support in literature, include trading intensity, money flow history (Ippolito, 1989; Gruber, 1996) or even the educational background of the fund manager (Chevalier and Ellison, 1999). The use of historical performance, however, provides an intuitively easy way of comparing products for both the consumers as well as for many of the industry actors. Mutual funds have developed as a savings product as an alternative to regular bank deposits and the 'quality' of a bank deposit has traditionally been measured by the historical level of interest offered. There is thus a conceptual 'link' for a consumer to measure quality of the 'new' savings product (mutual funds) in terms of historical rate of return, even though the link in reality is precarious. Also banks found historical performance convenient to use. Looking at early sales material there were actually statements made to the effect of comparing the return on the mutual fund with the interest rate paid on bank deposits during the year. It was natural for the early movers in the industry (the retail banks) to adopt historical performance as it is conceptually close to the established product quality definition (interest rate) in their core business of lending and deposits (c.f. Fligstein, 1996).

The adoption of historical performance as a signal of product quality has not passed uncontested though. There are several issues surrounding the convention of using a historical measure as a predictor of future performance - most obviously the debated correlation between the two (c.f. Carhart, 1997). While some uses of historical performance for purposes of establishing product quality have been less than serious, more caution is now generally used when claiming quality



from historical performance. After a critical investigation by the Consumer Protection Agency of Sweden (*Konsumentverket*) in 1998, the mutual fund industry association (*Fondbolagsförening*) entered a formal agreement regulating with *Konsumentverket* the use of historical performance measures in marketing mutual fund products (*Konsumentverket*, 2000). Shortly afterwards, the industry association launched an 'ethical advertisement advisory board' (Westlander, 2000) to ensure that firms comply with the agreed guidelines for advertisements.

The social construction of a 'product quality' indicator can be seen as central to the efforts of actors in the organizational field to ensure that competition did not degenerate into a price-war. There were a number of related developments in how firms, in the aggregate, chose to compete during this period of time characterized by a proliferation of new product categories. Two important developments were the emphasis on 'active management' and the concomitant professionalization of the security analyst function. The next sections discuss these developments in some detail.

#### 3.4.5 'Active management' as a norm

A key to the establishment of historical performance as an indicator of product quality is the belief in the value of 'active management', as distinct from 'passive management'. To appreciate the point of active and passive management it is necessary to diverge into a (running) debate in financial economics of the relative merits and demerits of active versus passive management (c.f. Ippolito, 1989; Gruber, 1996). In short, the main argument for *passive management* is that if financial markets are efficient, there is no way to systematically beat the market. The best an investor can hope for is to capture the general development of the market. An appropriate investment vehicle for achieving this is an index fund, a mutual fund that replicates a selected index (for example the *AFGX* or the *S&P 500*) by investing in exactly the same shares as the index specifies and with the same weightings. Such a fund needs no analysis of investment options, as it will only change the assets it holds when the index is re-weighted and consequently this mode of investment is called passive management. *Active management*, on the other hand, builds on the idea that a clever analyst/fund manager systematically can outsmart the market. The task of the fund manager of an active fund is to select assets for the fund to invest in that will increase in

value at a faster rate than the general market. Such funds are focused on their investment objectives – often in a regional dimension (e.g. a Swedish equity fund, European fund) or in an industry dimension (e.g. IT fund, a Maritime fund). The fund manager relies on analyses of regions and industries in the regions, or of firms within an industry to pick future winners. The performance of the active manager is evaluated against a relevant benchmark index, which he is expected to beat.

Discussions of the merits and demerits of active and passive management often run high. The legendary investor Warren Buffet supposedly quipped that the only people who believe in the systematic failure of the market are North Koreans and security analysts. Early reactions to the pioneering *Vanguard* index funds in the U.S. mutual fund industry even included an advertisement that index funds were ‘un-American’ as they ‘bet on mediocrity’ (Damato, 2001). On a more systematic basis, the camp of financial studies seems divided on the issue of active or passive management. Gruber (1996) finds support for the value of active management in mutual funds and Barber et. al. (2001) find that following the advice of security analysts generates above normal results. On the other hand, a number of researchers find no support for the existence of ‘hot hands’ of mutual fund managers (Ippolito, 1989; Malkiel, 1995; Carhart, 1997). To top-off the confusion, Baks et. al. (2001) conclude that from an investor’s point of view, statistical results of the under or the over performance of mutual fund managers is not sufficient to settle the question of whether or not to invest in an actively managed mutual fund.

Notwithstanding the divided evidence of the supremacy or either forms of management, active management is a norm espoused by most firms and actors in the Swedish mutual fund market. The attitude is clearly expressed in interviews with managers in the mutual fund firms. On the question of whether his firm sold index funds, the CEO of a mutual fund firm owned by a large bank opined:

*“No, we have no index funds. And I do not know if we are going to introduce them either to be honest... we are building an asset management organization to beat the index by 2-4 per cent after costs... somewhere you have to believe in what you are doing. If you believe in actively managed funds, you have to believe in that”*

(CEO mutual fund firm owned by bank 2)

Similarly, the CEO of another mutual fund firm owned by a large bank concurred:

*"I am one of those who deep down believe in actively managed funds... we believe in [this] and invest in it... What it is about, I think, we create better customer value through actively managed funds... We believe that we will reach our aim of, in the long run, beating the index... it is our absolute ambition and we invest resources in achieving it".*

(CEO mutual fund firm owned by bank 4)

One of the executives interviewed suggested that the large banks were initially driving in promoting active management as the standard way of doing things, as they already had analysts employed and the market allowed for them to charge well for such a service:

*"The Swedish fund market is young. It only really took off in 1984. It became actively managed funds because the large banks had asset managers. It became natural to do so and to charge for it. You charged 5 per cent in entrance, 2.5 in management fee and so on. There was even an exit fee. It was great"*

(CEO Mutual fund firm 2)

The Swedish media report similar attitudes about the notion of passive management. *Affärsvärlden* (one of the largest business weeklies in Sweden), argues that large banks and the rating institutes systematically ignore index funds, as they are perceived as less profitable than actively managed funds. When asked, the larger mutual fund firms explain why they do not let the customer choose between active and passive management with the standard answer:

*"We do not sell indexfunds because we believe that our active management will outperform the index"*

(AFV, 2000)

A closely related attitude is that the aim of asset management is to maximize the return. Introducing restrictions on the investment manager, such as limiting the types of firms he is allowed to invest in

through the use of socially responsible investment criteria, for example, is not seen as congruent with core values of asset management. As one manager of a medium sized mutual fund firm expressed it:

*"I think that asset management should be done to earn money. Use a part of the profit and donate. That everybody can do on their own. That is my view"*

(CEO Mutual fund firm 2)

Another CEO put it more directly:

*"My experience in these matters is that the distance between the heart and the wallet is rather long... it is easy to talk. But when push comes to shove you do want maximum return on investment..."*

(CEO fund management firm bank 1)

One CEO of a mutual fund firm recounted the difficulties in arguing for the adoption of an ethical product in a large bank:

*"... and I know that it is tough to argue for this kind of [ethical] product... I have myself participated and sat and said that the most important aspect is long term performance... 'We cannot have these limitations; exclude Ericsson - you must be out of your mind! Then we can not possibly compete with index'... There are some colleagues who have chosen not to develop ethical products, partly because they do not believe in the idea, and because it is... something that is 'not related to sound asset management'."*

(CEO Mutual fund management firm 3)

Considering that the main revenue-generating model is leveraging an asset management fee it is really not surprising that the value of active management is so deeply entrenched in the industry. If there were no value to asset management, it would not be easy to motivate to the customer why the firm should charge a fee for asset management. A norm of active management is also logical from the perspective of having historical performance of the fund as a product quality indicator. A question often raised in the press is why actors who are, individually, so certain of their superior asset management skills collectively shy away from performance-based fees. If a fund manager truly

was a superior asset manager, settling for an average fee of 1.4 per cent can at best be motivated as extreme risk-aversiveness or, perhaps, kindness of heart towards the investor.

Concomitant with the establishment of historical performance as a central product quality indicator, and the subsequent focus on active management, is the importance of the security analyst and the professionalization of a corps of security analysts.

#### 3.4.6 *The professionalization of analyst capabilities*

A natural development, concurrent to the change of selling mutual funds as no-brand tax-shields to performance branded investments to rival direct equity investing, is an increase in the competitive importance of the asset management function in the mutual fund firms. As firms are organized today, security analysts and fund managers<sup>48</sup> employed by the mutual fund firm carry out most of the asset management. In parallel with a change in the product market there has been a marked change in the professional status of security analysts in general, and in the mutual fund industry in particular.

##### 3.4.6.1 Growth of a new profession

The role of the professional security analyst in the Swedish mutual fund industry has changed significantly over time, increasing their importance to firm competitiveness as the industry has moved from a single product to a consumer product market. In the U.S., Lounsbury (2002) finds that in the shift in institutional logic from a 'trustee' to a 'market' logic in the post-war U.S. the financial market provided a window of opportunity for security analysts to improve their intra-professional status. They accomplished this by helping to institutionalize product diversification as a competitive strategy, which enhanced their importance to firms (Lounsbury, 2001). In Sweden, security analysts have similarly become organized into what can be characterized as at least a semi-profession over the past two decades. A central event in the professionalization of security analysts was the establishment of the *Swedish Association of Financial Analysts* (*Sveriges Finansanalytikers Förening - SFF*) in 1970.

---

<sup>48</sup> Although security analysts and fund managers are functionally separate in most organizations, they are treated as one professional group for the purposes of this dissertation. Their education is normally the same and most of the fund managers start their career as a security analyst.

Starting out as a small group of 23 like-minded individuals who thought there was a lack of tools and standards for analyzing the performance of firms, the association has now (by the end of year 2000) grown into an association of over 2,000 members. The association has seven standing committees for resolving various questions related to issues such as corporate valuation, valuation of immaterial assets, credit analysis and the like. Starting already in 1975, with the publication of recommendations for how earnings per share should be calculated, the association has published a large number of recommendations and method books on financial analysis and corporate evaluation. In the early 1990's, *SFF* launched the first diploma program granting the degree of a 'Certified Financial Analysts' (*CEA*). Apart from annual general body meetings the association is very active in organizing professional courses, discussions on current topics in financial analysis as well as regular interest group meetings. Most of the active security analysts, particularly with the larger firms, are members of the *SFF*.

#### 3.4.6.2 Security analysts in mutual fund firms

Far from all 2000 members of the *SFF* are employed in mutual fund firms however. Most of the security analysts employed in the finance sector either work within corporate finance or stock brokerage departments of banks or brokerage houses. During the period of extensive deregulation of the financial markets (1989 to 2000), security analysts grew very quickly as a professional group in the mutual fund industry as well as a group within each firm (see Figure 11). In 1990, there were about 100 security analysts employed in the mutual fund industry and by 1999 there were over 350. In the same period the average number of analysts employed by each mutual fund firm doubled (from 6 to 12).

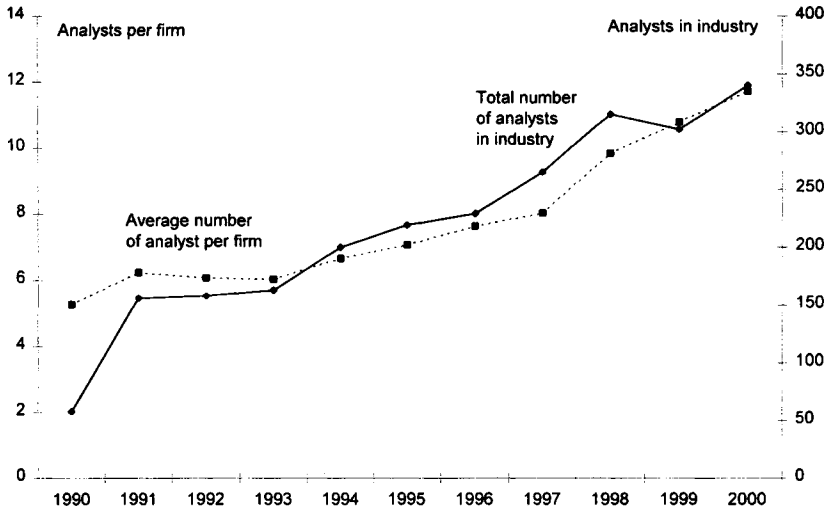


Figure 11 - Security analysts in mutual fund firms<sup>49</sup>

There were several reasons for this increase. In 1995/1996 a new law concerning the management of trust funds (in Swedish *stiftelser*) charged the asset management firm with greater responsibility for the result of management. According to industry sources this prompted a greater interest among firms to employ more analysts to ensure a higher quality of fund management. As can be seen in the above figure a number of analysts entered the industry in 1997, about the time when the implications of the new law would have become clear to industry managers. The organization of security analysts also varied across firms and over time. In the early 1990's, most of the larger firms (with other asset management assignments than mutual funds) had a separate asset management function that dealt exclusively with mutual funds. By 1999, most large firms had shifted to a model where they centralized their asset management around 'model portfolios', regardless of whether the management assignment was discretionary (for individuals and institutions) or for mutual funds. The idea of centralizing the asset management function is to reap economies of scale, and the argument is that it does not matter to a security analyst specializing in e.g. Swedish natural resource equities, whether or not the analysis is used for a discretionary or mutual fund assignment. Smaller firms, on

<sup>49</sup> Source: SFF and authors calculations

the other hand, have increasingly relied on external advisers to assist their asset management function.

The average number of analysts employed by each firm increased approximately in line with the increase in the total number of analysts in the mutual fund industry (Figure 11). This trend hides an increasing differentiation across firms in the number of analysts employed however. Plotting the average number (the horizontal line) of analysts employed and the standard deviation (the height of the vertical line) of the average number of analysts employed per firm over the 1990's, Figure 12 shows an increased differentiation in the number of analysts employed.

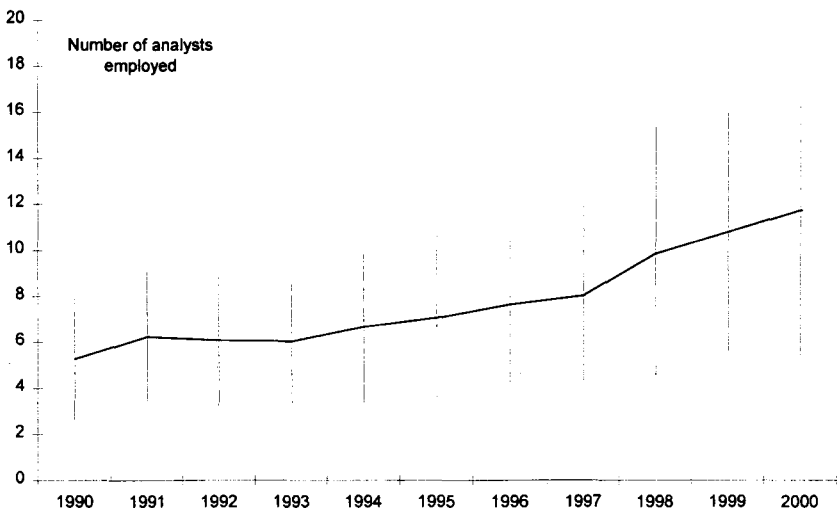


Figure 12 - Average and standard deviation of number of security analysts employed by mutual fund firms

This pattern of increased differentiation across firms in the number of analysts employed could be the effect of a number of different underlying trends. Dividing the firms into three analysts collective size groups (0 to 2, 3 to 10, 10+) and plotting the share of firms in each of these categories over time shows a pattern of an increasing number of large firms (Figure 13).



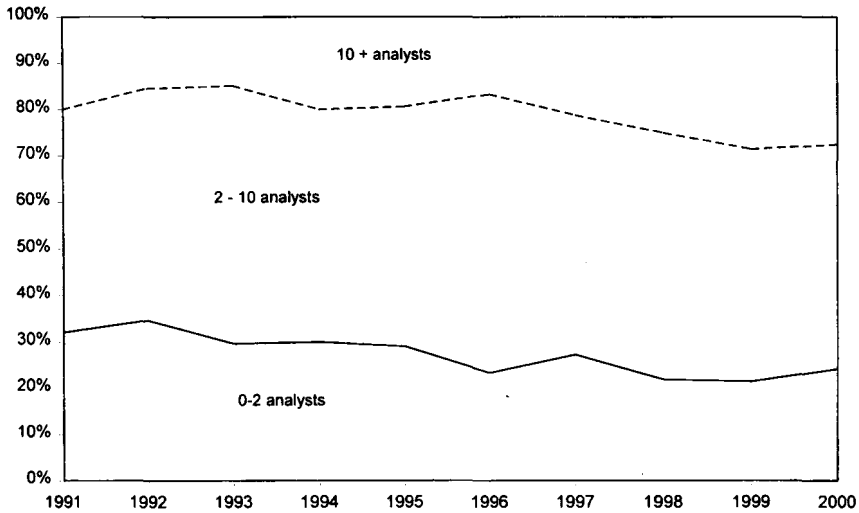


Figure 13 - Distribution of number of analysts

There are thus indications that security analysts represent a growing professional group in the mutual fund industry in Sweden. On average, firms employ a larger number of analysts in 1999 than in 1990, and there is greater variance in the average number of analysts across firms. Firms with large analyst collectives (10+) have become relatively more frequent over time (from 20 per cent to almost 30 per cent), whereas firms employing fewer than three analysts have become relatively less frequent (from 35 per cent to 25 per cent).

#### 3.4.6.3 From handicraft to a commodity – changes in security analyst work

An intriguing aspect of the increase in the average number of analysts employed by firms is that it has taken place over a time period of increasing professionalization of the industry, which often means an increasing division of labor (Abbott, 1988). Several of the executives interviewed about the organization of the asset management function, spoke about the 'commodization' of firm and industry analyses driven primarily by the large brokerage houses. Brokerage houses generate revenue from trading on behalf of other firms, for example mutual fund firms. To win trade from a large investor, a brokerage house will often provide analyses free of charge, with the understanding that if the investor decides to act on the analysis, the brokerage house will get the trade (Hägglund, 2000). As a result most of the mutual fund firms

are provided with a number of analyses, 'free of charge'. As one executive explained it:

*"... the analysis is free. The large brokerage firms keep knocking at our door. It is 'free' but you pay through their commission when you trade... an important task when you are a fund manager is to evaluate other fund managers, analysts and their organization... the analysts work a lot with evaluating other people's material."*

(Asset management executive, bank owned mutual fund firm 3)

The increasing availability of external analyses has meant that the work of a security analyst as well as a fund manager has increasingly shifted from doing the entire analysis from scratch, to largely evaluating and compiling external sources of information. At the same time, firms have invested successively more money in building up their internal analyst organizations. One explanation for this pattern could be that firms successively market a larger number of funds, and therefore need more fund managers (but not necessarily analysts). The face validity of such an explanation can be judged by plotting the number of analysts per firm divided by the number of products that the firm sells at that point in time (Figure 14).

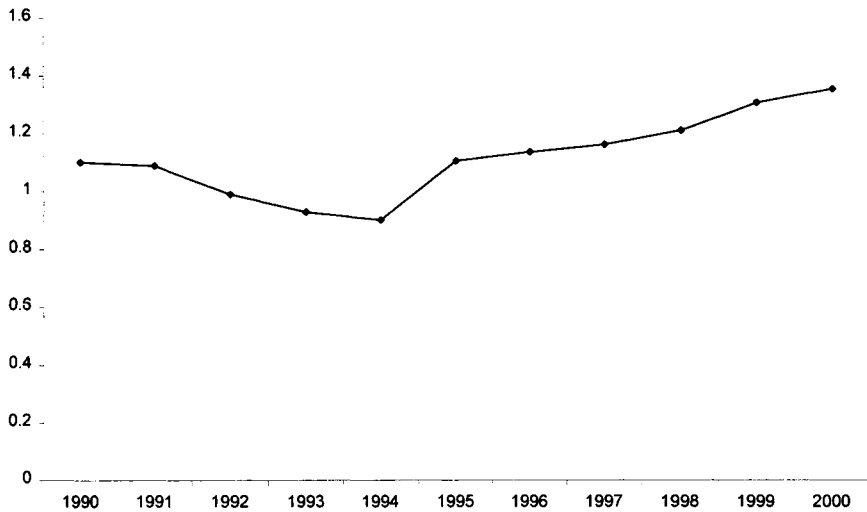


Figure 14 - Analysts per product<sup>50</sup>

Although the number of products marketed at any point in time is an estimate<sup>51</sup>, there is a clear trend towards firms becoming more 'analyst weighty' even when controlling for the number of products they market<sup>52</sup>. An explanation in line with the general reasoning of this chapter, would be that having many analysts is part of an institutionalized idea of how to compete in the Swedish market for mutual funds. Firms, in general, therefore see having analysts employed as a way of increasing their legitimacy in the organizational field.

#### 3.4.6.4 Security analysts as a community

Security analysts do not only serve as a 'resource base' for producing asset management, but also as a close-knit professional community spanning firm boundaries. Several mechanisms contribute to their shared professional identity, primarily their common formal education sustained by socialization through intensive inter-firm job-rotations and close interaction in the *SFF* (c.f. DiMaggio and Powell, 1983; Galaskiewicz, 1985). Job-rotation, for example, is frequent in the Swedish market. In the period 1991 – 2000, in a sample of 560 financial analysts 75 (14 per cent) had worked for at least one competitor during these

<sup>50</sup> Source: SFF, FI and authors calculations

<sup>51</sup> See further discussion in section 4.4.2

<sup>52</sup> Testing the significance of the difference in means (t-test, two-tailed) between the periods 1991-1995 and 1996-2000 indicates a difference significant at the 0.01 level.

ten years (author's calculations). This kind of closeness has been shown to lead to a 'single-mindset' of professionals (Galaskiewicz, 1985; Greenwood et al. 2002). One area where a shared mind-set is likely to take shape is with respect to the relative merits and demerits of different product categories as appropriate investment vehicles. Security analysts are thus in a position where they may be a 'referee' group of product legitimacy within the industry (c.f. Zuckerman, 1999; Greenwood et. al., 2002).

Over time, security analysts have forwarded their positions as a profession in the financial sector in general, and within mutual fund firms in particular. One reason for their increased importance is arguably the emphasis placed on 'active management' and fund performance as the norm of how to differentiate products, highlighting the role of security analysts. Their current role of importance in the mutual fund firm has, however, not always been self-evident.

#### 3.4.6.5 Historical development of the role of security analysts

The current centrality of mutual fund performance renders security analysts a very important resource for the mutual fund firm, and the mutual fund manager are commonly hailed as the 'stars' of the firm in the media. Such has not always been the case however. From the start of the market until the early 1990's, when consumer awareness of performance was not as high as currently, the importance of the asset management function to the firm was relatively low. Likewise, the status of the fund manager. As one former local bank branch manager expressed it:

*"When I started working there [in the bank]... to be sent to asset management was the worst that could happen. 'That poor man, he became a fund manager. My God how boring.' This was 1989. It was like, the worst. The most flashy was to trade on the exchange. To be a broker... Today it is the reverse... The most flashy is to be a fund manager... have three billion to invest and steer a fund. Earlier it was the administrators that were placed there. It was old men... who had a couple of years left until retirement."*  
(Former branch manager at bank 2)

The perceived importance of security analysts and, above all, fund managers has successively increased in the industry during the 1990's. *WTN Rating*, the largest Swedish mutual fund rating institute, in-

cludes fund manager and analyst organization personnel turnover in their prediction model for whether or not a mutual fund can be expected to maintain historical performance or not. Likewise, *Morningstar*, the international mutual fund rating firm publishes 'best analysts organization of the year' on their web site.

Most revealing of the shift in relative importance of the role of the fund manager in the industry, is how mutual fund managers have been presented in the annual reports of mutual fund firms. Take the example of *SEB*, one of the largest commercial banks and mutual fund firms in Sweden. They were among the first to introduce information about fund managers in their annual reports. In the following three pages<sup>53</sup> there are examples of how their presentation of analysts and mutual fund managers changed over time. In 1992 (Figure 15), not even the name of the fund manager responsible for the particular fund appeared in the annual report. A mutual fund was the product of 'the firm', in this case the *SEB*. In 1996 (Figure 16), *SEB* was one of the first firms to present the fund manager with a photograph and a short bio-data alongside the general fund description and data, detailing the experience of the fund manager. By 1999 (Figure 17) there is extensive information regarding the individual fund managers (education, work-history, AFA certification etc.), the asset management organization and even the asset management philosophy espoused by the organization. This pattern, where the importance of the individual fund manager and analysts increases in the late 1990's, is common to all of the mutual fund firms in Sweden. Some of the firms were as early as *SEB* in providing detailed information, but most of the firms were even later.

---

<sup>53</sup> Provided by the kind permission of *SEB*.

Figure 15 - Mutual fund managers in annual reports in 1992

## S-E-Bankens Utlandsfond

Fondens andelsvärde har med utdelningen inräknad ökat med 20,6% under 1992. Det fjärde kvartalet steg andelsvärdet med 35,3%. Morgan Stanleys Världsindeks avancerade under motsvarande perioder med 18,5% respektive 32,2% i svenska kronor. Försvagningen av den svenska kronan förklarar cirka hälften av värdestegringen under året.

Utdelning lämnades den 15 december med 9,52 kr per andel. Utdelningen återinvesterades i nya andelar efter avdrag för preliminärskatt.

### Valutautvecklingen i centrum

Det är framför allt den internationella valutautvecklingen som stått i centrum för aktiemarknadernas intresse det gångna året. I september bröt en rejäl höststorm ut inom det europeiska valutasamarbetet, ERM, vilket bland annat resulterade i att brittiska pundet och italienska liran lämnade ERM samtidigt som spanska pesetan devalverades med 5%. Problemen fortsatte under fjärde kvartalet med en ny nedskrivning av pesetan och en nedjustering av portugisiska escudon och isländska kronan. Dessutom tvingades såväl den svenska som norska centralbanken att släppa den fasta växelkurspolitiken, då det ansågs bli oförsvarligt dyrt att stå emot spekulationsvägen mot de två valutorna. Sedan november och december flyter både den svenska och norska kronan fritt, d v s värdet styrs av utbud och efterfrågan på marknaden.

Riksbankschefen Bengt Dennis beslut den 19 november medförde att den svenska kronan föll med 18% mot USA-dollar, 16% mot tyska marken och 18% mot japanska yenen fram till och med årsskiftet. Kronans fall innebär att när utländska tillgångar räknas om till svenska kronor uppstår en positiv omräkningseffekt jämfört med läget före den 19 november.

### Presidentvalet hade liten påverkan på börsen

Bill Clintons väntade seger i det amerikanska presidentvalet hade liten påverkan på aktiekurserna. Från valdagen i november fram till årsskiftet gick S&P 500 index upp med måttliga 5,7%, och detta trots att perioden bjöd på flera positiva makroekonomiska siffror som tyder på att konjunkturvändningen äntligen är i gång i USA. Enligt våra beräkningar in-tecknar dock dagens kursnivå redan en viss konjunkturuppgång. Eftersom det ännu är för tidigt att justera upp tillväxtprognoserna för 1993-94 finns det inte heller någon anledning för börskurserna att ta stora glädjeskutt. Vid årsskiftet motsvarade utlandsfondens andel på den amerikanska börsen ungefär marknads vikt i världsindex.

### Få ändringar på bolagsnivå

Den bekräftade konjunkturvändningen i USA har dock föranlett vissa förändringar bland innehaven i fonden. Bland annat har vi beslutat att investera i detaljisterna

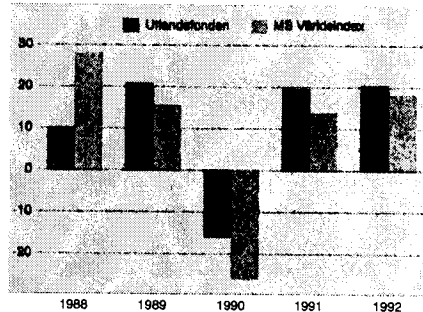
fortsättning på sid 23

### Placeringsinriktning

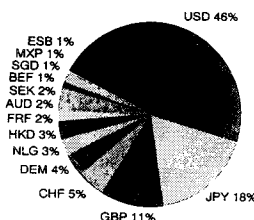
*Fonden placerar i aktier över hela världen, utom i Sverige. Fonden placerar huvudsakligen i kända internationella företag och har genom sin breda placeringsinriktning en stor riskspridning. Fonden skall normalt vara fullmösterad och endast ha transaktionslikviditet.*

*Utdelning sker i form av nya fondandelar i december året efter räkenskapsåret.*

### Andelsvärdets utveckling, %



### Fondförmögenhetens fördelning

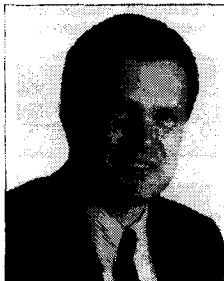


### Större nettoförändringar i portföljen

Värdepapper	Boden årsresultat Andel/nom	Mill	Värdet 4:e kvartalet Andel/nom	Mill
Köpt				
Puff Nabeob	400 000	25,5		
BÅN				
Ereksids Inter-	70 000	45,4		
national Bond	400 000	30,0		
Esambles	80 000	29,8		
Nike	600 000	25,4	26 900	20,2
Unigut	30 000	27,6		
West Disney	400 000	27,2		
Singapore Airlines	20 000	27,6		
Merck	666 800	23,6		
Development Bank	180 000	23,4		
of Singapore				
Mexico Fund				

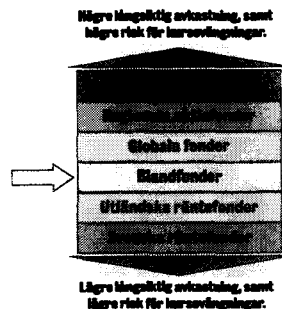
Figure 16 - Mutual fund managers in annual reports in 1996

## S-E-BANKENS VÄRLDENFOND



Ansvarig portföljförvaltare:  
**Hans Danielsson**

Ålder: 42 år  
Ansvarsområde: Internationella aktier  
Anställd sedan: 1993  
Arbetat i branschen: 14 år  
Stationerad i: Stockholm

**Placeringsinriktning**

Fonden placerar över hela världen i aktier och aktierelaterade värdepapper i olika branscher samt i räntebärande värdepapper. I ett normalläge skall 70 procent placeras i aktier och 30 procent i räntebärande värdepapper. Aktieplaceringarna skall i ett normalläge väga jämnt mellan Sverige och övriga världen, medan de räntebärande placeringarna har en övervikt i Sverige. Fonden kan utnyttja optioner och terminskontrakt, samt ingå sk swapavtal.

Utdelningen sker i form av nya andelar i juni, året efter räkenskapsåret. På särskild begäran lämnas utdelningen kontant.

**Fondfakta**

Startår	1990
Startkurs (SEK)	10,00
Andelsvärde per 30 juni 1996 (SEK)	11,31
Fondförmögenhet per 30 juni 1996 (MSEK)	5 959,4
Utveckling i % sedan 1 januari 1996	8,6
Utdelningsbelopp per andel (SEK)	0,241085
Utdelningsdatum	14 juni 1996
Omsättningshastighet	0,89
Kurtage, totalt (KSEK)	6 070,4
Tracking risk i %	2,1
Jämförelseindex	Veckans Affärers Totalindex (35%), MSCI World (35%), Salomon WGBI-10 (9%), Stockholms Fondbörs Obligationsindex, Alla Totalt (21%)
Index = 100	December 1990

Fondens samtliga placeringar finns på sid 86.

**Fondens utveckling sedan 1992**

31 dec år	Fondförmö- genhet Mkr	Andelsvärde kr	Andelsvärde förändr %	Jfr index förändr %	Utdelat kr/andel
1992	533,2	12,58	+20,1	+12,4	0,24
1993	1 650,8	16,72	+34,8	+41,1	0,23
1994	2 381,5	15,28	- 4,9	- 1,7	0,62
1995	5 221,3	10,64	+14,7	+12,9	0,11
1996**	5 959,4	11,31	+8,6	+7,9	0,24

\* Utdelningen återlagd

\*\* Per den 30 juni antal utdelande andelar 526 836 074

Fondens utveckling före den 19 maj 1995 avser fonden Aktiv Världen

**Större förändringar i portföljen**

Finansiella instrument	Andel av fondförmögenheten i % 951231	960630	Förändring
Western Mining	0,1	0,8	+0,7
Alcan Aluminium	0,2	0,8	+0,6
News Corp	0,2	0,7	+0,5
Scania	0,0	0,5	+0,5
Allstate Corp	0,0	0,4	+0,4
Svenska Staten	16,4	9,3	-7,1
Skandia	1,2	0,0	- 1,2
Skanska	2,4	1,9	- 0,5
Compaq Computer	0,4	0,0	- 0,4
Aoyama Trading	0,4	0,0	- 0,4

Fonden ombildades den 19 maj 1995 genom sammanläggning av SEB Världen, Aktiv Världen och S-E-Bankens Globala Stiftelsefond. Fonden fick då en ny kurs på 10,00 kronor.

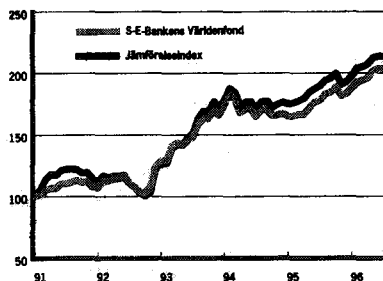
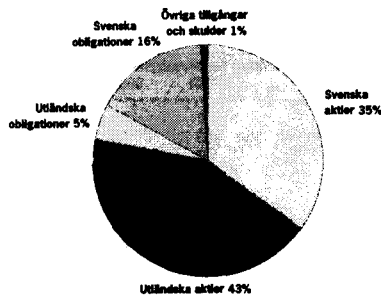
**Andelsvärdets utveckling i %****Fondförmögenhetens fördelning**

Figure 17 - Mutual fund managers in annual reports in 1999

# Det är vi som förvaltar



**Hans A Bale**  
Född: 1965  
Ansvarsområde: Norge  
Anställd: 1998  
Arbetat i branschen: 7 år  
Arbetat med förvaltning: 2 år  
Stationerad i: Oslo



**Carina Björck**  
Född: 1967  
Ansvarsområde: Miljöfonder  
Anställd: 1986  
Arbetat i branschen: 12 år  
Arbetat med förvaltning: 7 år  
Stationerad i: Stockholm



**Perne Bolander**  
Född: 1968  
Ansvarsområde: Utländska  
placeringar  
Anställd: 1998  
Arbetat i branschen: 4 år  
Arbetat med förvaltning: 4 år  
Stationerad i: Stockholm



**Christine Brentani**  
Född: 1962  
Ansvarsområde: Latinamerika  
Anställd: 1996  
Arbetat i branschen: 15 år  
Arbetat med förvaltning: 5 år  
Stationerad i: London



**Fredrik Buch\***  
Född: 1954  
Ansvarsområde: Läkemedelsbranschen  
Anställd: 1997  
Arbetat i läkemedelsbranschen: 11 år  
Arbetat med förvaltning: 3 år  
Stationerad i: Stockholm



**Björn Danckwardt-Lillieström**  
Född: 1968  
Ansvarsområde: Mått  
Anställd: 1998  
Arbetat i branschen: 13 år  
Arbetat med förvaltning: 6 år  
Stationerad i: Stockholm

\*Ny områdesansvarig från 01-01-99: Henrietta Theorell



**Kent Eriksson**  
Född: 1960  
Ansvarsområde: Schweiz/  
Europeiska småbolag  
Anställd: 1994  
Arbetat i branschen: 15 år  
Arbetat med förvaltning: 8 år  
Stationerad i: Stockholm



**Tina Forsgren**  
Född: 1966  
Ansvarsområde: Europa  
Anställd: 1996  
Arbetat i branschen: 13 år  
Arbetat med förvaltning: 12 år  
Stationerad i: London



**Peter Furnes**  
Född: 1968  
Ansvarsområde:  
Kortin riktlinjer och placeringar  
Anställd: 1999  
Arbetat i branschen: 9 år  
Arbetat med förvaltning: 9 år  
Stationerad i: Oslo



Over time, in particular during the 1990's, the importance of security analysts as a profession in the financial services industry has grown stronger. This trend is also reflected in the mutual fund firms, which have become more 'analyst weighty' over time. The status of the security analyst and the fund manager has improved within the mutual fund firm, as evidenced by interviews and an inspection of annual reports from the relevant time period. These developments taken together can be interpreted as partially an outcome of, and partially a driver behind, the increased attention to product performance as defining product quality in the industry.

#### 3.4.6.6 External influences on the shaping of the Swedish mutual fund industry

Although the flavor of the analysis thus far has been distinctly constructivist, in the sense that active management and the role of security analysts are seen as not inevitable outcomes of the development of the market, it is not argued that the Swedish market developed from a totally 'clean slate'. While the focus of this dissertation has been on the Swedish mutual fund market, and the main drivers of market construction investigated have been Swedish, other influences have certainly played a great role. Primarily the U.S. market, being large and early in its development, has definitely served as a 'role model' for many of the actors in the market. For example, the descriptions of Lounsbury (2001; 2002a) of how the shift in the market logic and the change in the perceived importance of security analysts matched closely the developments observed in Sweden. It is naturally an issue open for debate whether or not such similarities are a reflection of markets converging toward some 'efficient' organizational solution, or whether there were mimetic processes in action. Interviews indicate that actions in the U.S. market have been mimicked in Sweden, particularly by several of the larger firms that have subsidiaries in New York. However, even if the U.S. was an important role model, the actual market structure outcomes observed in Sweden are not direct imitations, but rather 'translations' of ideas (c.f. Orru et al. 1991; Czarniawska and Joerges, 1996). The Swedish regulatory context, for example, is different – allowing banks to compete freely in both asset management and retail banking as well as instituting the *Allemansfonder* (the tax-break fund). These two idiosyncracities are, arguably, important

factors explaining why Swedish banks today control about 85 per cent of the market.

Actors external to the industry have, over the course of time, provided cognitive legitimacy to the norms and have supported their institutionalization. The next section turns to the role of the media and rating agencies as providing legitimacy for the norm of active management in the mutual fund industry.

### *3.4.7 External legitimacy – rating firms and the media*

Historical performance measured one way or another is argued above to play a central role in indicating product quality in the industry and thereby enabling product proliferation instead of price competition. The media and external fund rating agencies have shown an increasing interest in the mutual fund industry and in particular the increasing focus on performance and have, as such, provided legitimacy for the norms of competition that started to form in the late 1980's. They have also improved transparency in the industry.

#### *3.4.7.1 The role of the media*

In the early part of the history of the industry, mutual funds were seldom mentioned in the media. The most central piece of information that media disseminates today, the *NAV* value, were virtually non-existent in the late 1980's. Today almost any daily newspaper, from the tabloids to the 'serious' dailies will carry the *NAV* values for mutual funds. It is also not uncommon that 'experts' proffer their advice on the 'hottest' current funds even in the tabloids. Charting the increasing attention to mutual funds by a simple count of articles found in the *Affärsdata* database from 1982 – 2000 (Figure 18) shows a great increase in medial interest. From 1991 the count of articles increased rapidly from about 1000 articles a year to close to 6000 articles in 1999. Sampling indicates that most of the articles are evaluative in nature, in the sense that they discuss the relative advantages of one fund over another based on historical performance as reported by mutual fund firms (see appendix II to this chapter). All the business magazines have been evaluating and ranking the relative performance of different mutual funds, producing weekly lists of 'top 5 funds' and 'worst 5 funds'.

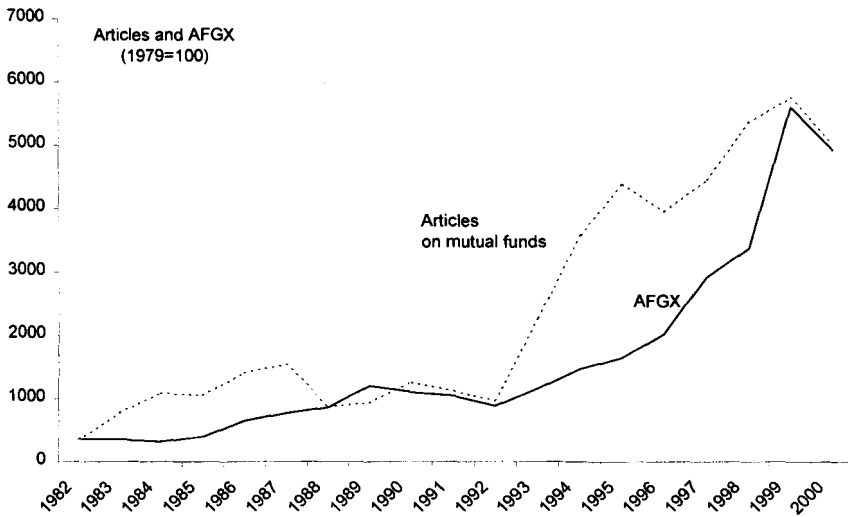


Figure 18 - Media coverage of mutual funds and the AFGX

The sharp jump in the number of articles around 1992 corresponds rather closely with the upswing in the Swedish stock market. There is a plausible connection between the increased media attention and a general awareness that mutual funds were becoming an important part of many persons savings portfolio. Due to the wide appeal of the tax-saving effect of the *Allenansfond*, a wide section of the community owned mutual funds, which suddenly started to prove valuable. This change in interest among readers was probably sensed by the papers, and hence the increase in media attention to mutual funds. It is curious, however, to note that the real upswing in media interest for mutual funds *preceded* the stock market upswing by about two years.

In the same manner that the media paid increasing attention to mutual funds, it also paid increasing attention to the role of security analysts. Searching *Affärsdata* for the combination of security analyst and mutual fund firm generates an article count<sup>54</sup> rather similar to the count of articles about mutual funds (see Figure 19).

<sup>54</sup> The annual count is deflated by the number of articles on mutual funds per year to control for the increased coverage of mutual funds apparent in Figure 18.

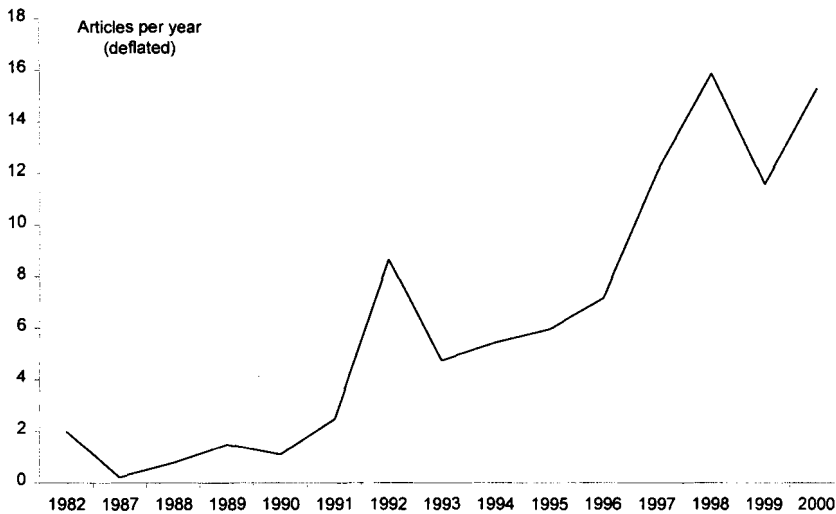


Figure 19 - Media attention to security analysts in the mutual fund industry<sup>55</sup>

Media coverage of security analysts was perhaps even more evaluative than of mutual funds in general. This tendency has been strongest with respect to the analysts employed in the stock-brokerage business. In 1995 one of the leading business magazines in Sweden (*Affärsvärlden*) started publishing an annual ranking of individual Swedish security analysts, as well as the best analyst organization in the industry in different categories (a practice common in the U.S. for a long time). Every year the same magazines also publish lists of the highest paid security analysts in the industry and the most fabulous bonuses paid out during the year, adding to the aura of analyst 'superstars'. *Affärsvärlden* also ran an annual article series (starting in 1995) detailing changes in fund managers in the industry in the past year. One point of the article series was to prod mutual fund into reporting changes in fund managers in their annual reports (which was often not done at the time). The argument was that since fund managers are important to the performance of the mutual fund, a change in mutual fund manager should be highlighted as a change in the fund.

The role of the media in generating consumer awareness about the importance of performance of the mutual fund, as well as of the role of 'active management' is probably hard to over-estimate. Virtually

<sup>55</sup> Source: Affärsdata

all managers with industry experience from the early 1990's pointed to the role of the media in 'educating' the public, and in pushing for increased transparency in the industry. Lately, however, industry leaders have criticized the media for an obsessive focus on fee levels and for ignoring the values of active management actually provided (F'T, 2001). By and large the media has provided legitimacy for the ideas that it is important to establish mutual fund quality and that it is well proxied by historical performance and that security analysts are an important source of how well a mutual fund firm performs.

#### 3.4.7.2 External rating agencies

Another significant development, which adds to the legitimacy of historical performance as a guide to product quality, was the establishment of mutual fund rating firms in Sweden. The first mutual fund rating agency in Sweden is *Wassum Investment Network Rating (WIN Rating)*, established in 1999. *Morningstar*, one of the world's largest mutual fund - rating firms, also started operating a Swedish subsidiary in 1999<sup>56</sup>. Both *Morningstar* and *WIN* rate mutual funds on their prior (3 or 5 years) performance. *WIN* also rates the perceived ability to maintain this performance by looking at asset management personnel turnover and other organizational variables. In the U.S. market, rating firms have shown to possess substantial power in the mutual fund market in directing the flow of investor money (Pozen, 1998). Del Guerci and Tkac (2001) show that a five-star rating by *Morningstar* resulted in a substantial (53 per cent) above normal expected money flow for a fund<sup>57</sup>.

While the importance of rating firms in the Swedish industry is likely to be less accentuated than in the U.S., as the average investor is currently less performance conscious than in the U.S., the importance and power of rating firms is naturally not lost on industry executives. While the Swedish mutual fund industry initially showed limited interest in participating in rating activity, they soon noticed that customers took notice of the rating figures and the activities of *WIN Rating* quickly gained importance. The CEO of *WIN Rating* related an illustrative story of the perceived power of the rating firm. A managing director of one of the mutual fund firms owned by a larger bank called on him a couple of hours after the fax with the weekly request for in-

<sup>56</sup> Initially as *Fondstar*, later *Morningstar Sweden*.

<sup>57</sup> The accuracy of rating firms is not the subject of this dissertation, but interested readers may refer to e.g. Sharpe (1998).

formation had gone out. The manager was very upset and asked why his firm was being neglected. What had they done wrong? After discussing for a while, it transpired that that *WIN Rating* had (by mistake) not faxed the questionnaire to the bank this particular day and that was enough to send the Managing Director running to find out what was wrong.

The chapter has thus far argued that the formation of the market for mutual funds centered around the establishment of a notion of what product quality is, and consequently of the value of active management and product introductions in competition. The next section discusses the effects on the product introduction of a firm that the formation and institutionalization of these kinds of competitive norms have.

### 3.5 Effects of norms on product introduction behavior

Managers currently hold the view that product introductions are an important competitive strategy, and they often imitate each other's product introductions. The key to the development of this view of how to compete was the institutionalization of the use of the historical performance of the mutual fund as a proxy of product quality. When historical performance is a central quality feature, a strong case can be made for the value of 'active management' – the pursuit of returns to asset management higher than the average market return. Firms can thus, with this logic, charge a management fee from the investor for their 'active management' of the fund. This fee need not be directly related to the costs of operating the fund but rather to its expected performance. In that sense the dominant revenue generating logic and the product quality logic are related. Supporting this development (and also benefiting from it) are security analysts as a professional group. An increased awareness of product performance increased their perceived importance in the firms. Simultaneously, analysts established themselves as a profession with an active professional association and an accreditation course. The media and rating agencies provided external legitimacy to these ideas of how to compete, and specifically to the value of 'active management'.

This penultimate section in this chapter discusses the possible effects of these competitive norms on the product introduction behavior

of firms. The theoretical framework for product introductions is an institutional diffusion perspective introduced in chapter two. Two main questions are addressed – the effect of norms on which individual products are adopted and how norms may bias certain individual firms for or against adopting particular new products.

### 3.5.1 *Competitive norms and the 'fit' of new products*

A central idea in an institutional perspective on diffusion processes is that an innovation that is congruent with extant norms and the values of an adoption community spreads faster and further than an innovation at odds with such values (Strang and Meyer, 1994). What kind of new products are likely to be well received in the competitive environment of the Swedish market for mutual funds in the 1990's? At this stage it would be ideal to present longitudinal attitude surveys and archival *SFF* working documents detailing commonly held opinions and attitudes towards specific products at various points in time. However this kind of data is not available, so the option is then to draw on secondary data, such as media reporting (for a historical perspective) as well as interviews with currently (and formerly) active security analysts and fund managers. One problematic issue with this approach is that if security analysts and managers in general hold some institutionalized values that bias them against seeing a particular product as professionally appropriate, they would not easily be able to reflect on this. One way to address this difficulty is to juxtapose the views expressed by the fund managers of firms that have not adopted a particular product, and the views of the fund managers of firms that have adopted these products. While the interviews covered the views on several product categories, the focus of this section is on the three different product categories selected for the quantitative analysis in chapter five – *Mixed asset* funds, *Index* funds and *SRI* funds.

#### 3.5.1.1 Mixed asset funds

Mixed asset mutual funds, or balanced funds as they are also known, differ from most other mutual funds in that they invest in both equities and bonds, according to a specified asset-weighting scheme (e.g. X per cent equities and Y per cent bonds). The main idea is that the investor is offered a more 'complete' product than a traditional equity or money market mutual fund, which often develop in opposite directions. Earlier, the investor needed to weigh the asset composition (how much in

equity mutual funds, how much in bond mutual funds), but this decision can now be handed over to a professional mutual fund manager. From the point of view of the mutual fund firm it is also a good idea since the service of the asset allocation decision (how much to invest in stocks and bonds respectively) can be sold to the consumer.

The desire of consumers to hand over not only day-to-day investment decisions but also the asset allocation decision to a professional fund manager took some product developers by surprise. As one product developer expressed it:

*"We missed out on the consumers' wish for us to make the [asset] allocation decision for them. We always had the opinion that the consumer is rather rational, and as such allocates between stocks and bonds. We missed the strong demand for us to make that decision for them... But then we saw how quickly volumes grew in different fund categories. So then we quickly imitated and started mixfunds."*

(Asset management officer at bank 3)

An important event that rendered mixed funds popular was the shift in the market in the mid-1990's (due to regulatory changes) towards becoming more of a market for pension savings. Mixed asset funds are often perceived as particularly suitable for pension savings, perhaps because they are more 'hands-off' for the investor. The mutual fund manager is given greater responsibility in the inter-temporal asset allocation decision, which otherwise rests with the customer.

From a technical point of view, the management of a *Mixed asset* fund is not different from either equity or bond funds respectively, and the only new product dimension is that an asset allocation decision is added. Such decisions are routinely made by the chief economists of all asset management firms based on their predictions of how the securities and money markets will develop. One organizational issue, however, is that a manager of a mixed asset mutual fund needs to draw on advice from both equity as well as bond analysts, and these groups are normally functionally separate in the organization.

To sum up, this product category is close to established professional norms and routines apart from ideas of consumer rationality.



### 3.5.1.2 Index funds

Index funds are mutual funds that replicate the assets combination of a specified index (such as the *S&P 500*). In practical terms it means that the fund only changes its asset allocation (buys and sells some assets) when the index is re-weighted (which often happens a couple of times in a year). Theoretically, the idea behind an index fund is that in an efficient market no individual investor (or fund manager) can beat the market (as approximated by an index) in the long run. Therefore it makes no sense spending money and effort on trying to beat the market through active fund management, and a natural, cheaper way is to simply replicate the movements of the market by holding a portfolio that replicates the market index (Gruber, 1996). Index management is thus called 'passive' management to distinguish it from the more common 'active' management where the financial analyst and the fund manager try to add value by screening, evaluating and deciding on the asset composition of the mutual fund. The normal services of a fund manager and the security analysts, to screen and select equities to buy and sell for the mutual fund are thus not required and the role of the fund manager is limited to trading equities, to maintain a portfolio identical to a specified index. This also means that the usual way of differentiating mutual funds (historical performance) is not applicable to index funds. Index funds are, in a sense, a commodity where volumes in trading are key to profitability. These product characteristics are often not appreciated from the point of view of a professional security analyst, and in particular not the idea of passive management.

Professional skepticism of passive investment, and index funds in particular, is not specific to the Swedish financial market. *Vanguard*, the pioneer of index funds in the U.S., faced similar initial skepticism from the other firms in the industry. The story of the establishment of *Vanguard* in the early 1970's is telling of the attitudes to passive investment held at the time. When John Bogle, a manager at *Wellington Management Company* was fired from his old job he wanted to start up his own firm. Due to contractual issues, his former employers did not allow him to engage in the fund management or distribution business. Circumventing this he started *Vanguard*, which introduced the first Index fund in the U.S. market, arguing that he was not in the mutual fund management business, since an index fund needed no fund manage-

ment – an argument accepted by the former employees (Targett, 2001; Siggelkow, 2002).

Index funds were introduced in Sweden by the fourth largest firm (and also a commercial bank) in the mutual fund industry – *Handelsbanken*. The circumstances of this introduction were special, however. At that time the bank had a CEO (Mr. Jan Wallander) who had done academic research on the virtues of passive management and thus had extraordinary reasons and organizational power as well as professional legitimacy to introduce index funds. As Mr. Wallander expressed it in his memoirs:

*"My view on the possibilities of correctly predicting the future also has consequences in other areas, for example on how one views stocks... If you do not believe that there are possibilities to foresee the future better than others and thereby sustainably outperform the index, it is a better to offer an indexfund, that is a fund that has diversified its holdings so that it will replicate the index."*

(Wallander, 1998, pg. 187)

As in the U.S. the first index fund introduced in Sweden was met with skepticism both from the larger financial community as well as from security analysts within the organization itself. Mr. Wallander recalls:

*"Initially sales were rather slow. It was natural that the stock specialists of the bank were not amused, but it was also difficult to have the branch offices commit to the marketing effort."*

(Wallander, 1998pg 188-189)

To argue the value of index funds, Mr. Wallander and a colleague conducted a study of historical returns to active and passive management, concluding that most mutual funds could not beat the index in the long run<sup>58</sup>. This move to challenge the larger financial community was not uncontroversial either:

*"We were, naturally, not uncontested. First they targeted possible shortcomings in our material and in our interpretation... ..Even with the natural*

---

<sup>58</sup> Kyhlberg, O och Wallander, J (1984) *Konsten att placera i aktier*

*lack of enthusiasm – to put it mildly – of the professional 'establishment' on the stock market, holds the idea of indexfunds successively gained currency."*

(Wallander, 1998: pg. 189)

Similar notions of resistance, or skepticism, among managers, fund managers and financial analysts regarding index funds were also voiced in the interviews. This section is organized to present first opinions about index funds voiced by firms that have not introduced the fund, and then the opinions of firms that have adopted an index fund are presented. None of the managers of firms that had not introduced index funds expressed reservations against the idea of an index fund as such, but many saw practical problems in introducing index funds. The main issues mentioned related to the lack of customer interest, the lack of scale as well as technical issues.

At one level, many of the managers interviewed claimed to believe in the virtues of active management as a principle (see discussion and citations in section 3.4.5). Other issues at the operational level were argued by product managers as well as product development officers. One of the asset management officers in bank 3 argued that one reason why their firm had not introduced an index fund yet was the problems associated with its management and that no real index funds are on offer in Sweden today:

*"I claim that there are no functioning index funds in Sweden today... they do not replicate index. They can impossibly replicate index... They have a larger tracking error than many of our actively managed funds... This is because they can not manage to replicate... It is damned difficult to replicate an index... An index moves all the time... It requires a turnover of 10 per cent of the portfolio, only to replicate an index. You can imagine what fees this consumes, brokerage fees and the like. It is not easy being an index manager... It requires an enormous trading organization... You have to be engaged in 'crossing'... We simply do not have the scope and not enough exposure to the market."*

Another reason for skepticism towards index funds is the potential substitution, or cannibalization, effect of index funds on broad actively managed funds. The average management fee for index funds is

significantly lower (about half) than for similar actively managed funds. The operating costs, on the other hand, of an index fund are (probably) more than half those of an actively managed fund<sup>59</sup>. In effect, if a firm offered both broad actively managed funds as well as index funds customers might choose index funds, at half the management fee, and the firm would lose short-term revenue. As the asset management officer cited above argued:

*"One of the problems with index funds in the system of a bank, is that you deliver them through the branch offices... in the branch office network there is not enough competence to argue the difference between active and passive management. What happens then is the standard story. If you have two products, what do you choose on – price. What happens then? The only thing we have created is a cheaper product, that was not actually meant to compete but to complement. It is not good for the customer either... perhaps you then leave the customer high and dry in the end because profits become too low... If you make money you can also provide good service... the banks are closing down their branch offices everywhere. If it was not for funds, that you sell so many funds through the office network, there would not be any offices in the countryside anymore. So what happens the day everything turns into index funds and is sold in a different way? Bang, all the branch offices disappear. As did the local grocery stores in Northern Sweden. The effect will be the same."*

Firms that offer index funds, not surprisingly, hold a more positive view of the product and its promise. The first line of argumentation offered for why it is a good product centers on the rational idea of efficient markets in line with Mr. Wallander. As expressed by a CEO:

*"... now I can tell you a secret – the phantom is not born in this industry... everybody has a high, and it is nice that everybody has great faith in themselves, but you can not beat the index. Over time. It is so stupid to claim otherwise. It has to do with that, initially, you could probably beat the index a bit, because asset managers had some kind of information advantage and it was easier before... In the early 1980s... But what happens is that the*

---

<sup>59</sup> The main difference in cost structure is the addition of the cost of a number of analysts for an actively managed fund. Distributing the cost of one or two analyst salaries across perhaps 100 000 share holders does not add much to the cost on the margin.

*transparency increases – for better and for worse, which means that the fund managers become less and less willing to take risks. They start to replicate index in their management. The bets become fewer and fewer.”*

When managers of firms that had already adopted the index fund were asked about why their competitors were so slow in imitating, answers focused on what they saw as internal political as well as image issues of many of the (larger) firms.

*“... the security analysts have too much influence. They do not want it. They are also influential here, but I know that at SEB they would see it as a shame to have an index fund and it would be an insult to their asset managers... I think that we have a different asset management tradition. I think so.”*

(CEO fund management firm bank 1)

Another CEO added the issue of how to manage a firm that offers both actively and passively managed funds.

*“I would not like to run a mutual fund firm that manages both active and index funds... [when the index fund then performs better]... How would I be able to keep my prices up for the managed fund? How could I motivate my customers to invest in it?”*

(CEO, Mutual fund firm 2)

Thus index funds are considered with skepticism from several perspectives, but two main lines of argument can be distinguished. Firstly there is a profit concern (there are no customers, margins are too low), and secondly there is a value concern (active versus passive management, internal political problems of upsetting security analysts). Although one product manager voiced serious concerns about the technical feasibility of operating an index fund, most managers were of the opinion that the technical issues were not insurmountable. With respect to external legitimacy (media reporting), index funds have received much positive media attention (see appendix II to this chapter).

### 3.5.1.3 Socially Responsible Investment (SRI) funds

In a similar way that *Index* funds first were introduced by a large firm, the first *SRI* fund in the Swedish market was also introduced by an es-

tablished (large bank) firm. In 1980, *Robur Fonder*<sup>60</sup> introduced *Svenska Kyrkans Värdepappersfond* (The Swedish Church mutual fund). As with the index fund, there were special circumstances that led to one of the largest firms taking the step into SRI funds. This fund was, however, not open for the public to invest in, it was an 'institutional' fund, set up to manage the assets of the church. At the time, *Sparbanken* (later *Föreningssparbanken*) was managing the worldly assets of the Swedish Church. The church was an important customer and their wish to see a Christian investment option led to the opening of a mutual fund that would avoid investing in weaponry, tobacco and other such industries. At the time, socially responsible investment was an almost unknown concept with virtually no media coverage<sup>61</sup> and a very low level of awareness in the industry in general. In the end of the 1980's, when the environmental debate took off in Sweden after a number of dead seals washed ashore in the archipelago, mutual funds that invested in environmentally sound firms abroad started to be referred to in the Swedish business media. In 1988, another large bank introduced the first environmental fund in Sweden (*SEB Världsnaturfonden*) - again at the request of a large asset management client (*WWF*). This fund was subsequently, in 1990, sold to a smaller firm (*Carlson Investment Management*).

While not met with the same kind of fundamental skepticism as index funds, environmental and ethical funds rank among the highly medial products of which fund managers and CEOs voiced skepticism. Socially responsible investment is controversial not mainly because of its challenge to the idea of active management but rather because of the perceived lack of rational economic logic underpinning its core ideas. It is by some analysts seen as 'the domain of cranks... or loonies', presumably for the belief that environmental soundness is a systematically positive sectoral factor, or even more for the belief that there may be other values to investment than maximum financial return (Euro-money, 1999). While SRI funds are actively managed funds, the criterion and tools for evaluating and selecting assets differ from those of standard funds. Common mutual fund objectives are either geographical (i.e. a North America fund, or an Asia fund) which invests in assets within a specific geographical area; or sectoral (e.g. a Pharmaceutical

---

<sup>60</sup> The mutual fund management firm of *Föreningssparbanken*.

<sup>61</sup> The first mention of an ethical fund in the media (found by this author) was in 1988 (Ericsson, 1988).

industry fund). Both of these dimensions have clear theoretical underpinnings that are commonly taught in business schools and thus shared among many financial analysts. Regional as well as industry analyses are standard tools of most MBA's (e.g. the Structure Conduct Performance and the Industrial Organization schools). Also, more importantly from a professional perspective, most of the external information used by financial analysts in their analytical work is supplied in normal asset selection dimensions – e.g. regional economic forecasts, exchange rates, industry growth forecasts. Environmental or ethical funds, on the other hand, 'cut the pie' in a different way. These funds can include several regions as well as industries, with the common denominator being that the firms must meet some criteria of being ethical or environmentally sound. As one executive expressed it:

*"It is a much larger [innovation] than for example 'Time funds'. 'Time' is a new way of slicing up industries. But you use the same analysis and channels. A charity fund is a new concept, where you save and contribute, where you connect the worlds of finance and charity. An ethical fund pleads, you trade, part of the proceeds for a value. You add that you want to change society and you pledge some money to that end."*

(CEO Mutual fund firm 1)

Skepticism to the introduction of SRI funds was, as with index funds, voiced from several different angles. Most common was a concern with the notion of an 'ethical' product – what is ethical and what is not? The working definition of 'ethicalness' or 'environmental soundness' varies across mutual fund firms and this is a main focal point of both professional and medial criticism of the product concept (Wine, 2001; Cerin and Dobers, 2000). This point was echoed in several of the interviews.

*"What goes – what are you allowed to invest in? You may think what you want about child labor. Some think it is good and others think it is bad. And what about this thing with weapons. Damn it, the police need weapons. It is... strange. It is vague and a bit suspect."*

(CEO fund management firm bank 1)

Concern about the vagueness of the ethical concept also prompted some image considerations – launching a product with a questionable definition is not seen as professional.

*"I have very little faith in ethical funds. Especially in the way they are constructed today. That is the reason why we do not have any. There is a question of image – there is a real risk of being exposed to severe criticism. That is why we do not have any today, because there are no ethical funds, I claim, in Sweden today... there is no good, clear concept... why are you allowed to invest in the pharmaceutical industry, why are you not allowed to invest in, says the ethical fund, the alcohol industry? But if you and I have a dinner at home, we would not invite guests without having a couple of bottles of wine at home? It would not work, it would be very strange... How can you simultaneously have such a fund and other asset management? The 'un-ethical' asset management. I do not accept it, it is a totally ridiculous solution."*

(Asset management officer bank 3)

There are also issues of whether or not it is 'morally' correct for a mutual fund firm to market SRI funds as investment vehicles, from the perspective that the consumer may not understand that the investment (may be) less profitable than a 'normal' mutual fund. The above asset management officer opined:

*"The question is what the customer understands. An ethical investment according to certain rules or giving away a certain part of the profit. You could ask yourself why you should give away some of the return when the primary objective is to save money. It is a paradoxical situation. There is one advantage, and it is that you contribute with untaxed money. But this assumes that you have received good returns. If you have had zero growth you have to contribute with your own, taxed money."*

Another CEO of a medium sized mutual fund management firm expressed concerns about the possibility of combining 'sound' asset management with social concerns:

*"... my fundamental view is that it is very difficult to combine a sound asset management product with a good charitable objective."*



## (CEO Mutual fund firm 2)

Among the firms that had introduced SRI funds, the opinion was different. They argued for the economic relevance of social responsibility as a selection criteria of good investments. One CEO directly related the prospects of a SRI fund of doing well to the specific investment rules of the fund:

*"Whether it reduces the return or not depends on how strict and what types of ethical restrictions you place on the investments... It is common to use the U.S. experience as evidence that ethical funds do not perform worse than normal funds. Domini social index is an index for ethical funds that has performed as well or better than normal indices for a long time."*

(CEO Mutual fund management firm 1)

Another executive argued that a SRI 'filter' may be a systematic guide to better managed firms and thus more profitable investments

*"Yes, but in a large scale comparison of all the ethical funds in the U.S. in 1998 with index and average funds it showed that they had performed approximately as well as index, and some even a bit better than that. It can be explained by the focus on smaller firms, you lose the really large firms and those [smaller firms] have done better during certain periods. It can also be explained by the fact that these are exceptionally well managed firms... Crisis firms are not bothered with these things [ethical considerations]..."*

(CEO Mutual fund management firm 3)

There were also opinions voiced that SRI necessitated a difference in values of the asset managers involved. The CEO cited above shared an experience:

*"Our marketing officer often recounts his experiences of visiting Great Britain and talking to one of the senior officers [of a firm that had introduced ethical funds]... about what the difficult part is [in introducing ethical funds]? And he [the senior officer] answered simply – it is the security analysts... They are the most difficult to convince. We have had similar experiences. Not to the degree that they have quit. We knew about the problem at*

*an early stage, that it would be difficult if we could not trust in the security analysts. We have therefore worked on the internal acceptance that is needed... But it has been a long internal acceptance process and I can only imagine how long – I have tried it with the colleagues in [a bank], it would be in other places.”*

Another CEO reflected on the differences in attitudes needed to appreciate the value of *SRI* investments:

*“Many [in the industry] are younger than my children. They hold other values, most of the industry actors have worked a lot with money, and they are conscious about the value of money and they are fresh out of school – analysts and asset managers. I have a different background and values. To them it was a strange idea, why should one join these [ethics and management]. Maybe it is that simple. The average age in the mutual fund firms is low, they were victims of their own success, so much was going their way... It is another world, a different language and totally different people.”*  
(CEO Mutual fund firm 1)

As with index funds, opinions about *SRI* funds differ, most markedly between firms that have and those that have not adopted the product. Among those who are skeptical several opinions were voiced. Firstly there was a concern with profitability (no customer base), then about conflicting values (how to combine ‘ethical’ and ‘unethical’ management and that asset management should be for ‘maximum performance’) as well as a concern with the concept of an ethical investment – who is to judge? In contrast to index funds, however, there was little voiced skepticism about the market potential of the product. As is evident in Figure 21 (page 109), *SRI* funds have attracted a fair share of media attention, particularly in the early 1990’s, when there was a lively environmental debate in Sweden. A content analysis<sup>62</sup> indicates that most of the media attention is evaluative and positive of *SRI* funds. Thus, while *SRI* funds seem to lack in normative (professional) legitimacy, they are, on the other hand, legitimized in public discourse on mutual funds.

---

<sup>62</sup> See appendix II to this chapter.

#### 3.5.1.4 Competitive norms and the 'fit' of new products

The question addressed in this section is how the institutional 'fit' of new products in a market may influence product introduction behavior of firms. By investigating managerial attitudes as well as attitudes reflected in the media towards three products that all diffused during the 1990's, a picture emerges of how new products may or may not 'fit' into an institutionalized view of how to compete. *Mixed asset* funds were, in general, considered to be in line with extant norms. Although they represent a deepening of the service provided by the management firm (taking over the allocation decision) the overall idea of the product is in line with norms of the value of active management as well as asset management for 'maximum return'. *Index* funds, on the other hand, were commonly met by skepticism within the industry mainly because they represent passive management – contrary to the values of active management espoused by most industry managers. *SRI* funds were met with similar skepticism among the industry managers, but on the grounds that the product idea (value of ethical or environmentally sound investments) was considered vague and contrary to value maximizing asset management. While both *Index* and *SRI* funds lacked in professional legitimacy they did, however, receive substantial (mainly positive) media coverage, contributing to their legitimacy in the public discourse.

Re-introducing the figure from the first chapter (Figure 20), depicting the difference in speed and the extent to which these three product categories diffused in the Swedish market for mutual funds, the difference can now be discussed with a deeper insight into the social meaning of these products in the industry. Both *Mixed asset* and *Index* funds were introduced into the industry relatively early (before 1980), but remained marginal products adopted by a single firm until about 1989. While *Mixed asset* funds then spread rapidly to almost 50 per cent of the firms between 1989 and 1994, *Index* funds reached a maximum penetration grade of 15 per cent of the firms in the same period<sup>63</sup>. *SRI* funds, first introduced during the 1980's, experienced a less limited spread than *Index* funds, reaching about 20 per cent of the firm population by 1999.

---

<sup>63</sup> The subsequent drop in adoption percentage was not due to firms abandoning these products but due to the large inflow of (mainly foreign) firms in the Swedish market and these firms did usually not carry either of these product categories.

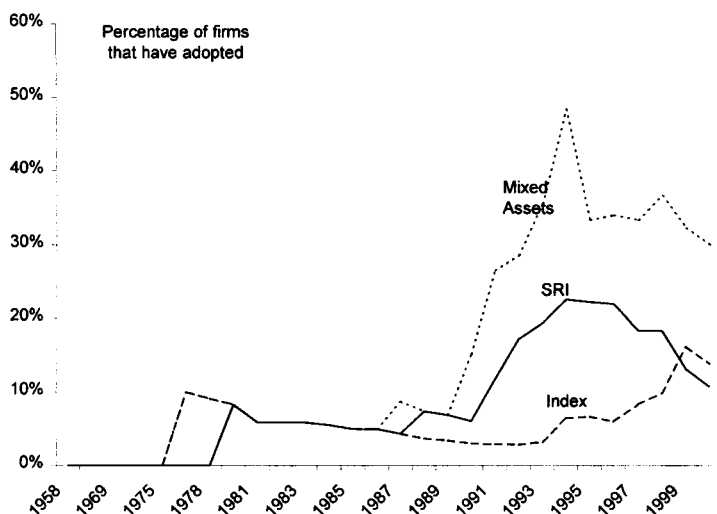


Figure 20 - Product adoption patterns

The pattern, where *Index* and *SRI* products diffuse relatively slowly, is not unique to the Swedish market, but has also been observed in the U.S. market (Damato, 2001; Wine, 2001). An obvious, economic, explanation for the difference in adoption patterns would be that *Index* and *SRI* product categories are less profitable than other product categories, and are thus selected against in a rational product introduction decision. While it is an explanation common among industry managers who have not adopted any of these product categories, there are questions regarding this explanation. From a competitive strategy perspective *Index* funds should hold appeal for large firms as they, in essence, are commodity products (one index fund is not different in performance from another). As such the profitability of introducing these products is dependent on economies of scale, where a large actor holds a sustainable advantage compared to a smaller firm. Under current competitive norms, where historical performance is a key selling point, a small, specialized, mutual fund firm can compete successfully with a larger firm if it can differentiate in terms of product performance<sup>64</sup>. Such specialist competition is not possible however with respect to *Index* funds. For *SRI* funds, on the other hand, the possibilities of differ-

<sup>64</sup> An illustrative example is that Didner & Gerge, a one-product, two person mutual fund with a very good track-record received a larger share of the PPM funds (new pension system introduced in 2000) than SEB, the third largest actor.

entiation should be relatively greater than for normal funds, as the techniques for the analysis of socially responsible firms are not as well developed or spread as standard security analysis techniques. This would create a differentiation opportunity for firms with a strong analyst organization.

From a public legitimacy perspective, *Index* and *SRI* have received equal media attention than other product categories (Figure 21<sup>65</sup>). This suggests that adoption differences should not be driven by differences in legitimacy with audiences external to the firms.

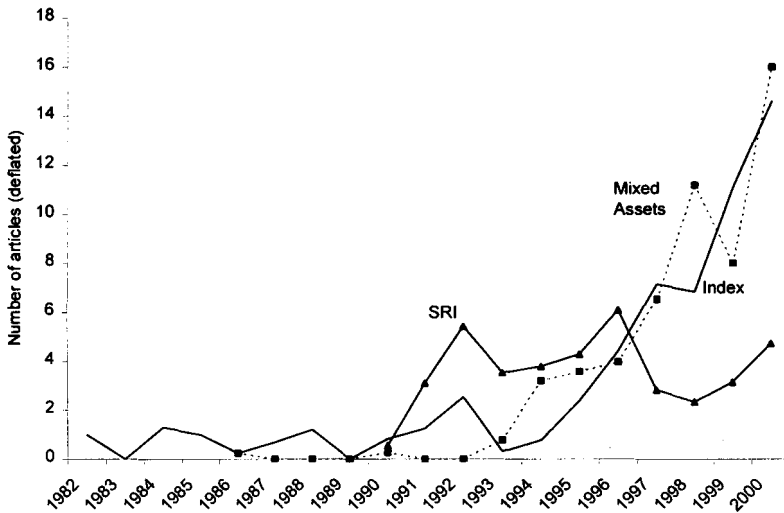


Figure 21 - Articles by fund category

Media attention also seems to be differently causally related to adoption behavior of the firms across the product categories. Lagging the article data by one year (to allow for time taken by firms to respond to media attention) provides an interesting pattern (see Figure 22). The dotted lines with squares indicate the adoption per cent and the number of articles regarding *Mixed asset* funds, whereas the full lines, with rings, show adoption per cent and number of articles about *Index* and *SRI* funds. The adoption of *Index* and *SRI* funds seem to be driven by media attention (first articles, then adoption). For *Mixed asset* funds, on the other hand, the pattern seems to be the opposite where media at-

<sup>65</sup> The number of articles per year are deflated using the total number of articles about equity funds as a deflator (1980 = 100)

tention seems driven by adoptions (first adoptions, then media attention).

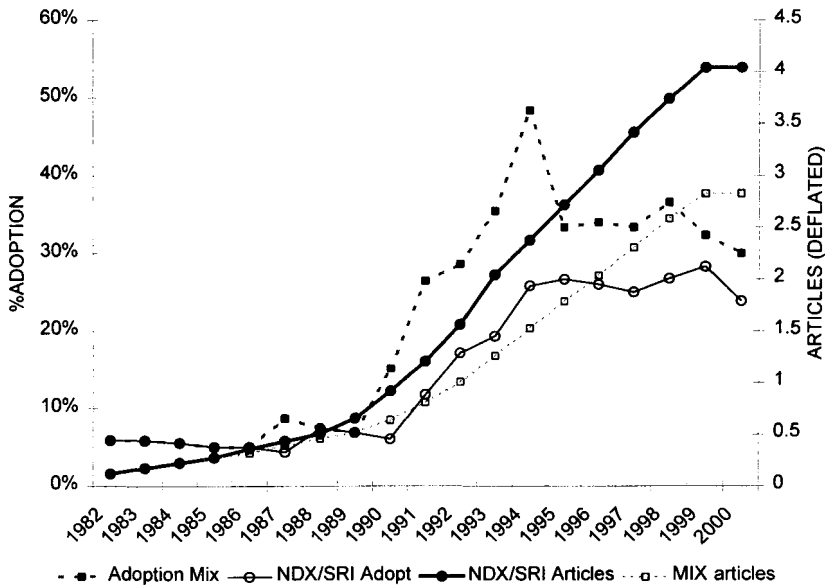


Figure 22 - Lagged articles and adoption patterns

One possible explanation for the difference in adoption rates observed in Figure 20 is thus the lack of 'fit' of the *Index* and *SRI* with current norms of what constitutes appropriate competitive strategy. The main competing explanation is that these fund products are simply less profitable for firms to adopt, and are therefore selected against. Chapter five will test, more rigorously, these two competing explanations and the details of such a test are presented in chapter four.

Apart from institutionalized norms of competition influencing what kind of product is likely to be seen as more or less legitimate to adopt, the theoretical framework of chapter two suggests that firms may be differently likely to abide by such institutionalized norms. The next section discusses how the norms of active management and the importance of historical performance may influence what kinds of firms that are more or less likely to break with these norms.

### 3.5.2 *Not all firms may fit the mold*

One significant effect of current competitive norms is the increased importance of the security analyst to the mutual fund firm (see discussion in section 3.4.6.2). An effect of the increased importance of secu-

ity analysts is, naturally, a greater demand for qualified analysts among the mutual fund firms. Leblebici et. al. (1991) and Greenwood and Hinings (1996) discuss the dynamics of institutionalized ways of competing. Their main point is that a practice becomes institutionalized when a large number of actors use it and with institutionalization thus follows, in many cases, an increase in resource competition for the resources needed to use the practice. Increased competition raises the costs of resources and lowers the return to those who want to use them, which provides an economic incentive for firms to break with institutionalized ways of doing things (Oliver, 1991).

### 3.5.2.1 The price of following the norm

In the case of the Swedish market for mutual funds, the argument of this chapter implies that active management is an institutionalized way of competing and that a crucial resource base for such competition is the security analysts. Reasoning around the dynamics of institutional norms would suggest that since having many analysts is perceived as 'the way' to compete, the cost of analysts would increase. This increase in resource cost would then provide an incentive for some firms to break with the norm and opt for alternative arrangements. A cursory investigation of the development of the average salary of a security analyst in the industry provides some support for this kind of argument. Figure 23 shows the change in salary as compared to a base year (1994) for security analysts and other white-collar workers in the finance and insurance sector in Sweden.

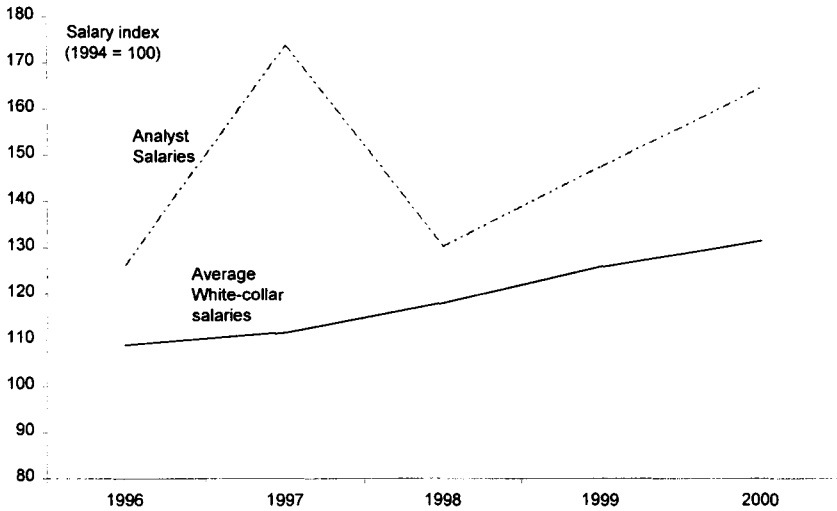


Figure 23 - Average white-collar (financial services) and analyst salaries<sup>66</sup>

As evident, analyst salaries have increased at a significantly faster rate than other white-collar salaries in the industry over the same time period. A problem with the data is, however, that the salaries of security analysts represent an average of all security analyst salaries – both of those employed in mutual fund firms and those employed in corporate finance and brokerage houses. While this aggregation probably leads to an inflated estimate of the salary of security analysts employed in mutual fund firms it arguably provides an indication of a real difference in the way salaries have developed. The sharp ‘jump’ in analyst salaries in 1997 can be understood by looking at average analyst salaries over a longer time, and in relation to the development of the Swedish stock market (Figure 24).

<sup>66</sup> Source: *Affärsdata* and *Statistics Sweden (SCB)*



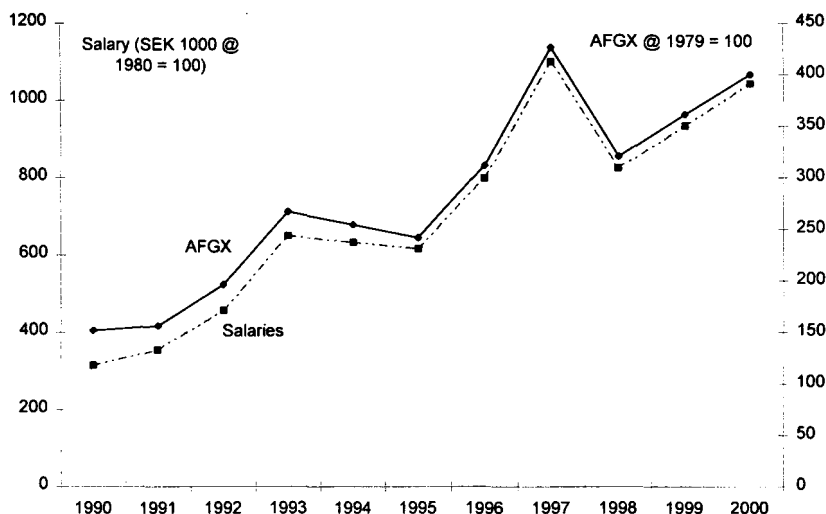


Figure 24 - Analyst average salaries and the development of the stock market<sup>67</sup>

This figure shows the development of the average level of analyst salaries (deflated, 1980=100) and the development of the Swedish stock market as proxied by *AFGX* (deflated, 1979=100). It is clear that the average salary of security analysts have increased over the 1990's, and it is also clear that this development has been extremely closely related to the general development of the stock market. This close connection provides an explanation for the 'jump' in salaries observed in 1997 – it followed the sharp increase in the stock market. The high correlation observed between the two series indicates that the salaries of analysts employed in brokerage houses are very influential in determining the average salary development. Analysts in brokerage houses receive a substantial share of their total remuneration in the form of a bonus, and this bonus is highly correlated to the development of the stock market.

Issues of data collection aside, it is clear that the salaries of security analysts have increased significantly during the 1990's, and that analysts thus have become a more expensive resource for firms to employ. One way of reducing the dependence on security analysts is to break with the norms of active management. Such a choice would re-

<sup>67</sup> Source: Affärsdata and Niemeyer, 2000

quire either selling index funds, or outsourcing a major part of the analysis function, choices that are further discussed in chapter six.

### 3.6 An institutional logic and product introductions in the Swedish market for mutual funds

The above discussion shows that the product introduction decision, and thus product market behavior, of firms must be understood in its historical context. The importance of a context-specific understanding is even more salient given the nature of the innovations investigated here (a service which is more difficult to sell on technical merit) as well as the wide-ranging changes in the competitive and legal environment of the industry. While the product introduction decision can often be seen as a result of economic considerations, several interrelated issues of context-specific norms also need to be included. First is the consideration of a product quality indicator, where firms in the mutual fund industry converged on using historical performance. The second issue is how a firm reduces the risk of introducing a low-performing fund; here firms seem to employ a tactic of imitating successful earlier introductions. This far the product market behavior is well in line with an economic diffusion story. The empirical pattern of Figure 20 on page 108 (showing the adoption patterns), where some products seem more likely to be adopted than others, could be explained within the economic model by a difference in how firms perceive the market potential of the different product categories. Institutional theory also suggests that 'fit' with institutionalized values of how to compete may be important in the product introduction decision. Interviews with managers in the Swedish mutual fund industry showed that some products were perceived as closer to core industry norms of how to compete than other products. While most product categories received similar legitimization in the public discourse, such legitimization seemed to have different effects on the adoption patterns of different funds. Thus some product-innovations seem legitimized through the public discourse, but lacking in normative legitimacy as managers and security analysts do not endorse them. Other products, on the other hand, enjoy both public and professional legitimacy.

Based on this understanding of the development of the Swedish market for mutual funds and the way managers perceive product intro-

ductions and the validity of different product categories, the next section formulates a set of context specific hypotheses from the general theoretical propositions of chapter two.

### 3.7 Hypotheses

This section elaborates the propositions of chapter two into specific hypotheses regarding firm-level product introduction behavior in the Swedish market for mutual funds in the period 1989 – 2000. From the above discussion it is argued that *Mixed asset* mutual funds are seen by managers as a product category in line with existing competitive logic, whereas *Index* and *SRI* funds are taken to be deviant from this logic. Following chapter two the hypotheses are introduced with respect to how a product is introduced into a community of firms and then how it is subsequently expected to spread. Rather than pitting the predictions from economic theory against those drawn from sociologically inspired studies this research treats the perspectives as complementary. The main difference in the perspectives, as argued in chapter two, lies in the view of whether or not a product innovation can embody any kind of social meaning to potential adopters (c.f. Strang and Meyer, 1994). The 'base-case' – all the a) hypotheses – are based on an economic model of diffusion where the efficiency of an innovation is crucial to the adoption decision. The research design, however, relies on the existence of a social, or institutional, dimension of the adoption decision when a 'controversial' and a 'non-controversial' product category is investigated (c.f. Strang and Soule, 1998). Where theory predicts an institutional dimension to the adoption decision, a b) hypothesis is added, allowing for the case where products also carry social meaning to the adopters.

#### 3.7.1 *The introduction into the industry of a new mutual fund product category*

Both economic and sociologically inspired diffusion studies recognize the importance of large, well connected firms in the introduction of novelty into an industry (Mansfield, 1961; Damanpour, 1991). In terms of the Swedish market for mutual funds the largest firms (in terms of market share) are, without exception, the old retail banks. In particular one of these banks – *SEB* – is well qualified for the role of an large, cosmopolitan actor that introduces much novelty. *SEB* has traditionally been the international bank, with offices in many of the financial cen-

ters of the world. A commonly held opinion in the industry is that SEB has usually been the first with the latest. This role has diminished due to the entry in the Swedish market, since 1994, of most of the largest international mutual fund firms. From proposition 2:

*Hypothesis 1:* The size of a mutual fund firm is positively related to the speed of adoption of product innovations

As noted in the literature on strategic product introduction, the largest firm is not always first when the innovation may threaten an existing strong market position or be organizationally difficult to introduce (Reinganum, 1983; Henderson, 1993). While none of the products investigated in this research can be argued to be either economically revolutionary to an incumbent or organizationally discontinuous, a central argument is that some of the products represent a discontinuity in terms of what is considered *appropriate* products in the industry. Sociological diffusion research has shown that socially discontinuous innovations tend to be introduced by firms that are marginal to the larger social structure (Leblebici et. al., 1991; Kraatz and Zajac, 1996). The second hypothesis, from proposition 8a and 8b, is thus:

*Hypothesis 2a:* Mixed asset funds are introduced by central firms

and conversely

*Hypothesis 2b:* Index and SRI funds are introduced by marginal firms.

Economic studies are clear in their assumption that the expected profitability of a product innovation is the prime driver of the likelihood of its adoption (Mansfield, 1961; Geroski, 2000). Similarly even sociologically inspired studies often see initial adoption of an innovation in terms of an organizational quest for efficient solutions to a problem (Tolbert and Zucker, 1983; Burns and Wholey, 1993). In the Swedish market for mutual funds perceived product profitability is very closely linked to expected sales, which is linked to the expected growth of the mutual fund. Two main considerations affect the perceived

profitability of a mutual fund – the way it is managed and the development of the market in general, and of the assets of the objective in particular (Khorana and Servaes, 1999). Hypothesis three follows from proposition 1 and relates the perception of the market potential of a product to its adoption rate.

*Hypothesis 3:* The size of earlier mutual funds with the same investment objective is positively related to adoption speed.

In simple terms this hypothesis states that products that have been successfully introduced by other firms are likely to be imitated. Even though the initial introduction of the product innovation would not have this kind of information to rely on, it is not unlikely that managers look to the experiences of other markets (in other countries) for a clue. Several of the CEOs interviewed quoted the successful introduction of both *Index* and *SRI* funds in the U.S. market as a reason behind their adoption of the product. Research within the tradition of strategic management has focused on impediments to imitation based on limited resource availability (Wernerfelt, 1984; Dierickx and Cool, 1989) or on the complexity of the innovation (Zander and Kogut, 1995; Rivkin, 2000) [refer to propositions 4 and 5]. New mutual fund products are arguably neither complex, nor do they rely on access to a particularly scarce or limited resource. *Index* funds, for example, dispense with the technically demanding task of evaluating and selecting the assets of the mutual fund. *SRI* funds, on the other hand, can be seen as difficult to manage as they draw on a different set of competencies regarding the selection of socially responsible assets. There is, however, a well functioning market both for analysts trained in environmental analysis. As shown by Rao and Drazin (2002), firms in the U.S. mutual fund industry that lack specific resources for starting a particular fund often hire competence away from competitors. There is also a market for the services of firms specializing in *SRI* screening for investment purposes. Once the screening is done, the task of the analyst and fund manager of selecting the 'best' asset composition is the same as for a standard mutual fund. Furthermore, the 'architecture' of all new products is subject to the approval of the Swedish Financial Supervisory Authority (*FI*) and it is public information. There is thus

little secrecy around the actual product innovations as such. With respect to the resources needed to commercialize an innovation, the critical resource is the security analysts. There is, however, a well functioning market both for security analysts, as well as for specific analyses, so neither product complexity nor resource constraints should not be a common obstacle to product introductions. Consequently propositions 4 (relating resource scarcity to imitation delay) and 5 (relating innovation complexity to imitation delay) are not elaborated into hypotheses. Neither propositions 6 and 7 are, relating dominant firm position to the propensity to introduce market power or competence destroying innovations, are developed into hypotheses. The reason is that the innovations under investigation are simply not market power or competence destroying.

### *3.7.2 The spread of an innovation through an industry*

While economic diffusion models often assume a homogenous flow of information regarding earlier adoptions (Strang, 1991; Geroski, 2000), sociological studies show that flows tend to reflect social structures and that the influence of these flows relates to social comparison processes (Strang and Tuma, 1993; Strang and Soule, 1998). Analogous to hypothesis 1, innovations that are in line with extant norms are most often introduced by socially central firms. As the actions of these firms most often attract more attention their actions are more influential on the adoption decision of others (Burt, 1982; Haveman, 1993) and they diffuse fast. Innovations that deviate from norms, on the other hand, tend to be introduced by marginal firms, whose actions many other firms ignore, and hence such products diffuse more slowly (Leblebici et. al, 1991; Kraatz and Zajac, 1996). Hence from propositions 10a and 10b:

*Hypothesis 4a: Mixed asset funds spread from central to marginal actors (faster diffusion)*

and conversely,

*Hypothesis 4b: Index, SRI funds spread from marginal to central actors (slower diffusion)*

Adopters may value, or draw on, different sources of product legitimacy in their adoption decision. A firm that may see the adoption of a deviant product as efficient may 'seek out' sources of legitimacy for the product and use these (Oliver, 1991; Elsbach, 1994). Where managers draw on different sources of legitimacy for different products, diffusion paths may differ (Davis and Greve, 1997). Diffusion studies investigating the spread of well-legitimized products have found that the cognitive legitimacy generated by adoptions by other members in the market or in a cohesive network may suffice to trigger adoptions (Strang and Soule, 1998). But, where products are lacking in legitimacy, potential adopters may seek 'moral' legitimacy (c.f. Suchman, 1995) and thus the diffusion path will be through close personal contacts – such as elite or professional networks (Davis and Greve, 1997). Hence from proposition 11 and 12:

*Hypothesis 5a: Mixed asset funds diffuse through local market contacts and through cohesive firm-level networks (drawing on cognitive legitimacy)*

*Hypothesis 5b: Index, SRI funds spread through personal/professional networks (drawing on moral legitimacy).*

### 3.7.3 Propositions and hypotheses

Table 1 summarizes how the various propositions forwarded in chapter two relate to the hypotheses formulated in this chapter. Proposition 5 (relating market growth to product introduction) is treated as a control variable and propositions 4 - 7 (as discussed above) are not applicable in the non-technical setting of the mutual fund industry.

Table 1 - Propositions and hypotheses

Proposition	Hypothesis
<i>Proposition 1:</i> Perceived innovation profitability relates positively to product introduction speed	<b>Hypothesis 3:</b> The size of earlier mutual funds with the same investment objective is positively related to adoption speed.
<i>Proposition 2:</i> Firm size is positively related to the speed of adoption of innovations	<b>Hypothesis 1:</b> The size of a mutual fund firm is positively related to the speed of adoption of product innovations
<i>Proposition 3:</i> Growth of resource base relates positively to innovation adoptions	Control variable
<i>Proposition 4:</i> Speed of adoption of an innovation is positively related to the accessibility of critical resources for the innovation	Not applicable
<i>Proposition 5:</i> Speed of adoption is negatively related to the complexity of an innovation.	Not applicable
<i>Proposition 6a:</i> Dominant incumbent firms are fast to adopt market power supporting innovations	Not applicable
<i>Proposition 6b:</i> Dominant incumbent firms are slow to adopt market power destroying innovations	
<i>Proposition 7a:</i> Dominant incumbent firms are fast to adopt competence enhancing innovations	Not applicable
<i>Proposition 7b:</i> Dominant incumbent firms are slow to adopt competence-destroying innovations	
<i>Proposition 8a:</i> Firm centrality is positively related to the introduction of legitimate innovations	<b>Hypothesis 2a:</b> <i>Mixed asset</i> funds are introduced by central firms
<i>Proposition 8b:</i> Firm centrality is negatively related to the introduction of illegitimate innovations	<b>Hypothesis 2b:</b> <i>Index</i> and <i>SRI</i> funds are introduced by marginal firms.
<i>Proposition 9:</i> Perceived similarity with earlier adopters is positively related to speed of adoption of an innovation	Part of Hypothesis 5
<i>Proposition 10a:</i> Legitimate innovations spread from larger firms to smaller firms (fast diffusion)	<b>Hypothesis 4a:</b> <i>Mixed asset</i> funds spread from central to marginal actors (faster diffusion)
<i>Proposition 10b:</i> Illegitimate innovations spread from smaller firms to larger firms (slow diffusion)	<b>Hypothesis 4b:</b> <i>Index</i> , <i>SRI</i> funds spread from marginal to central actors (slower diffusion)
<i>Proposition 11:</i> Market contact with earlier adopters is positively related to the adoption of legitimate innovations (drawing on cognitive legitimacy)	<b>Hypothesis 5a:</b> <i>Mixed asset</i> funds diffuse through local market contacts and through cohesive firm-level networks (drawing on cognitive legitimacy)
<i>Proposition 12:</i> Sharing of interpersonal network with earlier adopter is positively related to the adoption of illegitimate innovations (drawing on moral legitimacy).	<b>Hypothesis 5b:</b> <i>Index</i> , <i>SRI</i> funds spread through personal/professional networks (drawing on moral legitimacy).



The hypotheses offered above represent an effort to see competitive product introduction behavior of firms as influenced both by institutional as well as economic incentives. How well such a theoretical description of product introduction behavior explains the actual competitive behavior of firms in the mutual fund industry in Sweden is an empirical issue, however. The next chapter introduces the statistical methods, models and data that will be used in testing these hypotheses.

### 3.8 Appendix I – Interviews

#### *3.8.1 Place, time and method*

The interviews were primarily carried out in Stockholm between 1999 and 2001, although some preliminary interviews with Skandia AFS took place in 1997 at Shelton, Connecticut in the U.S.A All interviews were conducted using a checklist with a few common questions, but were otherwise open-ended. All interviews, apart from the telephone interviews, lasted about one hour and were taped and transcribed by the author.

The firms selected for interviews controlled about 99 per cent of the money invested in mutual funds in Sweden in 1999. Firms included: all the major actors (market share > 10 per cent); 30 per cent of the intermediate range firms and about 20 per cent of the smallest firms (market share < 1 per cent). Individuals were selected for interviews regarding the historical development of the mutual fund market on the basis of a 'snow-balling' technique, where respondents were asked to suggest other people who were knowledgeable about the development of the industry. Initial industry information was gained from interviews with Karl-Olof Hammarkvist, a senior industry member (with working experience from several of the larger firms) and also a member of the dissertation committee. The snow-balling method was particularly useful as the early years of the industry were characterized by a limited number of actors, which meant that most early actors knew (of) each other. Asking respondents to identify other important actors also provided a cross-check for the relevance of the interviewees.

Titles and positions of the interviewees are given as per the interview date, but several of the individuals have since changed both position as well as employment. In some cases, where an individual is interviewed about a prior employment, two names of firms may be given. Note that the order of individuals and firms is not correlated with the pseudonym numbers used in the text. Bank number 1, does thus not necessarily refer to SEB.

### 3.8.2 *Mutual fund firms*

#### 3.8.2.1 Banks (with mutual fund firms)

##### **SEB**

Claes Johan Thureson (Managing Director SEB Fonder)

Erik Sjöberg (Fjärde AP Fonden, about SEB Fonder history)

##### **Svenska Handelsbanken**

Peter Engdahl (Managing Director Handelsbanken Fonder)

Torsten Johanson (Managing Director Handelsbanken Fonder)

##### **Nordea** (Formerly Nordbanken and Merita-Nordbanken)

Alf Sigwid (Risk controller), Nordbanken Fonder

Rolf Lundgren (Asset Management)

Tor Falk (Asset Management)

##### **FöreningsSparbanken / Robur (Formerly Sparbanken)**

Göran Espelund (Managing Director Robur Fonder)

Anders Lannebo (Managing Director, Lannebo Fonder, formerly Managing Director Robur Fonder, interviewed about Robur history)

Johan Alm (Head Asset Management, Robur Fonder)

Tor Marthin (Head Asset Management, AMF) on the historical development of Robur

##### **Östgöta Enskilda Bank** (interview about historical development)

Hans Peterson, currently Nordea Asset management (Telephone interview)

##### **Gota Bank** (interview about historical development)

Anders Oscarsson, currently, Nordea Asset management (Telephone interview)

#### 3.8.2.2 Brokerage houses

##### **Banco Fonder**

Kajsa Lindståhl (Managing Director, Banco Fonder)

Johan Lindström (Head Asset Management) about historical development of Banco Fonder (Telephone interview)

##### **Erik Penser Fonder**

Ulf Houlst (Managing Director)

### 3.8.2.3 Independent mutual fund firms

#### **KPA**

Carina Lundberg (Managing Director)

#### **AMF**

Tor Marthin (Head Asset Management)

#### **Carlson Investment Management**

Björn Carlson (Managing Director and founder)

#### **4:e APF**

Erik Sjöberg (Head Asset Management)

Annika Andersson

#### **Treviso Fondförvaltning**

Marie Lidgaard (Aros-Meizel Asset Management, formerly Treviso Fonder)

### 3.8.2.4 Insurance firms

#### **Skandia AFS**

Leif Passmark (Head of Business Development)

Åke Freij, (COO Process Development Center)

**American Skandia AFS**, Shelton Connecticut, USA.

Rob Arena (Product Manager)

### *3.8.3 Industry Associations*

**Fondbolagensförening** (The mutual fund firm association)

Marie Lidgaard (Aros-Meizel Asset Management, the first MD of The mutual fund firm association and one of the founders)

**Sveriges Finansanalytikers Förening** (The Swedish Association of Financial Analysts)

Annika Andersson

Björn Carlson (Managing Director Carlson Fonder, one of the founders of SFF)

### *3.8.4 Rating firms and other industry observers*

**Morningstar** (International Mutual Fund rating firm)

Jonas Lindmark (Head of Analysis)

**Win Rating** (Mutual Fund rating firm)

Niklas Lundberg (Managing Director and founder)

**Alfred Berg AB** (Brokerage House)

Patrick Tillman – Head Analyst Banking Industry

Patrick Lindkvist – Financial Sector Analyst

**McKinsey & Co.**

Erik Gjötterberg Finance industry consultant

**Caring Company** (Environmental and ethical screening firm, selling screening services for SRI fund management).

Mats Furugård (Managing Director)

### 3.9 Appendix II – Content analysis of Index and SRI media attention

The aim of the content analysis was to simply investigate the *tone* of reporting – whether or not it was evaluative and positive or negative. It thus constitutes a rather simple variety of content analysis (Weber, 1990), but sufficient for the purpose of this dissertation. Data was collected from the online database *Affärsdata* which contains full-text articles from almost all the Swedish daily, weekly and monthly papers and magazines that report on economic events. In 2000 the database contained some 2 million articles. The sample chosen was 33 per cent of all the articles found in *Affärsdata* in the years 1990, 1995 and 1999. All relevant articles were downloaded for each year and then one third of these were selected. There were in all 78 articles on *Index* funds and 39 on *SRI* funds included in the sample.

Table 2 - Content analysis Index and SRI media attention

Fund	1990			1995			1999		
	%			%			%		
	Eval	+	*	Eval	+	*	Eval	+	*
Index	65	73	26	70	69	31	60	79	21
SRI	50	100	0	59	85	15	74	74	26

\* of evaluative

## **Research Design, Statistical Model and Data**

---

THE HYPOTHESES OF CHAPTER THREE outline two different ways of thinking about how firms introduce new products in competition with other firms. The first way is the economic argument, where perceived profitability of adoption drives the adoption behavior of firms. A second way includes institutionalized norms of how to compete as restricting the options for some firms to adopt products seen as controversial, and shared cultural identities as channeling the influence of earlier adoptions. To test these hypotheses a number of more or less difficult research design questions need to be resolved, questions which are addressed in the next section.

### **4.1 Research strategy and design**

The first choice made with respect to research design is the focus on a quantitative, rather than a qualitative, study of firm adoption behavior. A motive for this choice is the prevalence of theories of competitive product introduction behavior and institutional influences on innovation adoption. A theory building case -study approach would therefore be an overly inductive approach so, given the aim of testing theoretically derived hypotheses a quantitative method was chosen. A quantitative approach has some unavoidable limitations however, in particular with reference to the internal validity of the research. Two steps are taken to ameliorate these problems as far as possible. Firstly, the quantitative study is preceded by a 'thick' qualitative historical study in chapter three to base the concepts and variables used in a specific historical and social context. Secondly the quantitative study is followed by two case studies of firms that have introduced controversial prod-

ucts to provide a deeper understanding and contextualization of the findings from the quantitative analysis. This research design provides a 'triangulation' of the findings of how economic incentives and institutional norms influence product adoption behavior by using three different methods.

#### *4.1.1 A natural experiment*

When designing a study it is useful to imagine a natural experiment as a 'perfect' alternative design. This 'natural experiment' can be compared and contrasted with an actual research design to focus on differences and deviancies from the 'perfect', and subsequently to highlight what steps need to be taken to control for such differences (Stouffer, 1991). A natural experiment testing the current hypotheses would be as follows. Imagine an industry where the characteristics of firms are randomly assigned. Some firms care deeply about institutionalized norms while other firms do not care about these. Introduce into the industry two new product classes with equal market potential, but where one product is controversial with respect to existing norms, while the other is non-controversial. The central hypothesis of chapter three predicts that institutionally embedded firms are slower to adopt controversial products than firms less institutionally embedded, but equally fast in adopting other product categories. By observing over time what firms adopt these different new products conclusions can be drawn about this hypothesis.

Unfortunately there is no such 'natural experiment' available to test the hypotheses of this dissertation. Instead the research design follows a pseudo-experimental design aimed at controlling, as far as possible, for the main confounding factors (Zetterberg, 1991). There are two main potentially confounding factors in this design (c.f. Campbell and Stanley, 1963). Firstly, if the institutional embeddedness of a firm is correlated with the capability of the firm to profit from the introduction of either of the products, the economic argument will be difficult to separate from the institutional argument. Observing firm A (institutionally embedded) being slow to adopt product B (a controversial product) could be explained in two ways - either by the institutional hypothesis of resistance to breaking with norms, or by the lower profit potential from adopting perceived by firm A. Secondly, there is also a problem if product controversiality is correlated with the market potential of the product. Observing firm A adopting product B late could

then be explained either by the institutional hypothesis, or by the economic hypothesis that firms adopt more profitable products faster.

#### 4.1.2 *A not-so-natural experiment*

Both these confounding factors are potentially present in this study design. Firms do not acquire their characteristics randomly, and caring about breaking with norms may be related to the economic performance of a firm. A suitable research design thus needs to control for this potentially confounding influence. With respect to empirical research in an institutional tradition a central challenge lies with identifying 'institutions'. Defined as 'rules and norms taken-for-granted' (Scott, 1995) institutions are often 'invisible' to the actors themselves and hence difficult for a researcher to 'find' (DiMaggio and Powell, 1983; Mizruchi and Fein, 1999). This dissertation follows a strategy commonly used by institutional researchers where substantive effects of institutions are theorized, as are the 'markers' (identifying characteristics) of firms likely to abide by them. The existence of institutions is then imputed from observed behavior (Strang and Meyer, 1994; Chaves, 1996; Dacin, 1997). Suitable 'markers' of the institutional embeddedness of firms need to be identified primarily by theoretical reasoning (Strang and Meyer, 1994). In the case of this particular research it means taking extra care in defining 'institutional markers' whose interpretation is not easily confused with a purely economic interpretation. A central issue will be the definition of a marker of a 'central' firm (proposition 8a and 8b) – a firm that is embedded in an institutional setting and does not want to break with the norms this context represents. Ideally, a marker of such a firm would have a neutral economic theory interpretation, to eliminate the risk of confounding the results. When a firm displays a 'marker' and it is negatively inclined to adopt an illegitimate product (hypothesis 2b) the existence of that marker should not also predict that the firm would find the particular product unprofitable to adopt.

In this study firms are theorized to be more or less concerned with abiding by institutionalized norms mainly due to firm idiosyncratic reasons. Age, for example, is important since older and larger firms are more likely to be institutionally embedded in a context (Scott, 1995). With respect to the likelihood of breaking with norms, Leblebici et. al. (1991) and Kraatz and Zajac (1996) suggest that organizations facing economic hardship are less likely to be constrained by convention.



Firm size as well as the recent performance of a firm is, from an economic theory point of view, positively related to the possibility of profiting from any product introduction (c.f. hypothesis 1). There is therefore a possible confounding interaction between the classification of a firm as institutionally embedded and its over-all propensity to introduce a product (i.e. with the firm-size effect). Such a confounding influence would mainly be problematic in a study of whether or not institutionally embedded firms are more or less likely to introduce products in general (a more common diffusion study design). The present study, however, follows multiple products of varying controversiality and there is no reason to believe that firm size or performance is correlated with the introduction of a controversial or non-controversial product per se. Nevertheless, the firm's age, size and recent performance are included in the analysis model as control covariates.

With respect to categorizing the products as controversial or not, there is a potentially confounding effect of the difference in perceived market potential of the products. As significantly fewer firms have, for whatever reason, adopted the 'controversial' products, consumer awareness of these products may be lower than for the less 'controversial' products. Interviews suggest that managers believe that there are positive marketing externalities in the industry. As more firms advertise a certain product category, consumers dealing with rival actors are more likely to know about and demand that particular product category. A product seen as controversial in an institutional context, and therefore having few adopters, may also be perceived as less profitable due to fewer marketing externalities. Controversial products may thus also be perceived as less profitable products, confounding observations of how early or late such products are adopted by more or less institutionally embedded firms. One way of controlling for such confounding influences is to include other, more exact, proxies of product profitability in the analysis (c.f. hypothesis 3). Another way is to include a proxy for how well known the product in question is for example how much it has been publicized in the media.

#### *4.1.3 The natural and the pseudo experiments*

To recapitulate, the study design chosen is a quantitative study of the adoption behavior of differently institutionally embedded firms, with respect to products that are differently legitimate in the industry. The design is not perfect as the denomination of firms as more or less in-

stitutionally embedded and products as more or less controversial may both covary with economic variables. To deal with potentially confounding variables theoretically grounded control variables, such as age, size and recent firm performance, are used. This design can, however, never control for unobserved heterogeneity and therefore the results obtained by using this design benefit from triangulation with a qualitative method of case-studies of adopting firms.

The next step is to choose a method and model for statistical analysis suitable for the above research design.

## 4.2 Method

Studying the effects of economic and institutional influences on product adoption behavior of firms necessitates a longitudinal data collection design. The design employed in this research is to construct event-histories of the different product categories, rather than a cross-sectional or a panel data design. In essence an event-history can be described as a longitudinal record of when events (in this case product adoptions) happened to firms (Allison, 1984). Analysis of longitudinal data places some demands on the statistical methods employed, primarily due to the issues of censoring of observations and the inclusion of time-varying variables. If all firms are not observed from birth to death, but only observed during a time period (an observation window) some events may not be observed. If the events occur before the observation window opens, the observations are said to be 'left-censored'. Events occurring after the observation window is closed are called 'right-censored' (Blossfeld and Rohwer, 1995). Some firms may not have adopted one or both of the product categories by the end of the study.

Dealing with right censoring is difficult using standard statistical methods as excluding these observations means a loss of information about the firm (that a firm has not adopted a product until a specific date). Time varying covariates are also cumbersome to include in standard regression techniques as they would need to be handled by the use of dummy variables or similar solutions which becomes difficult when the observation period is long (Blossfeld and Rohwer, 1995). Fortunately, there are a set of specific methods and techniques developed for the analysis of event-history data, which can handle both right censor-

ing of data as well as the inclusion of time-variant covariates (Blossfeld and Rohwer, 1995). Left censoring is still a problematic issue with these methods and needs to be dealt with from case to case (Tuma and Hannan, 1984).

#### 4.2.1 *The model*

The main issue to be tested is what determines how quickly firms introduce new product categories depending on firm characteristics, institutionalized norms as well as competitive pressures. A common strategy used in such studies is to model the time a firm waits before adopting a certain product as a function of some independent variables. Early diffusion models used various specifications of regression analysis using Ordinary Least Squares techniques, where the independent variables were firm or industry level variables. A problem with such models, as discussed above, is how to handle the problem of right censored observations – cases where a firm does not adopt the innovation during the observation period (Rose and Joskow, 1990; Strang, 1991).

An alternative way is to model the hazard of adoption – i.e. the marginal likelihood of a firm adopting a product given that it has not adopted it until now (Strang, 1990). Modeling the hazard rate of adoption using event-history techniques deals with the problem of right censoring of data. There are several ways of modeling hazard rates of product adoption using event-history techniques, and the most common method that allows for time-varying covariates is the Cox (semi-parametric) method (Tuma and Hannan, 1984). This method is useful because few assumptions need to be made about the underlying hazard rate function estimated. However the method requires dividing the time of observation into segments, with a potential loss of information when the observation schedule is fine-grained as in this study. To allow for events to happen at any time (and thus make full use of a detailed observation schedule) it is possible instead to model the instantaneous transition rate, under the assumption of some underlying distribution (Tuma and Hannan, 1984; Blossfeld and Rohwer, 1995).

As there are a limited number of firms that have introduced particularly the controversial products it was decided to use a repeated-events method of analysis (Allison, 1984). In event-history analysis a firm is often excluded from the risk set when it has had an event (i.e. product adoption), which means that every firm can only experience one controversial and one non-controversial product adoption. A

number of firms in the sample, however, experienced several adoptions of both the controversial and the non-controversial product categories. This can be used to increase the number of usable observations provided that possible interdependencies between successive events by the same firm are controlled for (Greve, 1998). The critical interdependencies to control for are the number of prior adoptions and the length a firm has waited between the successive events - the length of the last spell (Allison, 1984).

While there are a number of possible models to use to estimate the instantaneous transition rate of a firm to adopt a new product, the model used here is the heterogeneous diffusion model proposed by sociologists David Strang and Nancy Tuma (1993). In essence it is a transition rate diffusion model that uses event-history data under the assumption of a time-invariant hazard rate. The coefficients of the diffusion model are estimated using the maximum-likelihood method (Tuma and Hannan, 1984). Perhaps the best way of understanding why this model is suitable to this particular research is to compare it to the 'work-horse' of economic diffusion modeling - the 'mixed-influence' diffusion model (Mahajan et al. 1990; Geroski, 2000).

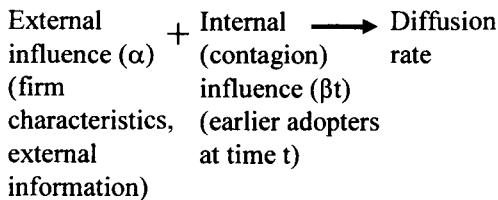


Figure 25 - The mixed-influence diffusion model

While popular in economic diffusion literature, this kind of model has one important limitation with respect to testing the hypotheses of chapter three. By using one collective term for the contagion effect ('internal influence') it is difficult to incorporate the notion of heterogeneity in the adoption community (Strang, 1991; Strang and Tuma, 1993). As a result, all actors are often assumed to be equally likely to be influenced by any other actors' adoption (Strang, 1993; Rogers, 1995). Such behavior is particularly unlikely in a competitive

setting, where firms often pay closer attention to the actions within a strategic group, be it structural (Caves and Porter, 1977), spatial (Greve, 1996) or cognitive (Porac and Baden-Fuller, 1989; Baum and Haveman, 1997) in nature. With respect to testing the hypotheses of chapter three and given the event-history method chosen above, the *heterogeneous diffusion model* is a more appropriate choice for this study.

Proposed by Strang and Tuma (1993) the heterogeneous diffusion model incorporates some of the main theoretical findings of the sociological tradition of diffusion research in the modeling framework (Figure 26).

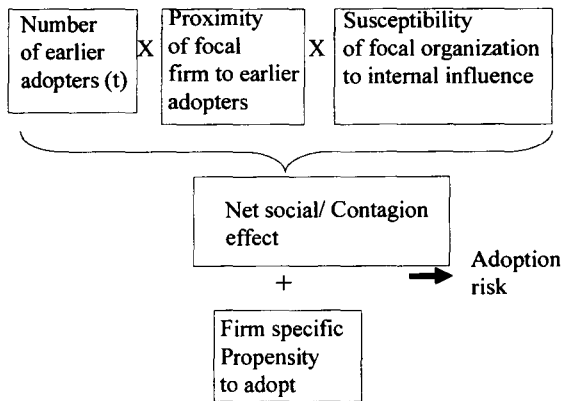


Figure 26 – The heterogeneous diffusion model

At a basic level this model follows the standard diffusion model by distinguishing two main mechanisms in a diffusion process as internal and external to the adoption community. This distinction is captured in the model by estimating two main effects - the *propensity* (i.e. external to the community) and the *contagion* (i.e. internal to the community) effects as driving the diffusion process. The propensity effect captures the likelihood that a firm adopts a product without having observed any earlier adoptions by other firms, while the contagion effect captures the influence by earlier adoptions on the adoption decision of the focal firm. By using an event-history framework these mechanisms are modeled at the level of the individual adopter rather than at the aggregate industry level (Strang, 1993).

The carrying idea is that there are spreaders and potential adopters in a community. Spreaders are firms that have adopted a practice and all other firms are potential adopters. The first spreader adopted the practice for some reason – presumably because it was useful in solving some problem. The likelihood that a focal, potential adopter firm will adopt the practice is then seen as the sum of the propensity of the firm to adopt and the contagion effect of earlier adopters (Strang and Tuma, 1993). The contagion effect is modeled as the product of two inter-related mechanisms, allowing inter-firm heterogeneity. Firstly, firms occupying different positions in social networks may be differently likely to receive information about earlier adoptions, depending on whether the adoption took place within or outside their network. This type of inter-firm heterogeneity is modeled in the social proximity vector. Secondly, there may be heterogeneity among the potential adopters as to the likelihood of acting *on* the information it received, which is modeled in a susceptibility vector of the focal firm (Strang and Tuma, 1993; Greve, 2000).

The main strength of the model for this research is that it allows for separating diffusion mechanisms in a way crucial to test the hypotheses of chapter three. Testing hypotheses 5a and 5b (differences in ‘diffusion channels’) requires a model that separates the propensity and the contagion effects of the number of analysts of the focal firm, as well as estimates the effect of social proximity of earlier adopters. Also testing hypotheses 2a and 2b (the relation between institutional embeddedness and adoption) requires an analytical model separating the propensity and contagion effects of the number of security analysts employed at the individual firm level.

The model specification<sup>68</sup> is:

$$r_{nj}(t) = \exp(\alpha' x_n) + \exp(\beta' v_n) \sum_{s \in S(t)} \exp(\delta' z_{ns})$$

where  $n$  is the focal mutual fund firm at risk of adopting a product  $j$  and  $s$  is a mutual fund firm that has previously adopted the focal product.  $S(t)$  is the set of firms that have adopted the product at time  $t$ .  $x$  is a vector of variables describing firm  $n$ 's propensity to adopt apart from the contagion influence and  $v$  is a vector of variables describing

---

<sup>68</sup> The full model by Strang and Tuma (1993) also includes an ‘infectiousness’ term, which is excluded in this analysis.

firm  $n$ 's susceptibility to influence from earlier adopters.  $\mathbf{z}_{ns}$  is a vector of variables describing the social proximity between firm  $n$  (focal potential adopter) and  $s$  (earlier adopters). Vectors  $\mathbf{x}$  and  $\mathbf{v}$  have a unity first term allowing separate intercepts for the propensity and susceptibility effects<sup>69</sup>. The hazard rate ( $r$ ) is subscripted  $nj$  as it is the  $n$ th case entry into the  $j$ th product category, allowing the simultaneous analysis of the diffusion of several competing products in an adoption community.

There is also a multiplicative formulation of the model<sup>70</sup>, however, on the basis of theoretical considerations the additive model is chosen for use in this dissertation. The main consideration being that when using the multiplicative model, it may be difficult to understand cases where the propensity effect and the contagion effect work independently (Greve et al. 1995).

The additive model has previously been used in a variety of research settings - from analyses of the spread of drug prescriptions (Strang and Tuma, 1993) to the spread and abandonment of market positions (Greve, 1995; Greve, 1996), the diffusion of corporate governance practices (Davis and Greve, 1997) and the influence of social reference groups in the change of stock exchange listing (Rao et al. 2000).

#### 4.2.2 *Assumptions of the model*

The heterogeneous diffusion model is a parametric transition rate model, which means that assumptions are made about the underlying distribution of waiting times. Waiting times are assumed to be invariant over time, that is, they are assumed not to change purely as a function of time, although covariates may change (over time) giving rise to a change in hazard rate. When investigating several biological phenomena, such as the death of a person, the hazard rate first declines and then increases as a function of the age of the person, and in such a setting it would not be suitable to assume a time-invariant hazard rate. With regard to the research question of this dissertation, however, there is no a priori reason to assume that the time from one product

---

<sup>69</sup> Estimating the model without propensity or susceptibility covariates reduces the model to a standard mixed influence diffusion model where the intercepts can be interpreted as the  $\alpha$  and the  $\beta$  coefficients in a standard diffusion model (Strang and Tuma, 1993).

<sup>70</sup> See Strang and Tuma (1993) and Greve (2000) for a discussion and Soule (1997b; Soule, 1997a) for examples of applications.

adoption to another would increase or decrease 'naturally' as a function of time. The hypotheses of chapter three all specify the individual hazard rate of adoption as dependent on either environmental factors (such as competitive intensity or institutional pressures) or firm-level characteristics (such as recent performance), but not a dependence purely on time. Apart from reasoning about the plausibility of this assumption it is difficult to test it explicitly (Tuma and Hannan, 1984; Blossfeldt and Rowher, 1995). Using graphical, non-parametric, methods in a case where there are theorized effects on the hazard rate from covariates would provide very limited additional information (Allison, 1984). Theoretical reasoning, however, indicates that an assumption of a time-invariant hazard-rate is not unreasonable.

Another issue with using transition rate models is that if there are differences in the propensity of different groups in the data to undertake an event, there would be a systematic time-dependent effect on the hazard rate even if covariates had no real effect. The reason is simply that if those with a higher propensity to have an event did so earlier and thus fell out of the population at risk, at a later time the part of the population still at risk would be those with a lower propensity to adopt, and the hazard rate would fall. With respect to a diffusion study, however, the presence of such effects can be investigated graphically by plotting the integrated hazard rate against a historical time axis (Strang, 1993).



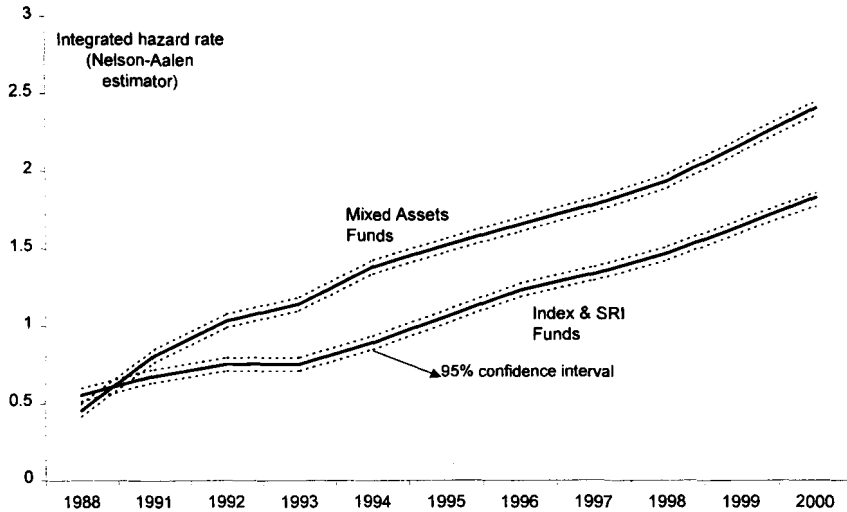


Figure 27 - Nelson-Aalen estimation of the integrated hazard rate

As seen in Figure 27 the integrated hazard rates for both adoption categories are sloping upwards, showing moderate signs of contagion effects in their spread, a pattern incompatible with the type of unobserved heterogeneity discussed above<sup>71</sup>.

The next section introduces the variables used to investigate the hypotheses and how these fit into the heterogeneous diffusion model.

### 4.3 Variables and model structure

#### 4.3.1 Variables

A central idea in the dissertation is that individual firms in the mutual fund industry are differently sensitive to economic incentives and social norms when deciding to introduce new products. When products differ in their 'fit' with institutionalized norms, the adoption patterns may become different than would have been predicted by economic or institutional theories in isolation. As discussed in the research design section of this chapter, care is needed when introducing variables to approximate the institutional embeddedness of firms. The main problem is the potential for confusing economic and institutional effects in the

<sup>71</sup> It could, however, also be a result of covariates that have no theoretical connection to contagion but which still produce this particular pattern.

analysis, consequently, the focus of this section will be on the selection of suitable 'marker' variables for the institutional embeddedness argument.

How can one mutual fund firm be differentiated as more or less institutionally embedded than another? Two stylized findings stand out from the historical description in chapter three of the development of the mutual fund market in Sweden. Firms perceive themselves to compete on the basis of quality of their asset management, and this attitude is closely related to the importance of the security analyst and the fund manager in the industry. A firm that wants to be perceived as a legitimate actor in the industry will be likely to signal this by the appearance of a strong asset management organization. This tendency is related to and supported by the emphasis of external rating agencies and the business press to publicly rank the asset management organizations of the firms annually (see chapter three, section 3.4.7 for a discussion). The change towards defining the firm in terms of asset management capabilities is clearly seen in the content of the annual reports of the mutual fund firms. Over the past decade firms have changed from general reporting of the external environment (interest rates etc.) to an in-depth description of the asset management capabilities of the firm (see Figure 15- Figure 17, pages 86 - 88).

To identify firms more likely to adhere to the competitive logic of the mutual fund market the main 'marker' variable chosen is the *number of security analysts* employed by the mutual fund firm. The main reason for selecting this measure as a proxy is the centrality of security analysts in the notion of 'quality of asset management' as a competitive logic. There are however a number of more or less problematic issues in using this variable. First and most importantly there is the question of what a count of the number of security analysts employed by the firm really approximates. The number of security analysts can, for example, be seen as a proxy of firm size and not of institutional embeddedness. This issue is not too troublesome to the analysis as alternative, theoretically arguably more accurate measures of firm-size control variables, such as size of market share, can be easily introduced. Another alternative interpretation is that the number of security analysts reflects the strength of the resource base of the firm used to create value in the industry, i.e. a proxy of how profitable it is for the firm to introduce new products. It requires a bit more care to argue that the

number of analysts employed is a good proxy of institutional embeddedness rather than of economic productive power. Considering the economic interpretation of the number of security analysts, however, provides a solution to the problem. Economic theory would predict that a firm that has a stronger resource base would be more likely to introduce *any* actively managed mutual fund product, relative to a firm with a less strong resource base. An institutional interpretation, on the other hand, predicts that legitimate and illegitimate products have the opposite relation to the number of analysts employed by the firm (c.f. hypothesis 2a and 2b). These predictions can be tested in the analysis (see section 5.2.2) hence the results should not be easily confounded.

Given that the number of analysts employed is an institutional marker, another question is whether or not it is a good marker. Does it pick up a difference in firm characteristics that is actually meaningful to how firms compete? Using geographical location as a marker variable, for example, would be of doubtful value as almost all the firms are co-located in Stockholm and there would be little variance in such a measure. It could be argued that firm size, in terms of total number of employees, would be a good proxy for firm embeddedness (c.f. Greenwood et. al., 2002), but in this case focusing on the number of security analysts provides a better proxy. This is because the total number of employees in a mutual fund is closely linked to whether or not the focal firm has 'sister' or 'parent' firms with complementary assets – such as an office network for sales the firm can utilize. Most of the mutual funds owned by banks or insurance firms, for example, have no sales personnel in the mutual fund firm, as an existing office network handles this. Independent mutual fund firms, on the other hand, often need at least a core in-house sales staff, inflating a 'total employed' measure. In keeping with the notion that firms compete on 'analytical prowess', however, almost all firms have (at the time of the analysis) their own, in-house, analyst capability. By looking specifically at the number of analysts, rather than the total size of the firm in terms of employees a closer correlation is achieved to an underlying construct of institutional 'appropriateness'. The reason is that the number of security analysts taps into a way of strategic differentiation among firms, which is in line with the notion of 'competing on active management'. In chapter three it was argued that this norm has become successively

stronger during the 1990's, indicating a positive trend in the strategic importance of using security analysts. Plotting the standard deviation of how many security analysts are employed by a firm in a certain year shows a trend towards increasing differentiation in how many security analysts are employed by firms in the industry (see Figure 28).

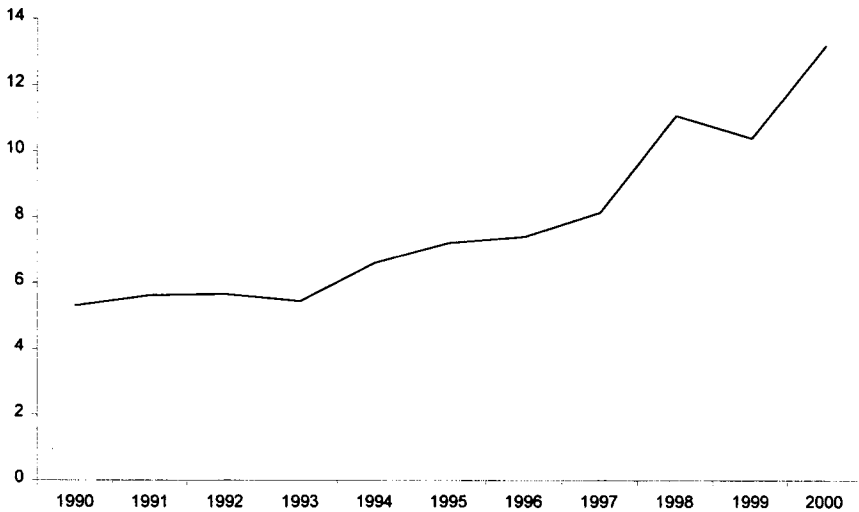


Figure 28 - Standard deviation number of analysts per firm and year

An interpretation of this increasing trend is that firms increasingly differentiate themselves on the basis of the number of analysts they employ. This may be an indication that the number of analysts is seen as an important marker of a firm's differentiation in the industry. If this trend was merely an effect of a few large firms growing larger and the rest remaining more or less the same in terms of security analysts employed, the number of analysts employed per product marketed should then remain relatively constant. Plotting the number of analysts employed per firm in a certain year divided by the number of products marketed by the firm that year suggests that this is not the case (Figure 29).

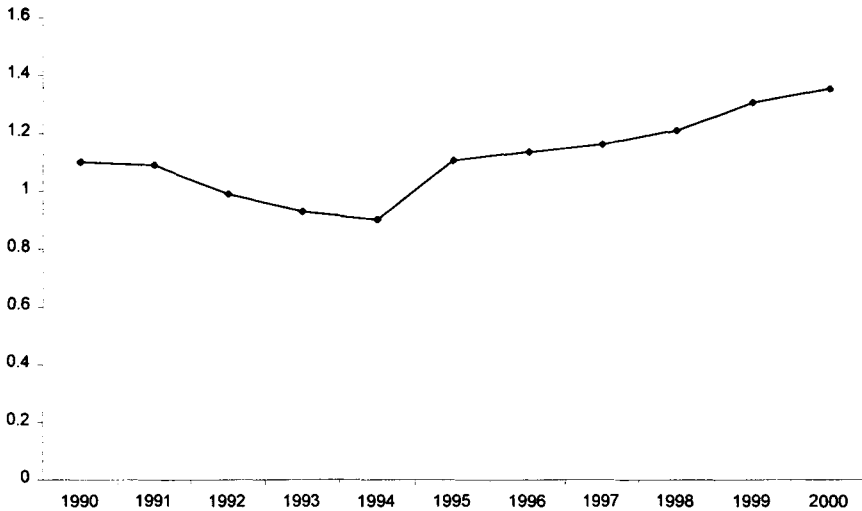


Figure 29 - Analysts employed per product

As seen in Figure 29 there is an increasing trend with an average of 1.3 analysts employed per fund marketed in 2000, as compared to 1.1 in 1990. Arguably there is thus a case to be made that the number of security analysts employed is an indicator of how much a firm wants to be seen as legitimate. The source of legitimacy comes from an institutionalized idea that the mutual fund industry is really about competing on active asset management and that security analysts are central to this effort.

One last issue to discuss is the use of an absolute number of security analysts, as opposed to a ratio. From the point of view of minimizing covariation with other variables it would have been preferable to use a ratio variable to proxy the institutional embeddedness of firms. However, the preferred ratio - analysts per mutual fund marketed - proved too difficult to operationalize in a rigorous way for all the firms in the sample. Due to a change in the legal rules under which mutual funds are registered in Sweden in 1991, all mutual funds had to be re-registered with the Swedish Financial Supervisory Authority (*Finans Inspektionen*). As a result all the funds were recorded as 'new' in 1991, regardless of whether they had actually been started in 1958 or not. While it did not prove impossible to trace the origins of most funds

back before 1991<sup>72</sup> by accessing archive records of the firms as well as annual reports, it did prove a more or less impossible task to correctly assess the historical lineage of all the funds. Because it is administratively difficult to 'kill' a mutual fund, most of the reductions in product portfolios of mutual fund firms are carried out through mergers and sales of funds. While there are not very many mergers and sales (the attrition rate is about 2 per cent per year, (Engström, 2001)) it still adds up to a large number over a period of thirty years. Asserting a proper firm-level estimate of funds existing at a single point in time was therefore problematic<sup>73</sup>. An inaccurate estimate of the number of products marketed in a certain year may have a large effect on a small firm employing, say, two analysts. The number of security analysts employed in a certain year, on the other hand, could be retroactively ascertained with greater accuracy through interviews and archive records. Therefore in the interest of having a robust measure, the institutional 'marker variable' was chosen as the **Number of analysts** employed by a firm in a certain year.

The rest of the variables are rather straightforward in their definition, mainly following earlier uses in the empirical literature and are discussed in the data section.

#### 4.3.2 *Model structure*

The hypotheses forwarded in chapter three provide a number of theoretically interesting variables that may influence the diffusion of the two product categories. A heterogeneous diffusion model allows for the identification of each of these variables as affecting the propensity, susceptibility and social proximity of a focal firm (Strang and Tuma, 1993; Greve, 1995). Variables are allocated to their respective covariate vectors according to theoretical criteria. Variables theorized to affect the likelihood of a firm introducing a new product in general (without the influence of earlier adoptions) were located in the propensity vectors. Typically these are firm characteristic variables such as size and age, but also environmental control variables such as competitive intensity. Variables thought to affect the influence of earlier adoptions on

---

<sup>72</sup> All the products in the sample have a correct starting date, but their later fate is not always fully known, see discussion in data section.

<sup>73</sup> The above figure of the average number of analysts per fund is based on the not entirely accurate numbers of funds marketed, but the accuracy is deemed sufficient for the purposes of illustrating a trend.

the decision of a focal firm to introduce a product were introduced in the susceptibility vector, and finally a measure for the social proximity of firms was introduced in the social proximity vector.

Where the variable has a theoretically ambiguous vector assignment, a 'parallel search method' can be used to correctly assign variables to vectors (Greve et al. 1995). The method involves introducing the variable into both the plausible vectors and estimating the model to see in which vector the variable provides the best fit. Greve et. al. (1995) show that the model in most cases can identify misspecifications of model structure and a parallel search strategy can show to which vector a variable really belongs. A firm's **Age** and **Size**, for example, could theoretically be argued to affect both the propensity as well as the susceptibility of a firm to adopt a new product. Initial runs using a parallel search strategy indicated that their effects were mainly in the propensity vector. **Number of analysts** as well as **Average fund size**, on the other hand, showed in initial runs to have effects in both the vectors, and these variables were subsequently included both in the propensity as well as the susceptibility vectors.

The following three sections discuss the variables included in the three vectors of the model – the propensity, susceptibility and the social proximity vectors.

#### 4.3.2.1 The propensity vector

The propensity vector captures the adoption influence that operates independently of earlier adoptions. Hypotheses 1,2 and 3 all deal with the introduction of new funds into a community of adopters and therefore the variables used for testing these hypotheses were included in the propensity vector. Hypothesis 1 relates **Firm size** to the likelihood of new product introduction. Hypotheses 2a and 2b relate firm centrality, in terms of **Number of security analysts**, to the likelihood of new product introduction, whereas hypothesis 3 tests the relationship between perceived product profitability (**Average fund size**) and the likelihood of a product introduction. Apart from these hypotheses, a number of control variables are also included in the propensity vector. **Firm age** and **Firm size** are entered to control for both inertia (Hannan and Freeman, 1984; Gresov et al. 1993) as well as the effect of an increased resource base of larger and older firms (Damanpour, 1991; Barnett, 1997). To control for the effect of the market environment on the likelihood of firms introducing new products (Kelly and

Amburgey, 1991; Greve, 1996), a measure of **Resource availability** (size of market / firms in the market) is also introduced. Lastly, as the analysis uses repeated events control variables for the number of **Prior adoptions** and the length of the **Last spell** (the time between two successive introductions) by the focal firm are entered in the propensity vector.

#### 4.3.2.2 The susceptibility vector

There are several variables that, theoretically, predict how earlier adoptions influence the adoption behavior of a focal firm. These variables include how well products with similar investment objectives have done, the number of security analysts in the focal firm and the social network of the focal firm. Economic theory suggests that firms are highly sensitive (susceptible) to earlier adoptions of products that proved to perform well, resulting in fast imitation of successful products (Khorana and Servaes, 1999). Similarly, Davis and Greve (1997) find that innovations that have cognitive legitimacy within an adoption community spread mainly through the observations of successful adoptions by other market contacts or reference group members. To capture this effect, the **Average fund size** is included in the susceptibility vector as an adoption that is perceived as successful is more likely to be noticed and imitated, in line with an economic argument (c.f. Haveman, 1993; Haunschild and Miner, 1997). The profitability of earlier product adoptions is operationalized in the variable **Average fund size**, measuring the average size of the mutual fund in a particular category for a particular year.

The **Number of analysts** variable, on the other hand, is included in the susceptibility vector mainly on the basis of institutional theory considerations. Davis and Greve (1997) show that innovations considered controversial in a business community are more likely to spread through close personal networks - in their case elite corporate executive networks. With respect to the mutual fund industry in Sweden, the personal networks among security analysts are strong (as discussed in chapter three) and they are thus likely to provide an important 'diffusion channel' for the influence of earlier adopters with respect to the adoption of controversial innovations. The intuitive understanding is that if a firm has analysts with professional contacts in a firm that has earlier adopted a controversial product, such an adoption is more likely to influence the decision of the focal firm to adopt than



an adoption by a firm without such professional network ties. The number of security analysts thus works as a proxy of how well integrated into the professional network of security analysts as firm is. To control for the effects of recent performance on the general likelihood of action, **Firm performance** is included as a control variable in the susceptibility vector (c.f. Miller and Chen, 1994b).

#### 4.3.2.3 Social proximity

The contagion effect in the model is the product of how likely the firm is to act on information received (susceptibility,  $\beta$ , - see above) and how likely it is to receive information in the first place (social proximity to earlier adopters,  $\delta$ ). The main idea behind the social proximity indicator is that not all earlier adoptions are as influential on the adoption decisions of the focal firm, but that the adoption of proximate or salient other firms would matter more (Strang, 1991). Social proximity can, in this model, be operationalized in either of three ways - by a social distance measure, a social proximity matrix or by list-like social proximity indices. The model can also estimate the simultaneous use of several measures (Strang and Tuma, 1993).

There are a number of social dimensions by which firms may consider themselves more or less proximate to other firms. In this dissertation, a single list-like proximity measure is used primarily because of the results of the qualitative study reported in chapter three. Interviews with CEOs in the industry indicated that when categorizing other firms they tended to use either size or corporate parenthood (e.g. bank, insurance firm, independent brokerage) for the firm in question. Using a continuous social distance measure, while possible for the firm size variable, seemed unnecessarily complicated. Firm sizes in the industry divide fairly neatly and into three groups of very small (0-1.99 per cent market share), medium (2 - 9.9 per cent) and large (10 per cent +) that are stable over time. Corporate parenthood is an even more 'natural' non-continuous variable where there are five groups of ownership widely recognized in the industry (bank, insurance, brokerage, other firms and independent [no parent]). Two indices were constructed - a similar-size index (three groups) and a same parenthood index (five groups). Of these two indices, interviews suggested that the corporate parenthood index would be the most relevant with respect to categorizing firms into competing groups. The reason was that corporate parenthood was seen as a convenient indication of whether or not

a firm has access to an existing distribution channel (i.e. retail banks and the office networks of insurance-firms), or whether it needs to do without. Thus a corporate parenthood similarity index was chosen as a proximity index in this study<sup>74</sup>.

As the social proximity vector is perhaps the most different feature of this model as compared to standard diffusion models, it is worthwhile clarifying how it works. Greve (1996, pg. 17) provides an illustrative example of how the heterogeneous diffusion model estimates hazard rates of individual firms using social proximity indices. While he uses three different social proximity measures in his analysis, the example is modified here to fit this dissertation where a single social proximity measure is used. Assume that a firm (that has yet not adopted) has at time  $t$  witnessed fifty earlier adoptions, out of which two are by socially proximate firms. The social proximity measure of the set of pervious adopters,  $S(t)$ , are either set to one or to zero, depending on whether or not the earlier adopter is socially proximate or not. The hazard rate for the focal firm is then estimated as:

$$r_{ij}(t) = \exp(\alpha' x_n) + \exp(\beta' v_n) \sum_{s \in S(t)} \exp(\delta' z_{ns})$$

In this case the sum of all  $z$  variables (social proximity indicators) are zero for forty-eight of the terms and one for the remaining two. Inserting values and taking the exponent of zero for the forty-eight baseline adoptions and collecting the terms of the sum there is:

$$r_{ij}(t) = \exp(\alpha' x_n) + 48 \exp(\beta' v_n) + 2 \exp(\beta v_n + \delta)$$

The baseline contagion effect consists of the forty-eight firms that do not belong to the reference group and the estimate of  $\delta$  indicates whether the adoption by a socially proximate firm is more ( $\delta > 0$ ) or less ( $\delta < 0$ ) influential than the adoption of a firm outside the proximate group.

---

<sup>74</sup> There are significant overlaps in this industry between a size based proximity index and a parenthood based index (banks and insurance firms are the largest actors), using a size based index in the analysis provides the same substantive results, but a worse model fit.

#### 4.3.2.4 Model structure

Figure 30 shows the entire model with variables (independent variables in bold and control variables in italics). This is the 'base-case' as modeled from theory. In the next chapter, this model is elaborated with the introduction of two alternative 'marker' variables to further test the robustness of the findings. However, for pedagogical reasons the introduction of these variables into the model are postponed until later.

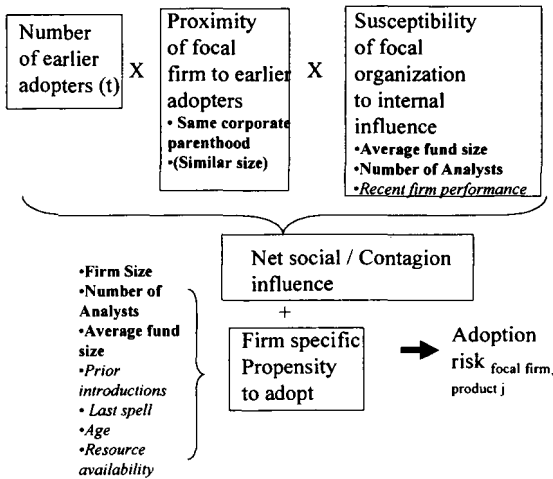


Figure 30 – The analysis model with variables

The next section describes the data used in estimating this model.

#### 4.4 Data

The data was gathered over a number of years. Starting with a pilot study in 1998/1999, a few fund introductions, selected on the basis of interviews, were studied quantitatively. Encouraged by the results from this initial study, reported in (Jonsson, 2000), data was gathered on a full-scale in 1999/2000. Initially the aim was to gather a complete data set on all product introductions that had taken place in the entire history of the mutual fund market. While this aim was achieved with respect to product introductions, it proved a much tougher challenge to obtain the necessary covariate data for the period 1958 – 1989. In the end an observation window for covariates from 1989-01-01 – 2000-12-

31 was selected, as this was the period for which obtaining covariate data was feasible.

#### 4.4.1 Sample

The population of potential adopters included all mutual fund firms operating in Sweden at any time during the period 1989-01-01 through 2000-12-31. The possible events of these firms were the introduction of either an *Index* or *SRI* funds, or the adoption of a *Mixed asset* fund. These three product categories were chosen because they were the least left-censored product categories, given the covariate observation window (see Figure 31). Other product categories proved too highly left-censored to allow for reliable estimation.

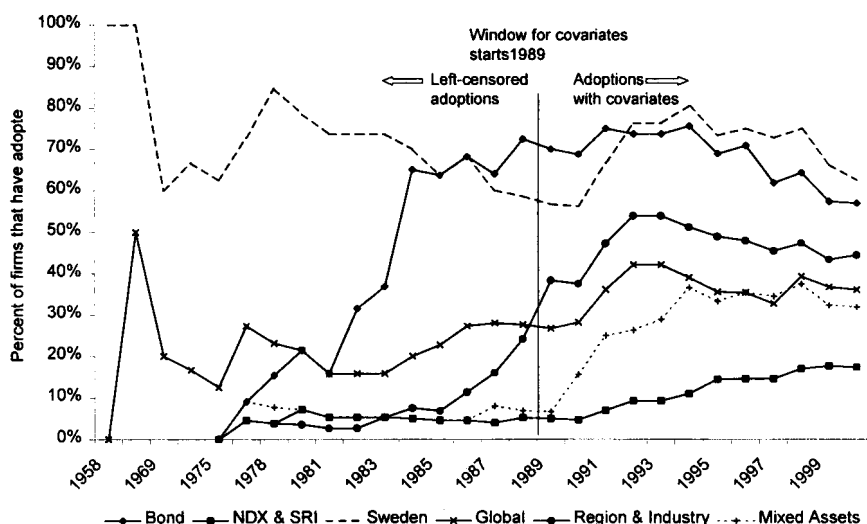


Figure 31 – Product adoptions and covariate observation window

Global funds, for example, had diffused approximately as widely as mixed asset funds by 2000, but a larger part of the adoptions took place during the mid 1980's, outside the covariate observation window. The heterogeneous diffusion model can handle a moderate number of left censored events, if a proper sample correction scheme is used (Greve et al., 2001), but when the share of left censored observations is more than 10-15 per cent there are problems in obtaining proper coefficient estimations.

The product categories under investigation (*SRI/Index* and *Mixed assets* funds) were introduced into the market more or less in the period 1989 to 2000. The few adoptions that took place prior to 1989 (<10

per cent) were included in the analysis, with zero weight, as a sample correction scheme (Greve et al. 2001). In all there were 94 observed entries into *Index* and *SRI* products and 104 into *Mixed asset* products in a total of 494 spells (organization years) observed.

#### 4.4.2 *Dependent variable*

Day, month and year of product introductions was collected from the Swedish Financial Supervisory Authority – *Finansinspektionen* (FI). All mutual funds introduced in the Swedish market are sanctioned by and registered with FI. This data gives the day of the permit granted by the FI and not the day the decision to adopt was taken in the firm, nor the day the product is actually launched in the market<sup>75</sup>. As there is no reason to expect that any particular actor would be particularly late in applying after a decision is taken, nor that any particular actor would systematically delay product introduction after a permit was obtained, the problem for the analysis seems limited.

Collecting the data for product introductions prior to 1991 on the other hand was problematic. When the new law regulating mutual funds in Sweden was introduced in 1991, all existing mutual funds were required to re-register with the FI. This new registration coincided with the introduction of a new computerized registry system at the FI, and all the funds were entered as newly started after 1991, regardless of whether they had been introduced in 1958 or in 1990. Furthermore the register of mergers and closures of mutual funds prior to 1991 was not computerized, but instead relegated to the national archives for storage. To ascertain the correct starting date of the mutual funds it was therefore necessary to trace the lineage of each of the mutual funds with an introduction date of 1991 back through the annual reports of the mutual fund firms. There were, in total, about 300 fund introductions prior to 1990. While the annual reports most often provided a correct starting date for the mutual fund, mergers of funds and sales to other firms were more problematic to handle. For some mutual funds a correct 'historical lineage' was only possible to verify by the help of the back-office staff of the mutual fund firm who could interrogate their computer systems for traces of mergers and sales. Even so, some of the

---

<sup>75</sup> According to interviews the lag -time was usually short, as most firms were eager to introduce funds they had applied and been granted permits for.

mutual funds were not possible to trace back entirely, but all the *Mixed asset*, *SRI* and *Index* products have been fully traced back to their origin.

In the analysis in chapter five, *Index* and *SRI* are treated as one single adoption category for which the diffusion process is jointly estimated, assuming that they share the main characteristics of the diffusion mechanisms. Combining these two products into one adoption category serves both a theoretical as well as a practical purpose. Firstly, the hypotheses predict that these funds will be treated similarly in the adoption process due to their common deviation from norms (see discussion in section 3.5.1.4) rather than other product characteristics. If they do display similar diffusion processes it is an indication that there is something that renders them similar in the way firms conceive of them as new innovations. Secondly, from a practical point of view, there are not enough adoptions of either of the two fund types to allow for a proper estimation of the model elaborated above treating the adoptions separately. Testing the effect on the model fit of pooling these two product categories<sup>76</sup> shows that there are some differences with respect to the estimation of the propensity of firms to adopt either of the products. The contagion mechanism, on the other hand, can be estimated as a pooled sample without a significant loss of model fit.

#### 4.4.3 *Independent variables*

**Perceived profitability:** The main economic predictor of the speed of adoption is the perceived profitability of the innovation (**Average fund size**). This variable could be measured in several ways and the ideal measure would be to have exact profit figures. As these are not available a proxy is used – the average fund size in the product category (c.f. Khorana and Servaes, 1999). To illustrate, if there are five firms that sell *East Europe* funds in a particular year, the average fund size<sup>77</sup> is taken as the average fund size of *East Europe* funds. The variable is updated annually. This proxy is useful as managers are likely to look to earlier adopters of funds in the category and the size that these funds have attained and the average size of the funds in the category would give a rough indication of how successful the product category has

---

<sup>76</sup> Results in Appendix I to this chapter.

<sup>77</sup> Alternatively the smallest or largest fund value could have been taken, but such a measure does not capture the competitive effects of new entrants as well as an average value does.

been. Average fund size was coded from several sources. Firstly, annual reports provided data on fund size for the early years of the analysis. Secondly, a parallel research project on performance predictors of mutual funds (Dahlquist et al. 2000) kindly shared their data and thirdly, *Morningstar* (Sweden) also agreed to share their database with fund sizes values from 1995 onwards.

**Firm size** is commonly predicted to affect adoption behavior positively through the wider resource base of a larger firm (Mansfield, 1961; Damanpour, 1991). As a measure of **Firm size**, annual market share data of individual firms was coded from the industry newsletter *Fond och Bank*. This measure is based on the share of total stock of assets under management. The natural log value of the market share value is used in the analysis as the difference in relative changes across years for small and larger firms otherwise may be misleading (c.f. Haveman, 1993). While other measures of size (e.g. employees) could have been used, market share was chosen as it is the most frequently used firm-size measure by industry analysts. Furthermore, this measure is appropriate given the difference in organizational structure between a mutual fund firm that is a subsidiary and an independent mutual fund firm.

The **Number of analysts** employed by a mutual fund firm at a particular point in time was collected from a number of sources and is updated annually. It was problematic to obtain this data as none of the firms had kept a record of how many analysts had been employed in a mutual fund firm at a particular time. The main source of information was the annual member rosters of the Swedish analyst association (*SFF*) from 1990 – 2001 detailing firm and position of individual financial analysts. More than 5 500 person-years of employment were recorded from this source, which also provided information about how often analysts changed jobs<sup>78</sup>.

There are three main limitations on this data. Firstly and most seriously not every financial analyst employed by a mutual fund firm is a member of the *SFF*. Secondly, not all membership records provided the specific position of an individual within the corporation. For pure mutual fund firms the latter issue was not a problem but other firms – in particular the banks – employ financial analysts in a variety of posi-

---

<sup>78</sup> For reasons of personal privacy these data records contain no personal information on the individual security analyst.

tions across most of their constituent business units (from regular bank offices to corporate finance). Thirdly, these are annual catalogues and changes of jobs during the year will be recorded with some delay. The first two problems were attended to by expanding the sources of data collection. First annual reports of firms were investigated, where analyst strength and in many cases individual employment histories were reported from about 1994. For the earlier time period, 'old timers' of the mutual fund firms concerned were interviewed. In two cases direct help from the personnel department of the mutual fund firm was employed. The final compilation of employment figures was verified through telephone interviews with 'old-timers' in each firm - checking the estimated number of employees per year. The last limitation to the data source, recording employee changes only once a year is not likely to bias the results and is thus not seen as problematic.

#### 4.4.3.1 Additional marker variables to test findings

To test the findings from the initial model specification, two additional 'marker' variables are introduced in subsequent analyses in chapter five. The first variable is a proxy of the public legitimacy of a product category. To construct this variable, the number of articles written about a product category per year is counted. Such a count is highly correlated with **Average fund size** (0.75), either because a successful fund becomes well publicized, or vice versa. As the effect of average fund size is already part of the analysis, the proxy of public attention needs to be standardized with respect to the covariance with average fund size. Therefore the measure of **Media attention** is constructed by dividing the number of articles about a product category in a year by the average fund size in that category and year. An intuitive understanding of the construct is the media attention afforded to a product category in relation to its perceived success. A product category that is highly successful and is often written about in the media will thus have a lower **Media attention** number than a fund category that is equally well publicized but shows only moderate performance.

From an economic theory point of view, more publicity should be better, provided that it is not predominantly negative press; where a rough content analysis indicates that it is not (see section 3.9 for details). An institutional prediction, on the other hand, is that adopters of a controversial product would be keener to seek legitimizing support from the media than would a firm introducing an already legitimate



product (c.f. Ruef and Scott, 1998). Data for the media attention variable was collected from *Affärsdata*, a database covering economic reporting in Swedish newspapers and magazines from 1980 and onwards. The number of articles containing a reference to the particular fund category is counted per year. To control for a general increase in magazine coverage in the database as well as for an increase in the number of magazines and newspapers over time, the counts are deflated by an article index where 1980 = 100 (c.f. Abrahamson and Fairchild, 1999). The variable is lagged by one year.

The second marker variable introduced is a proxy of how involved a firm has been in the workings of the *Swedish Financial Analysts Association* (SFF). The idea is that firms that have been involved in the SFF are more likely institutionally embedded than firms that have not (c.f. Greenwood et. al., 2002). For each firm, a dummy variable (**SFF Chair**) is set to 1 if the firm employs a person who has at any time been a chairperson of the SFF. Such a variable, however, is correlated with the **Number of analysts** a firm employs (correlation is 0.45). Some of the smaller firms (in absolute size) have however been very active in the association, and to clean out a bias of firms with more analysts from the variable, the **SFF Chair** is divided by the **Number of analysts** variable. The measure thus provides an indication of how active a firm has been in the SFF, regardless of size.

#### 4.4.4 Control variables

A concern with the standard diffusion model is the assumption of firm level homogeneity in the likelihood of acting on information received. Findings from studies on firm responsiveness to competitive moves suggest a relationship between firm level inertia and responsiveness to competitive activity (Gresov et al. 1993; Miller and Chen, 1994b; Greve, 1996). The classic formulation of organizational inertia is that of Hannan and Freeman (1977) where age and administrative complexity are suggested as prime drivers of inertia. Miller and Chen (1994b) find little support for age and size related competitive inertia. However, looking at motivation factors behind competitive inertia they find that airlines that performed well in the recent past are less likely to respond quickly to tactical moves (product changes) by competitors. Similarly, Greve (1996) shows that recent ownership change reduces inertia and Greve (1998) shows that firms experiencing performance

below expectations are more likely to incur risky organizational change<sup>79</sup>.

To control for various sources of competitive inertia recent **Firm performance** and firm **Age** are entered as control variables. Assuming historical aspiration levels as points of reference of organizational action, the change in performance of a firm in relation to its historical performance is likely to trigger organizational action (Levitt and March, 1988; Greve, 1998). While this is clearly a simplification of a theoretically complex and contested case (see Greve, 1998) it will suffice for the purposes here. Change in market share from one year to another was used as a proxy of recent change in firm performance (**Firm performance**). This may not be an ideal measure of performance as it is a compound figure of the change in sales as well as the change in the value of the stock under management<sup>80</sup>. A measure separating these two effects into net flow (how much a firm manages to sell in a period) and stock appreciation (how well it manages funds and increases its stock value in this period) would have been preferable. Such data is regrettably only available from 1999 onwards and efforts to distinguish these effects in the aggregate data available are coupled with a number of practical issues. On the other hand, firms earn their revenues from a percentage management fee on the whole stock under management, not only on new sales, which means that a change in total stock value should be regarded as a reasonable proxy of change in performance of a firm.

Competitive intensity in the market is also commonly thought to have effects on how likely firms are to adopt innovations (Greve, 1996). A measure of **Resource availability** is derived by dividing the total asset base of the market (resources that firms can compete for) by the number of firms active in the market at the time (firm density). The publishers of the industry newsletter *Fond och Bank* provided data on stock of assets under management for the years 1989 – 2000. Annual stock values were then deflated using the consumer price index (1980=100) to reflect a value in constant SEK. Firm density (the number of firms in the market in a year) was calculated from data on firm

---

<sup>79</sup> Firm sensitivity to changes in performance is not found to be symmetrical, but has an inflection point around some threshold value. For the sake of simplicity, this is ignored here.

<sup>80</sup> Recall that market shares in this industry are calculated as the share of total stock of the money under management.

entry and exits collected from *Finansinspektionen*. As the analysis uses repeated events (see discussion above), the number of **Prior events** and last waiting time (**Last spell**) for the focal firm are included to control for firm and event order specific biases in introduction behavior (Allison, 1984; Blossfeld and Rohwer, 1995).

#### 4.4.5 Descriptives

Table 3 shows the means, standard deviations and Pearson correlation coefficients for the variables. To enable proper estimation using the Maximum-Likelihood method, some of the variables needed to be re-scaled to minimize the difference in standard deviation between the variables (Long, 1997).

Table 3 – Means, Standard Deviations and Pearson correlation coefficients

	Mean	Std. Dev	2	3	4	5	6	7	8	9	10
1. Prior events (Adoptions)	1.241	2.623	0.061	0.489**	0.028	0.285**	0.293**	0.745**	0.384**	-0.017	0.209**
2. Last spell (Months)	0.183	1.179		0.078	0.047	0.125**	0.118**	0.201**	0.08	-0.006	-0.008
3. Number of Analysts (Person -years / 10)	1.008	1.073			0.096*	0.633**	0.64**	0.472**	0.287**	0.019	-0.046
4. Firm performance (% mktshare change * 10)	0.096	0.853				0.09*	0.143**	0.024	-0.066	0.049	-0.018
5. Age (Years)	11.32	9.77					0.616**	0.226**	0.013	-0.019	-0.20**
6. Firm size (Ln [% marketshare * 100])	0.025	2.04						0.262**	-0.059	0.054	-0.035
7. Average fund size (SEK 100 Mill <sup>a</sup> )	1.436	2.884							0.437**	0.036	0.105*
8. Resource availability (SEK Mill / Firms)	6.09	3.162								-0.055	0.341**
9. SFF Chairperson (Dummy / Number of analysts)	0.188	0.546									-0.049
10. Media attention (Articles / Average fund size) <sup>a,b</sup>	1.24	2.931									

N = 494 \*\* Correlation significant at 0.01 level (2 tailed); \* Correlation significant at 0.05 level (2 tailed)

<sup>a</sup> - Deflated 1980 = 100

<sup>b</sup> - Lagged by one year

The heterogeneous diffusion model can handle correlation among variables well, as long as the correlated variables are entered into different vectors. Potentially troublesome correlations in Table 3 are thus those above 0.5 between variables in the same vector. In the *propensity* vector, both **Prior** and **Average fund size** are included, as well as **Age** and **Firm size** and **Number of analysts** and **Age**. The main risk of including highly correlated variables in the same vector is that they may create spurious interaction effects in the estimation. Such effects can be suspected if the addition or deletion of one of the correlated variables significantly alters the estimate of the other variable, or if the impact on the model fit is abnormally large. Dropping **Average fund size** does not significantly alter the estimate of the **prior** coefficient, nor of the coefficient of the **Number of analysts** variable. Similarly, excluding either **Age** or **Firm size** from the analysis does not significantly alter the estimated coefficient of the other variable<sup>82</sup>, indicating that estimation problems due to covariate correlation seem limited. There is no problematic correlation between the variables in the susceptibility vector.

The next, and closing, section of this chapter discusses how the hypotheses of chapter three are tested.

## 4.5 Hypothesis testing

The general strategy of hypothesis testing is to first estimate the model as specified from the theoretical reasoning in chapter two and three. The robustness of these findings is tested by introducing two new 'marker' variables, as described in section 4.4.3.1. The 'base-case' model reads as:

---

<sup>82</sup> See Appendix II to this chapter for results.

$$r_{nj}(t) = \text{Propensity} + \text{Contagion}$$

**Propensity**

- Intercept
- +  $\alpha_0$  Prior Adoption
- +  $\alpha_1$  Length last spell
- +  $\alpha_2$  Firm age
- +  $\alpha_3$  Firm Size
- +  $\alpha_4$  Resource availability
- +  $\alpha_5$  Number of analysts
- +  $\alpha_6$  Average fund size

**Contagion**

- Intercept
- +  $\beta_0$  Average fund size
- +  $\beta_1$  Number of analysts
- +  $\beta_2$  Firm performance  $\beta$

X  $\sum (\text{Base line adoptions}_{(t)})$

+ Intercept

- +  $\beta_0$  Average fund size
- +  $\beta_1$  Number of analysts
- +  $\beta_2$  Firm performance  $\beta$

X  $\sum (\delta_0 \text{Socially proximate adoptions}_{(t)})$

The predicted signs for the hypotheses are summarized in Table 4.

Table 4 - Predicted results in the analysis

Hypothesis	Predicted signs*
<b>The introduction of products</b>	
1: The size of a mutual fund firm is positively related to the speed of adoption of product innovations	$\alpha_3 > 0$ for $j = 1, 2$
2a: <i>Mixed asset</i> funds are introduced by central firms	$\alpha_5 > 0$ for $j = 1$
2b: <i>Index and SRI</i> funds are introduced by marginal firms.	$\alpha_5 < 0$ for $j = 2$
3: The size of earlier mutual funds with the same investment objective is positively related to adoption speed	$\alpha_6 > 0$ for $j = 1, 2$
<b>The diffusion of products through the industry</b>	
4a: <i>Mixed asset</i> funds spread from central to marginal actors (faster diffusion)	Correlation of adopter rank and size $< 0$
4b: <i>Index, SRI</i> funds spread from marginal to central actors (slower diffusion)	Correlation of adopter rank and size $> 0$
5a: <i>Mixed asset</i> funds diffuse through local market contacts and through cohesive firm-level networks (drawing on cognitive legitimacy)	$\delta > 0$ and $\beta_0 > 0$ for $j = 1$
5b: <i>Index, SRI</i> funds spread through personal/professional networks (drawing on moral legitimacy).	$\beta_1 > 0$ and $\delta$ not significant for $j = 2$

\* $j=1$  (Mixed assets fund);  $j=2$  (Index & SRI Fund)

Testing hypotheses 1–3 is rather straightforward. Single coefficient signs are inspected as to whether or not they conform to the predicted signs. Testing hypotheses 5a and 5b is slightly more elaborate. Support for hypothesis 5a requires the significance and positive sign of both the coefficients for **Average fund size**  $\beta_0$  and **Social proximity**  $\delta_0$ . Recall that a *Mixed assets* product is hypothesized to spread by observed performance ( $\beta_0$ ) mainly along contacts with firms deemed similar ( $\delta_0$ ). Support for hypothesis 5b, on the other hand, requires that  $\beta_1$  (**Number of analysts**) is positive and significant, while  $\delta_0$  (**Social proximity**) is insignificant. Hypothesis 5b suggests that *SRI* and *Index* funds lacking in cognitive legitimacy, need to draw on moral legitimacy and are therefore primarily spread along personal networks ( $\beta_1$ ) and not along other structural lines, leaving the social proximity coefficient ( $\delta_0$ ) insignificant. Recall from the discussion in section 4.3.2.3 that an insignificant  $\delta_0$  does not mean that earlier adoptions do not matter, but that the adoption of an ‘in-group’ member does not matter more or less than the adoption of any other firm.

Hypotheses 4a and 4b (relating **Firm size** to adoption order) are tested using a different method. Based on the adoption rank of the adopting firms and their size, a non-parametric correlation between firm size and order of adoption (*Spearman's rho*) is estimated for each of the product classes. Support for hypothesis 4a requires a negative correlation between firm-size and rank, whereas support for hypothesis 4b requires a positive correlation. The plausibility of the hypotheses is also discussed by inspecting a graph of firm-size relation to the timing of adoption.

The stage is now set for the testing of the hypotheses in chapter five.

## 4.6 Appendix I: Analysis of pooling Index and SRI funds

In this appendix the effect of treating *Index* and *SRI* funds as one common product category with respect to their diffusion processes is tested explicitly. This is done by estimating the base-line model, using only the transitions to (adoptions of) *Index* and *SRI* funds and constraining the variable coefficients (apart from the intercepts) to be equal across the two adoptions. If there is no difference in the diffusion processes between the two fund categories there should be no significant loss of model fit from constraining the variable coefficients (Greve, 1998).



Table 5 - Analysis of pooling index and SRI funds

Propensity ( $\alpha$ )	Pooled Index and SRI		$\chi^2$ - value of constraint (1 d.f.)
	Index	SRI	
Intercept	-1.813*** (0.4346)	-0.949*** (0.3606)	
Prior adoption	0.5417*** (0.04715)		0.24
Length last spell	-14.06 (11.66)		0.19
Firm age	-0.027 (0.03171)		41.08***
Resource availability	0.2*** (0.0444)		42.88***
Firm size	0.5737*** (0.1497)		36.93***
Number of analysts	-5.070*** (1.611)		42.67***
Average fund-size	0.3485*** (0.0994)		0.39
Susceptibility( $\beta$ )			
Intercept	-6.043*** (0.5)	-6.215*** (0.5769)	
Average fund-size	-0.03 (0.0816)		0.0
Number of analysts	0.5349*** (0.1614)		0.0
Firm performance	0.4771*** (0.1268)		3.01*
Social proximity ( $\delta$ )			
Same type	-0.72 (1.114)		1.87
Model log likelihood (against base-line model)		-149.477	
Log likelihood test (d.f.)		205.08*** (15)	

\*p < 0.1; \*\*p < 0.05; \*\*\* p < 0.01 All significance test are two-tailed. Standard errors in parenthesis.

As can be seen in the table, the model fit is significantly negatively affected by constraining four propensity variables - **Firm age**, **Firm size**, **Resource availability** and **Number of analysts**. Treating

the transition to either of the two products categories as an outcome of the same underlying diffusion process is obviously troublesome with respect to the influence of these four variables on the *propensity* of a firm to adopt these products. With respect to the *susceptibility* and the *social proximity* effects of firms to adopt these products, there are no significant differences in how the variables influence the diffusion processes of the two product categories. This can be seen as it is only constraining the **Firm performance** variable that provides a significantly worse model fit with respect to the susceptibility vector.

What does this say about the coming analysis in chapter five? From the point of view of modeling the *propensity* of firms to adopt the different products, it would be desirable to separate the two product categories. However, for estimating the *susceptibility* and *social proximity* effects, pooling Index and SRI adoptions does not seem to matter. Given the limited number of observations available in each of these product groups, the analysis will treat the adoption of the two product categories as reflecting one underlying diffusion process. Unfortunately a likely consequence is that the risk of *type II* errors (rejecting a hypothesis when it is in fact supported) increases, as the quality of the propensity coefficient estimates of the *Index* and *SRI* funds is likely to be degraded. This needs to be kept in mind in the following chapters.

#### 4.7 Appendix II: testing effects of dropping correlated covariates

In this second appendix the robustness of the suggested base-line model is investigated with respect to the effect of the observed correlation among variables included in the same vectors. The model is re-estimated a number of times dropping, in turn, variables that correlate in a worrisome way in Table 3. If the omission of a variable causes unpredictable or very large changes in other variables there may be reason to suspect estimation problems in the model due to correlation. For ease of reading, the following table is restricted to only the variables indicated in chapter four as potentially worrisome, and the effects on other variables of their omission.

Table 6 - Effects of dropping correlated variables

Index/SRI	Variable dropped			
	Base line	Firm size	Firm age	Average
Intercept	-	***	-	-
Prior adoption	***	***	***	***
Length last spell	-	-	-	*
Firm age	-	*	Dropped	**
Resource availability	***	***	***	***
Firm size	***	Dropped	***	***
Number of analysts	*	***	***	***
Average fund-size	***	***	***	Dropped
$\chi^2$ destination <sup>a</sup>	N/A.	31.02***	0.29	0.52
<b>Mixed assets</b>				
Intercept	+	-	***	-
Prior adoption	***	***	***	***
Length last spell	**	-	-	**
Firm age	***	***	Dropped	***
Resource availability	***	***	***	***
Firm size	***	Dropped	-	+
Number of analysts	***	***	**	***
Average fund-size	**	**	+	Dropped
$\chi^2$ destination <sup>a</sup>		5.05 ***	14.68 ***	6.73 ***

\*p < 0.1; \*\*p < 0.05; \*\*\* p < 0.01 All significance test are two-tailed. Standard errors in parenthesis. <sup>a</sup> H0: base-line is better.

As seen in Table 6, there were few significant cross-effects in the estimations of dropping correlated variables. All the models where variables had been dropped also provided a worse (but not extremely so) model-fit. One noteworthy effect, however, was the loss of significance of the **Average fund size** estimate for *Mixed assets* fund adoptions when the **Firm age** variable was dropped. While the sign remained the same (+), it is slightly worrisome that a variable which is significant in the base-line model loses significance when a correlated variable is dropped from the estimation. This potentially worrisome estimation issue needs to be kept in mind when interpreting the coming analysis.

## Analysis and Results

---

THE EMPIRICAL QUESTION of this dissertation is how norms of how to compete and economic incentives together affect the product introduction behavior of firms. In chapter three it is argued, based on interviews as well as historical data, that *Mixed asset* funds are considered non-controversial (legitimate) products in the industry whereas *Index* and *SRI* funds are not. The difference in legitimacy of the products would, as the institutional argument of chapter two goes, bias mainly institutionally embedded firms against adoption of *Index* and *SRI* fund and, in the aggregate, lead to a slower and differentiated diffusion of these products. A rival explanation is the economic diffusion model, where a difference in diffusion speed of two product categories is due to profit differentials across the products. *SRI* and *Index* funds would, according to this explanation, diffuse more slowly if they were considered less profitable. This chapter tests these arguments empirically through studying the diffusion processes of *Mixed asset* funds as well as *Index* and *SRI* funds from 1989 – 2000. To distinguish an economic from an institutional explanation of the diffusion patterns the analysis proceeds in several steps. First the speed at which the two product categories spread are estimated using non-parametric techniques to ascertain whether or not there is a significant difference in their rates of diffusion. Then a heterogeneous diffusion model is applied to investigate the firm-level mechanisms behind this observed difference, modeling the diffusion processes of the products as functions of covariates. The results of this analysis are then interpreted both from an institutional as well as an economic theory perspective to see how well each of the theories explain the observed outcome. Finally, it is investigated

whether or not the differences in individual variables observed across the two product categories are sufficiently strong to possibly account for the observed differences in the aggregate diffusion processes.

### 5.1 Aggregate adoption patterns

First the speed at which the product categories spread is estimated as if all potential adopters were homogenous firms – leaving any observed differences unexplained. Adoption by a firm of a product can be seen as a time-dependant process where the likelihood of any firm adopting a product (the hazard rate of adoption) increases over time<sup>82</sup>. When entering the industry a firm becomes ‘at risk’ of adopting any of the mutual fund products (it enters the risk set). The dependent variable in this analysis is the time that each firm waits before adoption and the event of interest is the first adoption of either of the product categories. Separate hazard rate functions are estimated for the transition to (adoption of) an Index/SRI fund and the adoption of a Mixed asset fund respectively. The analysis utilizes the Kaplan-Meier method (estimated with SPSS 10.0), which is a suitable non-parametric method for estimating hazard rates for transitions that can occur at any point in time (Tuma and Hannan, 1984; Blossfeld and Rohwer, 1995).

---

<sup>82</sup> Other assumptions are of course possible, but in this case this assumption is reasonable.

Figure 32 - Hazard function Index, SRI and Mixed asset funds

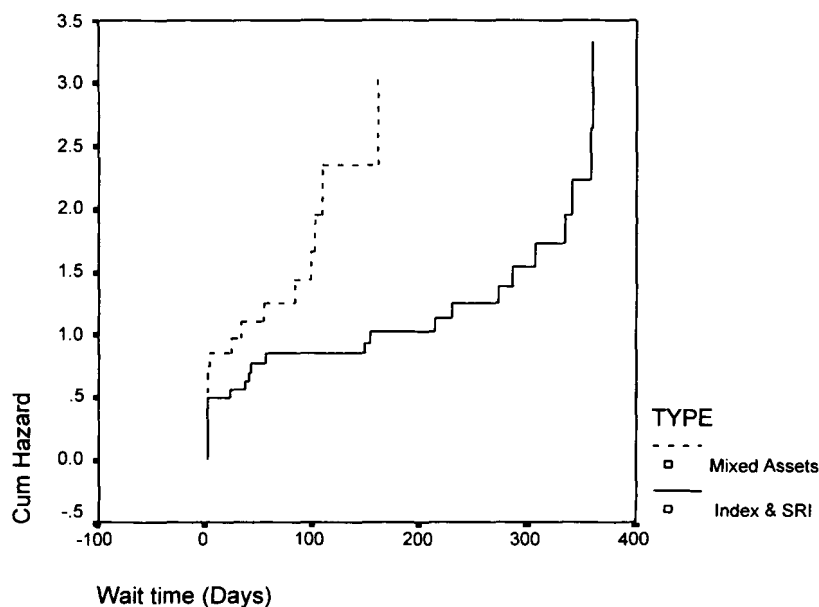


Figure 32 shows a non-parametric estimation of the hazard function for *Index*, *SRI* and *Mixed assets* mutual fund products<sup>83</sup>. The cumulative hazard rate shows the risk of adopting either product category for a firm that has, thus far, not adopted the product category. If there were no real difference in the adoption rates of the product categories their hazard functions would not differ significantly. As can be seen in the above figure the hazard rate functions are visibly different for the two product categories, with *Index* and *SRI* products adopted at a significantly slower rate than *Mixed asset* products ( $p = 0.02$  using a *Log-Rank* test). This finding suggests that *index* and *SRI* funds are in fact adopted at a slower rate across the industry, but the analysis offers no suggestions as to why. The difference in rates is not an artifact of *Mixed assets* funds diffusing exceptionally fast as compared to other new products. Comparing the hazard function of *Mixed assets* fund adoptions to the adoption of three other main equity based product innovations indicates that *Mixed assets* funds actually diffuse rather slowly in comparison (see Appendix I to this chapter). The previous analysis

<sup>83</sup> Note that this analysis uses the first adoptions by a firm of each of the product categories, not repeated adoptions as the later analysis.

only shows that the average firm waited longer before introducing an *Index* or *SRI* fund as compared to introducing a *Mixed assets* fund, but it does not show how the hazard rates develop over historical time. Another non-parametric estimation of the hazard rate development over historical time is the *Nelson-Aalen* estimation (Tuma and Hannan, 1984).

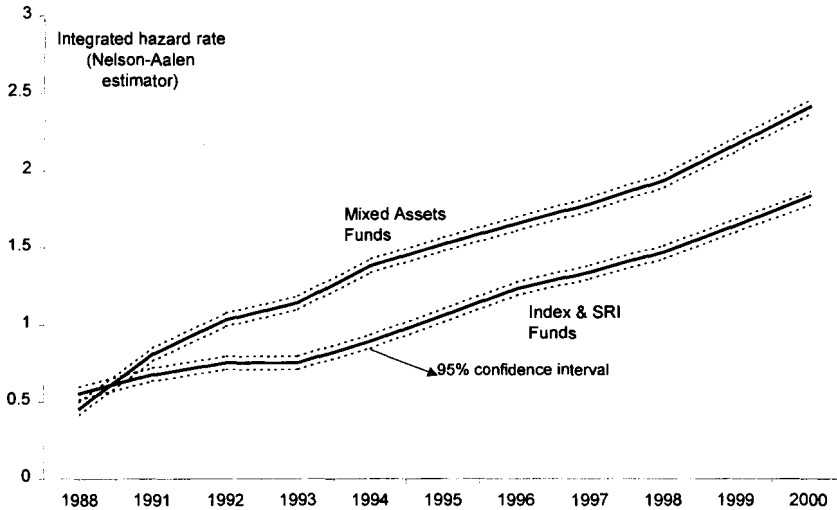


Figure 33 - Integrated hazard rate of adopting Mixed assets and SRI/Index funds

Figure 33 shows that from 1988 and onwards, the hazard of adopting the *Mixed assets* funds has been higher and significantly different (the confidence intervals do not overlap) from the hazard rate of adopting *Index* and *SRI* funds. The figure indicates the same pattern as the previous figure, where the risk of a firm adopting an *Index* or *SRI* fund is lower than of adopting a *Mixed assets* fund.

The next section draws on the hypotheses from chapter three about firm-level diffusion mechanisms and uses a different analysis model and method to test possible explanations for the observed difference in diffusion rates.

## 5.2 Investigating the micro-level mechanisms of imitation behavior

The next step in the analysis is to test theoretical explanations for the observed difference in hazard rates of adopting the two product categories. The analysis starts with the hypotheses put forward in chapter

three, outlining various firm and industry level variables that may influence the diffusion process. The coefficients of these variables are estimated using the heterogeneous diffusion model and the data described in chapter four. In the first section, the results of the heterogeneous diffusion model and their fit with hypotheses 1 – 5 are presented and discussed. The following section applies an alternative, economic, framework to interpret the results of the first analysis. The initial model is also re-estimated to test the plausibility of this alternative interpretation. The third section ‘pushes’ the institutional approach in the first analysis further by introducing alternative institutional variables and re-estimating the initial model to see if these behave as predicted by institutional theory. The fourth section finally re-estimates the initial model, constraining the estimated coefficients across the outcomes to test whether or not the difference observed in the institutional variables across the product categories is strong enough to influence the diffusion process.

#### *5.2.1 Firm-level mechanisms of diffusion and model structure*

The first step in the analysis is thus to test the hypotheses about what firm-level mechanisms might explain the observed difference in hazard rates of the two product categories. Is it simply a matter of *Index* and *SRI* products being less profitable, and therefore adopted at a slower rate or are some firms biased against adopting products that are not ‘legitimate’ in the industry context? The hypotheses forwarded in chapter three provide a number of theoretically interesting variables that may influence the diffusion of the two product categories.

##### *5.2.1.1 Model structure*

As discussed in chapter four, variables are assigned to the appropriate vector of the heterogeneous diffusion model primarily according to their theorized effect. Hypotheses 1 – 3 predict that the likelihood of a particular firm to adopt a product regardless of other adoptions (adoption *propensity*) is influenced by several variables. These variables are the **Firm size**, the **Product performance** (how well products with similar investment objectives have done) and the institutional embeddedness, measured as the **Number of security analysts** of the focal firm. **Firm Age** and the **Resource availability** in the market are added as control variables for organizational inertia and the competitive environment. As the model uses repeated-events (see discussion



chapter four, section 4.3), the number of **Prior product** introductions in the same category, as well as the length of the interval (**Last spell**) from the last introduction are also controlled for. There are also several variables with theorized effects on how earlier adoptions by other firms influence the adoption behavior of a focal firm – the *contagion* effect. These variables include, again, **Product performance**, the **Number of security analysts** in the focal firm and the **Recent performance** and the **Social proximity** of the focal firm to earlier adopters.

The heterogeneous diffusion model is estimated through the *maximum-likelihood* method, using a version of *RATE 3.0* (Tuma, 1993). To correct for left censoring (events occurring prior to 1989 when the observation window begins) all events prior to 1989 are included with zero weight. This allows the program to correctly detect the influence of out-of sample adoptions on organizations in the sample (Greve et al. 2001). The model is estimated as a competing risks model, where firms are simultaneously at risk of undertaking one or more events at one time. Although the data set includes adoption data on all the product introductions by all firms (in eight product categories), only product adoptions of *Mixed assets*, *Index* or *SRI* funds are directly part of the analysis (see discussion in chapter four, section 4.4.1). The product adoptions of the other five product categories are included in the analysis, but with zero weight. The alternative would have been either to drop these observations altogether from the sample, or to consider them as censored events. Both of these options seemed a waste of data, as there is information in distinguishing whether or not a spell ended in a firm doing nothing or adopting some product (that is not part of the analysis).

One concern in the analysis is that the number of observations is a bit short of comfortable for estimating this type of model. A rule of thumb specifies 15 – 20 observed events per estimated variable in complex hazard-rate models and this analysis uses about 8<sup>84</sup>. The most likely problem from having too few observations is inflated standard errors of coefficients and subsequently the risk of *type II* errors (rejecting a hypothesis when it is in fact true). The low ratio warrants caution in interpreting the results, and consequently the discussion below

---

<sup>84</sup> The first model estimates 13 variables for each transition (26 in total), including the constants and there are 198 observed events in the sample. Subsequent analyses add or drop some variables, but the variable/event ratio remains at roughly 8.

focuses on the sign and significance level of the estimated coefficient rather than the exact coefficient estimate.

Results of the first model are shown in Table 7.

Table 7 - Results from first diffusion analysis

	Model 1	
	Index/SRI	Mixed asset
Propensity ( $\alpha$ )		
Intercept	-0.0525 (0.3391)	0.0469 (0.4898)
Prior adoption	0.5413*** (0.0467)	0.5851*** (0.0786)
Length last spell	-14.49 (12.13)	-22.51** (0.0664)
Firm age	-0.0336 (0.0042)	-0.2614*** (0.0664)
Resource availability	0.1853*** (0.0045)	-0.5351*** (0.1763)
Firm size	0.5699*** (0.2033)	0.6100** (0.2757)
Number of analysts	-4.545* (2.35)	1.445*** (0.495)
Average fund-size	0.3314*** (0.1207)	0.3410** (0.1335)
Susceptibility( $\beta$ )		
Intercept	-6.416*** (0.9027)	-7.434*** (0.4941)
Average fund-size	0.0319 (0.0905)	0.4371*** (0.042)
Number of analysts	0.5758*** (0.2188)	0.0538 (0.1392)
Firm performance	0.4769*** (0.1297)	-0.0344 (0.1981)
Social proximity ( $\delta$ )		
Same type	0.0511 (1.34)	2.32*** (0.6513)
Destination Log likelihood (Max log L)	-89.4737	9.8486
Log likelihood test (d.f.)	199.97*** (13)	417.9*** (13)
Model Log likelihood	-79.625	
Log likelihood test (d.f.)	617.87*** (26)	

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$  All significance test are two-tailed. Standard errors in parenthesis.

Model-fit is compared to a base-line model with no covariates and there is a significant improvement in model-fit from including the covariates ( $\chi^2 = 617.87$  with 26 degrees of freedom). The results presented in Table 7 support, in general, the hypotheses of chapter three. For pedagogical reasons, the results are interpreted with respect to their effects on either the likelihood of a firm introducing a new product without external influence (propensity) and the effects of earlier adoptions on a focal firm (contagion).

#### 5.2.1.2 The propensity of firms to introduce mutual fund products

Hypothesis 1 (larger firms introduce products more quickly) is supported as the **Firm size** coefficient is positive and significant for both product categories. Hypotheses 2a and 2b, relating firm centrality to the introduction of *Index/SRI* and *Mixed assets* funds, are also supported. The coefficient for **Number of analysts** is negative and significant for the introduction of *Index/SRI* products and positive and significant for the introduction of *Mixed assets* product. The rather weak statistical significance level of the **Number of analysts** coefficient for the *Index/SRI* fund ( $p < 0.1$ ) could be an effect of estimating the diffusion process of two different product categories as one. Results in appendix I to chapter four indicate that the estimation of the propensity variables suffers from pooling the samples of *Index* and *SRI* adoptions. Likewise, further analyses in section 5.2.2, estimating the model for *Index* and *SRI* adoptions separately, provides coefficient estimates with a higher level of significance.

This finding can be interpreted as supporting an institutional argument where firms that seek to adhere to the institutional logic of the market are biased against introducing products considered illegitimate (such as *Index* or *SRI* funds). The argument assumes that the number of analysts employed by a firm is an 'institutional marker' (c.f. Chaves (1996)) of the degree to which a firm has 'bought into' an institutional logic where active management is the legitimate way of competing. Firms that employ many security analysts are seen as eager to come across as legitimate competitors in general, and would be particularly uninterested in introducing products that lack legitimacy. Employing few security analysts, on the other hand, would be a 'marker' of not being too concerned with institutional norms. Such firms would also, in line with this argument, be less concerned with breaking with norms regarding product legitimacy (c.f. Leblebici et. al., 1991). Alternative

economic interpretations of this finding are pursued further in the next section. The main economic hypothesis (hypothesis 3) that firms are keener to introduce products that have shown to be successful with earlier adopters is supported. The coefficient for **Average fund size** is positive and significant for both product categories.

The control variables behave, in general, as predicted. One exception is the **Resource availability** variable. Defined as resources available per firm, the variable is predicted to have a positive relation to product introduction. Firms are thought to be more interested in introducing new products when there is a better chance of selling well. For *Mixed assets* funds, however, the sign is negative – indicating that firms would be more likely to introduce this product as competition grows tougher (resources per firm shrink). The surprising difference in sign between the product categories may however be an artifact of the way market growth is measured. A *Mixed asset* fund, as discussed in chapter three, is a mutual fund that invests a certain percentage in equities, and the remaining part in bonds. Investors often invest in equity when the bond market is down and vice versa. To guard their portfolio against a downturn in the equity markets investors sometimes use a mixed asset fund, and the demand for mixed asset mutual funds may therefore be inversely related to the fortunes of the equity market. The measure of market growth employed here is the change in the total size of assets under management. As the Swedish market for mutual funds is highly equity driven (most of the market value is in equity stocks), growth in the value of equities will drive the growth of the whole market. If the demand for mixed asset funds is tied to the fortunes of the bond market, then its demand is inversely related to the growth of the market as a whole. Therefore, a negative sign on the market growth variable can be interpreted as meaning the same as a positive sign for an equity-based product (such as *Index* or *SRI* funds) – that the adopter is jumping on a rising market.

Figure 34 plots the adoption of *Mixed assets* funds and the development of the Swedish equity market (as measured by *AFGX*). As seen in the figure, there is some support for the above argument. When the development of the equity markets turns down around 1989, the adoptions of *Mixed assets* funds really take off. On the other hand, firms continue to adopt mixed asset funds even when the equity markets turn up again in 1994.

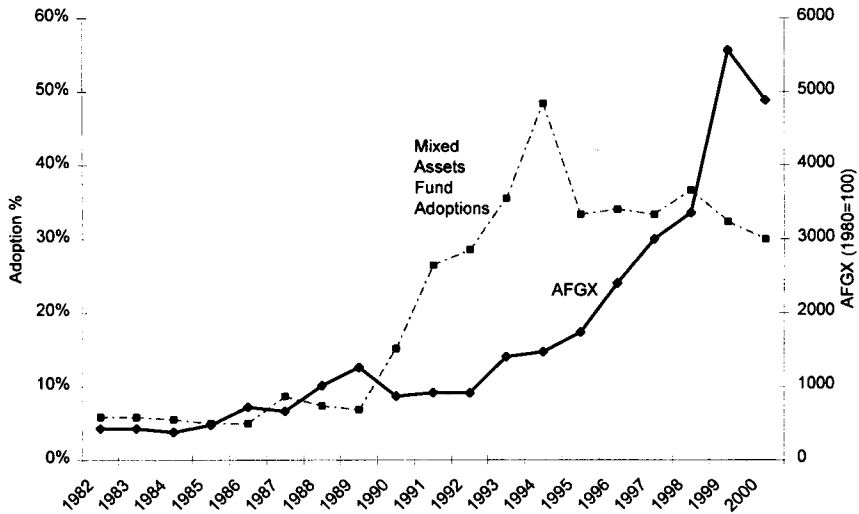


Figure 34 - Adoption of Mixed asset funds and the development of the Swedish equities market (AFGX)

The negative sign of the control variable for **Firm age** is in line with theoretical propositions on organizational inertia, but may also be an artifact of the large inflow of (mainly foreign) firms in the time period under investigation. Figure 7 in chapter three shows the sharp decline in the average age of firms in the sample from about 1994 when the inflow of foreign firms started. This is a result of these firms being coded at zero age at entry since they were new to the Swedish market, although most of them are in fact 'old' in the sense that they have experience (and a product portfolio) from other markets. The strong effect on the average age of the firm exerted by this inflow may be reflected in these findings, as most firms adopting any product in this time-period (1994-2000) are likely to be young. The control for **Prior introductions** was positive and significant for both product categories, indicating that a once a firm had introduced a product category it was more likely to add further introductions in the same product category. This result is in line with the findings from the U.S. mutual fund market by Khorana and Servaes (1999) who attributed their observation to economies of scale and scope of product introductions. **Length of last spell**, the time waited was negative for both product categories, but only significant for the *Mixed assets* product category. The coefficient can be interpreted as indicating that firms that have introduced a

product in the category earlier are likely to wait a shorter time before introducing the next product.

These were the hypotheses predicting how new products are introduced into an adoption community, and how firms adopt new products without the influence of earlier adoptions. The next set of hypotheses to be tested concerns how earlier adoptions influence later adoptions – the contagion effect.

#### 5.2.1.3 The diffusion of products through the mutual fund industry

Hypotheses 4a and 4b predicting the direction of diffusion, from larger to smaller or from smaller to larger firms are not tested using the heterogeneous diffusion model. While the coefficients of the **Firm size** variable are, both for *Index/SRI* and the *Mixed assets* products, positively related to firm propensity to introduce the product this does not address the direction of diffusion over time. A sociological argument of chapter two suggests that non-controversial innovations over time diffuse from central to marginal firms, whereas controversial innovations flow in the opposite direction (c.f. Menzel, 1960; Leblebici et. al., 1991). One way of investigating these hypotheses is to chart the size of the adopting firms, in the order they adopt the different product categories. Hypothesis 4a would thus predict a downward (negative correlation) slope for *Mixed assets* funds and an upward (positive correlation) slope for *Index/SRI* funds. The relationship between the order of adoption and firm size is plotted in Figure 35 using market share (in percentage) as a proxy of firm size. Only the first product introduction by each firm is plotted, and only product introductions that took place after 1989 as firm-size data is missing from the period prior to 1989<sup>85</sup>. Although there are two ‘blips’ in the data, when two of the market leading banks adopt *Mixed asset* funds, imposing a trend-line on the adoption rank-firm size pattern provide two downward sloping lines.

---

<sup>85</sup> This observation period, however, includes about 95 per cent of the adoptions until 2000-12-31.

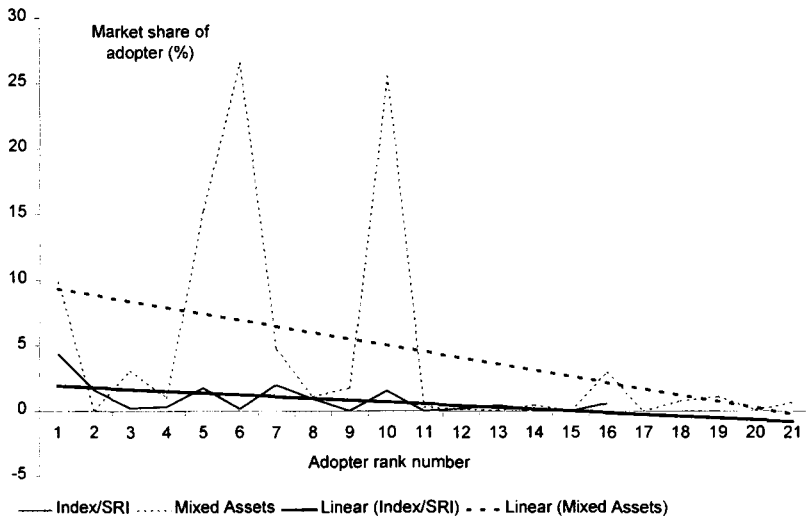


Figure 35 - Size and rank of adopter

This figure lends support to hypothesis 4a but not to hypothesis 4b, as both lines slope downwards, indicating that early adopters are larger than later adopters for both product categories. A correlation between the order of introduction and the market share of the introducing firm confirms this observation as statistically significant.

Table 8 - Correlation of rank and firm size

	Tests of rank / firm size correlation <sup>86</sup>
Product category	Spearman's rho
Index/SRI (n=16)	-0.521**
Mixed assets (n=21)	-0.449**

\*\* Significant at 0.05 level, 2 tailed test

However, the diffusion histories observed are not necessarily complete. In particular the *Index* and *SRI* products have, by the end of the study (2000-12-31) diffused to about 15 per cent of the firms in the industry (see Figure 1 in chapter one). In particular larger firms are missing from the adopters of *Index/SRI* products – for example none of the top-three firms market an index fund. Should the larger firms, at a later date, decide to adopt the controversial funds, hypothesis 4b

<sup>86</sup> Using a Kendalls Tau b test provides the same qualitative result.



would be supported – but such support is only hypothetical at the moment.

Hypotheses 5a and 5b, predicting the path of contagion influence for *Index* and *SRI* and *Mixed asset* funds are tested using the heterogeneous diffusion model. For *Mixed assets* product introductions the coefficient for the **Social proximity** variable and the **Average fund size** variables are both positive and significant, suggesting that firms are more influenced by successful products that have been adopted by other firms in their reference group when adopting *Mixed assets* products. With respect to the adoption of *Index* and *SRI* funds, the coefficient for **Number of analysts** is positive and significant, while the coefficients for **Average fund size** and **Social proximity** are non-significant. Firms that adopt *Index/SRI* products are thus not more influenced by firms in their reference group than by other firms, but they become more susceptible to earlier adoptions of *Index/SRI* products if they employ more analysts. Taken together, these results lend support to hypotheses 5a and 5b as argued below.

*Mixed assets* innovations spread primarily through cohesive firm networks where observing a proximate firm adopting a new product, which also performs well, is likely to trigger adoption by the focal firm. For *Index/SRI* adoptions, on the other hand, observed adoption by network proximates is not likely to trigger adoption. Instead, the positive and significant coefficient of the number of analysts variable can be interpreted as personal networks (of security analysts) being involved in the diffusion. When the firm where a colleague works adopts a controversial product it matters more than if a professionally anonymous market contact adopts. This interpretation is in line with Davis and Greve (1997) who found that the adoption of an illegitimate innovation relied on corporate elite networks. Their understanding of the mechanism was that the adoption of an illegitimate innovation required moral legitimacy, which is best provided by other known individuals, rather than cognitive legitimacy provided by the adoption by a market contact.

These results, interpreted above within an institutional theory framework, are naturally open to alternative interpretations, which is the focus of the next section.

### 5.2.2 *Alternative (economic) interpretations*

An aim in this dissertation is to investigate the value of applying an institutional perspective alongside an economic perspective in understanding the competitive behavior of firms. The first analysis indicates that adding institutional variables may improve an understanding of how firms behave with respect to competitive actions that are seen as controversial in a specific context. It is however essential to consider alternative economic interpretations of the 'institutional' variables. Hypothesis 1 (firm size and adoption) has a similar interpretation whether an institutional or an economic perspective is adopted. Likewise, hypothesis 3 (positive influence of earlier successful introductions), which in a sense is the central economic hypothesis, is also interpreted in the same way whether viewed in an economic or an institutional perspective. Profit seeking behavior is often argued to be a central driving force of change in institutional theory (c.f. Palmer et. al., 1993), but a criticism of neo-institutional theory has been that efficiency concerns have been underplayed (Kraatz and Zajac, 1996). Including a measure of the profitability of a new product together with institutional variables should, from this perspective, give greater confidence in the results (Palmer et. al., 1993; Sutton and Dobbin, 1996). The focus of the discussion of this section is hence on hypotheses 2(a, b), 4 (a, b) as well as 5(a, b) where a distinct institutional interpretation of the result was made in the first analysis.

From an institutional perspective, the number of security analysts is seen as an 'institutional marker' of how embedded a firm is in an institutionalized logic of competing. The empirical support for hypotheses 2a (a positive relation between number of security analysts and adoption of *Mixed assets* products) and 2b (negative relation between number of analysts and adoption of *Index/SRI* products) are, in the first analysis, interpreted as supporting an institutional argument. An alternative, economic, interpretation is to see the number of analysts employed as a proxy of how strong the 'production facility' of the focal firm is. Viewing security analysts as a production asset (a resource base) of the focal firm, economic theory would predict the observed negative relation between the adoption of *Index* funds and the number of analysts employed. The reasoning would be that if a firm has a limited administrative capability and a strong (and expensive) resource base of security analysts, then introducing a new fund, which draws on

administrative capability but does not utilize existing security analysts, would not be economically wise. This reasoning, however, assumes that security analysts represent a fixed cost (a reasonable assumption), and that the administrative system is scalable in rather large increments (not as reasonable an assumption as the administration easily can be outsourced). Such an interpretation would provide an economic explanation of why the coefficient of the **Number of analysts** is negative for *Index funds*, and positive for *Mixed assets* funds (which makes good 'use' of a strong production facility). There is however no straightforward economic explanation for why the adoption of the other controversial fund (*SRI* funds) also should be negatively related to the number of analysts employed. On the contrary, economic reasoning suggests that the number of security analysts coefficient should have a positive sign for this fund category for the same reason as for the *Mixed assets* category.

If an economic interpretation is correct (and an institutional interpretation is superfluous), the combined negative sign of the security analyst coefficient for both the *Index* and *SRI* funds could be due to a very strong negative effect of *Index* funds (predicted) crowding out a (predicted) positive sign for the *SRI* fund. Re-estimating the model for the *Index* and the *SRI* funds separately<sup>87</sup> provides a test of the plausibility of the economic explanation. If this re-estimation finds that *SRI* funds, when analyzed separately, have a positive sign for analyst strength (as predicted by an economic interpretation) it would cast doubts on the validity of the institutional explanation for the negative relation of analyst strength and adoption.

---

<sup>87</sup> Splitting this category, the number of observations becomes very limited (4 observations per estimated coefficient) and findings should only be interpreted at a sign level.

Table 9 - Analyzing Index and SRI separately

	Model 2 (separate analysis of SRI/Index)	
	Index	SRI
Propensity ( $\alpha$ )		
Intercept	0.3565 (0.5093)	-5.156D* (2.977)
Prior adoption	0.8002*** (0.07635)	1.330*** (0.3739)
Length last spell	-79.73*** (18.47)	-22.37 (31.11)
Firm age	0.0719 (0.0454)	0.3576** (0.1622)
Firm size	-0.1273 (0.1328)	1.562** (0.7483)
Resource availability	0.2887*** (0.0562)	-1.065*** (0.2923)
Number of analysts	-1.173*** (0.2940)	-4.211** (2.014)
Average fund-size	-1.108*** (0.1933)	-0.3169 (0.5436)
Susceptibility( $\beta$ )		
Intercept	-22.50 (304.5)	-5.422*** (0.3208)
Average fund-size	0.5153 (289)	0.01639 (0.09116)
Number of analysts	0.2377 (390.5)	0.2790 (0.2024)
Firm performance	0.8740 (248.6)	0.5594*** (0.1593)
Social proximity ( $\delta$ )		
Same type	-0.007 (812.1)	-7.517 (29.70)
Destination log likelihood (Max log L)	75.51	-67.06
Log likelihood test (base-line)(d.f.)	184.15*** (13)	76.62*** (13)
Observed cases	59	36

\*p < 0.1; \*\*p < 0.05; \*\*\* p < 0.01 All significance test are two-tailed. Standard errors in parenthesis.

As seen in Table 9, the adoption of both *Index* and *SRI* funds are negatively related to the **Number of analysts** variable (both coefficients are negative and significant). This finding provides some confidence in the value of an institutional interpretation of the effects of

the number of analysts variable as the economic prediction was not supported.

Another economic argument could still be made that the **Number of analysts** variable actually picks up a firm-size effect, which leads to the observed negative sign of the coefficient. *Index* and *SRI* funds could, from an economic perspective, be seen as not 'controversial' but merely extreme niche products with a limited market potential. It could then be argued that only small firms would be interested in adopting these, and that the negative relation between number of analysts and adoption actually reflects this. However, including firm market-share in the analysis, which is arguably a better estimate of firm size than the number of analysts employed, should control for this alternative interpretation. After looking into plausible alternative interpretations of the estimated coefficient signs for the **Number of analysts** variable, it seems that an institutional interpretation is the most persuasive.

Hypotheses 4a and 4b received only partial support in the analysis. Specifically, only hypothesis 4a, predicting that the direction of diffusion over time should be from larger to smaller firms was supported. This finding is in line with standard economic diffusion theory (c.f. Mansfield, 1961). Finding that the diffusion of *Mixed assets* funds is positively influenced by earlier adoptions by socially proximate firms (hypothesis 5a) is also in line with predictions using strategic group theory (Caves and Porter, 1977; Porac et al. 1995). Competitive actions of group members are thought to be attended to more closely than the actions of out of group firms. However, strategic group theory does not predict, as does an institutional approach, that adoptions of controversial products by socially proximate firms are *not* significantly influential in the adoption decision of a focal firm, and that the susceptibility influence instead operates through professional network contacts. The support for hypothesis 5b is therefore another result of the first analysis that is difficult to explain in a satisfactory manner using a purely economic theory framework.

### 5.2.3 *Organizational politics as an alternative (?) view*

Another alternative interpretation of the empirical findings is the organization-political view (c.f. Pettigrew, 1973; Pfeffer, 1981; March, 1994). The main argument would be that if security analysts are important actors in the mutual fund firm (as argued in chapter three), a

collectively held professional dislike of *Index* and *SRI* funds would explain the negative relationship between likelihood of adoption and number of analysts employed. Arguably, this explanation is not exactly an alternative to the above institutional interpretation. On the contrary it may actually be a complementary explanation, but at a different level of analysis. Institutionalized ideas are often politically contentious (March and Olsen, 1989) and the process of institutionalization has been argued by several influential authors to be political in its nature (Fligstein, 1996; Mizruchi and Fein, 1999). As argued in chapter three, security analysts may have good reason to (collectively as a profession) be negatively inclined towards the adoption of index funds as it challenges the idea of active management and the value of their professional contribution. Also *SRI* funds may be looked upon with some professional skepticism as some alternative analysis techniques are used. Firms with more security analysts would, according to this line of argument, be less likely adopters of both *index* and *SRI* funds than smaller firms where internal resistance would be less. However, to claim that the observed outcome of the analysis is a result of successful political maneuvering by security analysts would demand a more process-oriented set of data than that available in the present dissertation. It is, for example, not obvious why a solid opposition to a particular mutual fund category would be more likely to form in a larger analyst collective (where more individuals would need to agree) than in a smaller analyst collective (which is what the empirical analysis would suggest). The interpretation has rather strong face validity though, as interviews with firms that have adopted *Index* or *SRI* products often point to 'internal analyst resistance' as a leading reason why they do not expect the larger firms to imitate them.

The first analysis thus provides support for the idea of adding an institutional dimension to the analysis of the product introduction behavior of firms, in particular when understanding the use of actions that deviate from norms in an industry context. The next section assesses the robustness of these findings by introducing additional institutional variables.

#### *5.2.4 Testing the institutional model further*

Judging from the first analysis there is some predictive value from introducing institutional variables together with economic variables. While an economic model provides strong predictions for how a prod-

uct category that is in line with norms of how to compete diffuses across an industry, an institutional view adds an understanding of how controversial products spread through the same community. This finding is, however, based on the support of two institutional hypotheses. One specific institutional 'marker' variable (**Number of analysts**) correctly predicts a difference in the way *SRI/Index* and *Mixed assets* products diffuse, and the diffusion channel of *SRI/Index* funds is in line with predictions. To assess the 'robustness' of this institutional interpretation, this section re-estimates model 1 with the introduction of two additional variables with clear institutional predictions. The aim is to see if these additional variables can add further predictive power to the model. One of the variables is an indicator of when firms should be more susceptible to the adoption of controversial funds, whereas the other variable predicts which firms should be more susceptible to earlier adoptions of non-controversial products.

#### 5.2.4.1 Media attention and the diffusion of new ideas

The first variable is a measure of the public discourse surrounding the mutual funds – the **Media attention** on a fund category. This variable is constructed to measure media attention in relation to how well the fund has succeeded (as measured by average size of fund, see section 4.4.3.1). Economic and institutional theories differ in terms of predictions about the effects of media attention. An economic prediction is that the number of articles written about a product category should be positively related to introduction behavior of both product categories – controversial as well as non-controversial funds. The reason is simply that it is good publicity (provided that it is not only negative) and that it provides additional information to firms about earlier adoptions. An institutional prediction, on the other hand, is that media attention should primarily influence the adoption of the product category lacking in normative legitimacy (*Index* and *SRI*), whereas adoption of the other product category (*Mixed asset*) would not be as strongly (if at all) influenced. The reasoning is that firms can draw on different types of sources of legitimacy to justify their actions. If a practice is cognitively legitimate within the adoption community, the need is not so great to rely on an external source of legitimacy, such as media coverage, as when a practice lacks in legitimacy (c.f. Elsbach, 1994; Ruef and Scott, 1998). Over time, however, external legitimacy in the form of public attention may lead to a greater cognitive legitimacy within the adoption

community (Hirsch, 1986; Greenwood et. al., 2002). As the theorized influence of the media attention variable is on how sensitive firms are to the information of earlier adoptions, the variable is included in the susceptibility vector of the model. The results of a re-estimation of the first model, including the **Media attention** variable are presented in Table 10.



Table 10 - Analysis including media attention to a fund type

	Model 3 (media attention included)	
	Index/SRI	Mixed assets
<b>Propensity (<math>\alpha</math>)</b>		
Intercept	-0.8294** (0.4724)	0.04716 (0.49)
Prior adoption	0.71*** (0.101)	0.5854*** (0.0786)
Length last spell	-25.16* (13.84)	-22.54** (9.825)
Firm age	0.1002** (0.0315)	-0.2624*** (0.0666)
Firm size	1.711*** (0.28)	0.6139** (0.2769)
Resource Availability	0.2373*** (0.0553)	0.5367*** (0.177)
Number of analysts	-13.81*** (1.955)	1.451*** (0.497)
Average fund-size	0.4086** (0.2044)	0.3417** (0.133)
<b>Susceptibility(<math>\beta</math>)</b>		
Intercept	-5.967*** (0.3738)	-7.461*** (0.5038)
Average fund-size	0.0028 (0.0691)	0.4358*** (0.0422)
Number of analysts	0.2253** (0.1087)	0.052 (0.1389)
Firm performance	0.56*** (0.0269)	-0.0346 (0.199)
<b>Media attention</b>	<b>0.2671***</b> <b>(0.0269)</b>	<b>0.0268</b> <b>(0.0763)</b>
<b>Social proximity (<math>\delta</math>)</b>		
Same type	0.3974 (1.085)	2.334*** (0.6538)
Destination log likelihood (Max log L)	-51.2	9.9
Log likelihood test (d.f.)	276.51*** (14)	418*** (14)
Model log likelihood		-41.3
Log lik. Test (base-line, (d.f.))		694.52*** (28)
Log likelihood test (Model 1, d.f.)		76.65*** (2)

\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01 All significance test are two-tailed. Standard errors in parenthesis.

The result of the analysis supports an institutional prediction, as the **Media attention** coefficient is positive and significant for the *Index/SRI* fund adoption and non-significant for the adoption of *Mixed assets* funds. The model-fit also improves significantly ( $\chi^2 = 76$ , with 2 degrees of freedom) as compared to model 1 with the inclusion of the **Media attention** variable.

The substantive effect of the **Media attention** variable, that articles written precede adoption of *Index/SRI* funds but lag adoptions of *Mixed assets* funds, can also be illustrated from the data. Plotting the number of articles, lagged by one year, against the adoption pattern of each of the product categories (Figure 36) a clear pattern, supportive of an institutional interpretation, emerges. Adoptions of *Mixed asset* funds preceded media attention, while adoption of *index* and *SRI* funds followed closely on media attention.

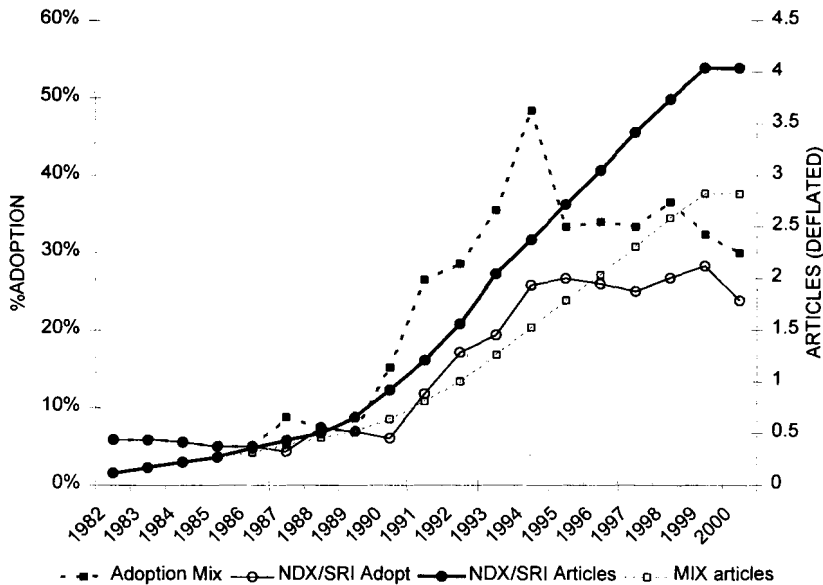


Figure 36 – Media attention and adoptions

#### 5.2.4.2 Involvement in a professional industry association

Another test of the predictive power of an institutional perspective is to investigate what a close association with the organization of the analyst profession – the *Swedish Security Analysts organization (SFF)* means in terms of susceptibility to the introduction of a controversial or non-controversial product. From an institutional perspective, a firm

that is deeply involved in the workings of the *SFF* should be more likely to be interested in appearing legitimate. An indicator of the degree to which a firm is involved in *SFF* is whether or not an employee of the firm has been the chairperson of the association (there is a system rotating the position of the chairperson among the constituent firms)<sup>88</sup>. Having a chairperson employed is thus predicted negatively related to the sensitivity to earlier adoptions of an *Index/SRI* product, but positively related to the sensitivity to earlier adoptions of a *Mixed assets* product. There is no directly intuitive economic alternative interpretation of this variable though. Results from re-estimating the model including the variable **SFF Chairperson** are shown in Table 11.

---

<sup>88</sup> To adjust for the increased probability that a firm with more analysts should have a chairperson, the dummy variable is divided by number of analysts employed (see section 4.3.1 in chapter 4).

Table 11 - Analysis with SFF Chairperson

	Model 4 (SFF Chairperson included)	
	Index / SRI	Mixed assets
<b>Propensity (<math>\alpha</math>)</b>		
Intercept	-0.6544 (0.4359)	0.0846 (0.478)
Prior adoption	0.6351*** (0.0818)	0.5859*** (0.0757)
Length last spell	-31.35* (16.18)	-22.76** (10.14)
Firm age	0.0803** (0.0302)	-0.261*** (0.062)
Firm size	1.521*** (0.2687)	0.6089** (0.2579)
Resource availability	0.2629*** (0.0505)	-0.53** (0.1679)
Number of analysts	-13.28*** (2.244)	1.423** (0.4688)
Average fund-size	0.4734** (0.179)	0.3345** (0.1307)
<b>Susceptibility(<math>\beta</math>)</b>		
Intercept	-5.35*** (0.2578)	-7.622*** (0.4866)
Average fund-size	0.0327 (0.056)	0.4458*** (0.0416)
Number of analysts	0.278** (0.1276)	0.1606 (0.1389)
Firm performance	0.4477*** (0.120)	0.0117 (0.2028)
<b>SFF chairperson</b>	<b>0.2984</b> <b>(0.2096)</b>	<b>0.7218***</b> <b>(0.218)</b>
<b>Social proximity (<math>\delta</math>)</b>		
Same type	-0.7732 (1.060)	2.1*** (0.6338)
Destination log likelihood (Max log L)	-86.88	13.806
Log likelihood test (d.f.)	205.15*** (14)	425.81*** (14)
Model log likelihood		-73.07
Log lik. test (base-line) (d.f.)		630.96*** (28)
Log likelihood test (Model 1, d.f.)		13.09** (2)

\*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01 All significance test are two-tailed. Standard errors in parenthesis.

The institutional hypothesis about how firms that are closely involved in the *SFF* are influenced by earlier adoptions receives only partial support in this analysis. A firm that employs a person who has at any point in time chaired the *SFF* is, as predicted, more likely to be influenced by another firm to introduce a *Mixed assets* product as the coefficient of **SFF chairperson** is positive and significant. Involvement in *SFF*, on the other hand, has no significant effect on the likelihood of being influenced by the adoption of a *Index/SRI* fund, as the **SFF chairperson** variable is positive, but insignificant for this fund category. The increase in model-fit from introducing this variable is more modest than the increase from adding the **Media attention** variable, but it is still a significant improvement over the first model.

To sum up, additional analyses indicate the value of institutional variables in predicting when earlier adoptions of controversial products are more likely to be imitated (when there is high media attention). Institutional variables also predict that firms that are heavily involved in the work of one of the professional associations of the industry are more likely to be influenced by earlier adoptions of legitimate products, but not by illegitimate product adoptions. These findings indicate that an institutional interpretation of firm product introduction behavior is plausible also using other institutional variables, thus indicating some robustness in the idea of using institutional variables in conjunction with economic variables.

#### 5.2.5 What do the analyses show?

The findings from the first three analyses provide support for the hypotheses forwarded in chapter three. A summary of the hypotheses, the predicted and the actual signs are provided in Table 12.

The 'base-case' model reads as:

$$r_{n,j}(t) = \begin{matrix} \text{Propensity} \\ \left\{ \begin{array}{l} \text{Intercept} \\ + \alpha 0 \text{ Prior Adoption} \\ + \alpha 1 \text{ Length last spell} \\ + \alpha 2 \text{ Firm age} \\ + \alpha 3 \text{ Firm Size} \\ + \alpha 4 \text{ Resource availability} \\ + \alpha 5 \text{ Number of analysts} \\ + \alpha 6 \text{ Average fund size} \end{array} \right. \end{matrix} + \begin{matrix} \text{Contagion} \\ \left\{ \begin{array}{l} \text{Intercept} \\ + \beta 0 \text{ Average fund size} \\ + \beta 1 \text{ Number of analysts} \\ + \beta 2 \text{ Firm performance } \beta \end{array} \right. \end{matrix} \times \sum (\text{Base line adoptions}_{(i)}) + \begin{matrix} \left\{ \begin{array}{l} \text{Intercept} \\ + \beta 0 \text{ Average fund size} \\ + \beta 1 \text{ Number of analysts} \\ + \beta 2 \text{ Firm performance } \beta \end{array} \right. \end{matrix} \times \sum (\delta 0 \text{ Socially proximate adoptions}_{(i)})$$

Table 12 - Predicted signs and outcomes

Hypothesis	Predicted sign	Observed sign	Support
<b>The introduction of products</b>			
1: The size of a mutual fund firm is positively related to the speed of adoption of product innovations	$\alpha_3 > 0$ for $j = 1, 2$	$\alpha_3 > 0$ for $j = 1^{***}, 2^{***}$	Yes
2a: <i>Mixed asset</i> funds are introduced by central firms	$\alpha_5 > 0$ for $j = 1$	$\alpha_5 > 0$ for $j = 1^{***}$	Yes
2b: <i>Index and SRI</i> funds are introduced by marginal firms.	$\alpha_5 < 0$ for $j = 2$	$\alpha_5 < 0$ for $j = 2^*$	Yes
3 The size of earlier mutual funds with the same investment objective is positively related to adoption speed.	$\alpha_6 > 0$ for $j = 1, 2$	$\alpha_6 > 0$ for $j = 1^{***}, 2^{***}$	Yes
<b>The diffusion of products through the industry</b>			
4a: <i>Mixed asset</i> funds spread from central to marginal actors (faster diffusion)	Correlation Size / entry order $> 0$	Correlation Size / entry order $> 0^{**}$	Yes
4b: <i>Index, SRI</i> funds spread from marginal to central actors (slower diffusion)	Correlation Size / entry order $< 0$	Correlation Size / entry order $> 0^{**}$	No
5a: <i>Mixed asset</i> funds diffuse through local market contacts and through cohesive firm-level networks (drawing on cognitive legitimacy)	$\delta > 0$ and $\beta_0 > 0$ for $j = 2$	$\delta > 0$ and $\beta_0 > 0$ for $j = 2^{***}$	Yes
5b: <i>Index, SRI</i> funds spread through personal/professional networks (drawing on moral legitimacy).	$\beta_1 > 0$ and $\delta$ not significant for $j = 1$	$\beta_1 > 0^{***}$ and $\delta$ not significant for $j = 1$	Yes

$j_1$  = Mixed assets fund;  $j_2$  = Index/SRI fund.  $*p < 0.1$ ;  $**p < 0.05$ ;  $***p < 0.01$

#### 5.2.5.1 Interpreting the findings

An intuitive understanding of the results in the first analysis is as follows. *Mixed asset* funds are more likely to be introduced by young firms with a large market share, employing many security analysts and when the resources in the market are shrinking. The adoption hazard is greater when the product has been shown to be successful. *Mixed assets* products spread primarily through market contacts with similar firms. Observing a firm with a similar corporate parentage adopting a new

product, which also performs well, is likely to trigger adoption by the focal firm. In essence, this is the standard diffusion story as told from an economic perspective where firms chase profits and care about the actions of other firms in their competitive group.

*Index* and *SRI* funds, on the other hand, are more likely to be introduced by firms with a large market share, employing few security analysts and in times of market growth. The adoption hazard is greater when the product has been shown to be successful with earlier adopters. *Index* and *SRI* products then spread through the community primarily through personal networks (of security analysts), rather than through market contacts. The understanding of how these products spread is different from the standard economic story, but in line with an institutional perspective.

With respect to the difference observed in the first analysis of the diffusion rates of the different products (Figure 32), an interpretation of the underlying mechanisms can now be attempted. The difference in speed of diffusion can be understood as a combined effect of differences in *who* is likely to introduce the new product category and differences in the *channels* by which they subsequently diffuse. *Index/SRI* products spread mainly through professional networks, rather than by seeing other firms adopting. The observation that it is mainly firms with few analysts that *introduce* an *Index/SRI* product provides an explanation for the slow diffusion relative to the *Mixed asset* fund. Firms that are the most likely to introduce the product are those with the fewest links to the analyst community, and thus the firms that are the least likely to influence other firms to adopt. *Mixed asset* products, on the other hand, spread primarily among firms that perceive each other as similar and have contacts in the market. When a product shows promise (through an increase in the average fund size) other firms are influenced to adopt. As suggested by Davis and Greve (1997), a market contact diffusion channel is most often faster than a personal network channel, which may depend on actual contact, and not only knowledge about the actions of another actor.

Using an institutional perspective in conjunction with an economic perspective provides an understanding of the different mechanisms driving the diffusion process, and hence provides an explanation for the differences observed in Figure 32. While an economic perspective captures the basic 'driver' of product diffusion (firms looking for

profits), an institutional perspective adds the dimension of how ideas taken for granted about how products are profitable shape the actual behavior of firms. When the innovation in question is in line with existing norms, firm behavior is well captured by the economic model. In the case where a product diverges from norms of how firms should compete, however, some firms behave as if they care about aspects of how legitimate their actions seem to other actors. To test the robustness of the institutional predictions, the first analysis was expanded by additional analyses. These analyses generated continued empirical support for the idea that firms look not only to the profitability of adoption, but firms are also institutionally biased in the product introduction opportunities they perceive.

The main support for an institutional argument is the differences in coefficient estimates of the institutional variables observed across the controversial and non-controversial product categories. The last question to be addressed in this chapter is whether or not these observed differences in the coefficients of specific variables are strong enough to influence the diffusion process for a product category as a whole.

#### *5.2.6 Constraints and effects on the diffusion process*

Given that institutional variables do pick up an institutional influence on the competitive behavior of firms, it still remains to be seen whether these effects are strong enough to account for the difference in the aggregate diffusion pattern of the two product categories. Observing that the estimated coefficients of individual variables differ in their sign across the two product classes does not necessarily mean that these observed differences influence the aggregate diffusion patterns of the products. Not all differences in coefficient estimates will be significant enough to influence a diffusion process. An important question is therefore whether or not the observed differences in the institutional 'marker' variable are strong enough to influence the observed difference in diffusion patterns between the product categories.

Constraining the estimated coefficients to be equal across both the outcomes and the comparing the change in model fit from letting the constraints go, one by one, will test what (if any) individual variables are influential enough to affect the diffusion process. Coefficients that provide the greatest gain in model fit when released have the strongest influence on driving differences in the diffusion processes of



the two product categories (Greve, 1998). In a re-analysis of model 1, all coefficients except the intercepts are constrained to be equal across the two product categories (Table 13).

Table 13 - Analysis using coefficient constraints

	Model 5 (a constrained model)	
	Constrained estimates	$\chi^2$ value of no constraint (d.f. 1)
Propensity ( $\alpha$ )		
Intercept (Index & SRI/Mixed assets)	-0.5629 (0.2649)	-1.405*** (0.338)
Prior adoption	0.5369*** (0.0337)	12.95
Length last spell	-16.65** (7.535)	7.59
Firm age	-0.0681*** (0.0189)	5.44
Firm size	0.4003*** (0.0925)	7.99
Resource availability	0.1038** (0.0359)	0.03
Number of analysts	-2.08*** (0.3401)	37.16
Average fund-size	0.3345*** (0.0605)	44.22
Susceptibility( $\beta$ )		
Intercept	-8.550*** (0.5646)	-7.419*** (0.493)
Average fund-size	0.3083*** (0.0313)	22.02
Number of analysts	0.4402*** (0.0959)	4.59
Firm performance	0.2546** (0.0949)	6.13
Social proximity ( $\delta$ )		
Same type	2.263*** (0.6359)	0.30
Model log likelihood		-131.76
Log likelihood test (base-line) (d.f.)		513.6*** (15)
Log likelihood test (model 1) <sup>a</sup> (d.f.)		104.27*** (11)

\*p < 0.1; \*\*p < 0.05; \*\*\* p < 0.01 All significance test are two-tailed. Standard errors in parenthesis. a) Note that the test against model 1 is reversed – it tests whether or not model 1 has a better fit than model 5.

As can be seen, the coefficient of the **Number of analysts** variable has the second highest  $\chi^2$ -improvement value, much higher than the average coefficient estimate. Relaxing the equality constraint on the security analyst variable thus provides a significant improvement in model fit. The largest negative effect on model-fit of constraining a variable coefficient across the two product categories is from the **Average fund size** variable. There are thus clear differences in how perceived profitability drives the two diffusion processes. Other coefficients, such as market growth, on the other hand, may be constrained to equality without any significant loss of model fit. These results indicate that the institutional variable has the statistical significance to influence the different diffusion patterns that the two product categories display. Another finding, intriguing from an economic theory point of view, is that perceived profitability affects the diffusion processes in a significantly different way across the two product categories. Why does the influence of the profitability from adoption variable seem to differ across the adoption of these two product categories? At the time of writing there is no clear theoretical interpretation of this finding. We might speculate though that because some of the other variables differ in their effect on the diffusion mechanisms, the relative influence of perceived profitability differs across the product categories. This is, however, mere speculation.

To see the effect of individual variables on the estimated hazard rate of adoption it is useful to inspect the anti-logs of the estimated coefficients. In a log-linear model (such as the heterogeneous diffusion model) the anti-log provides information about the *multiplier effect* for a unit change in the variable – i.e. the change in the hazard rate by one unit change in the variable (Tuma, 1993). The interpretation of the multiplier with respect to the heterogeneous diffusion model is a little less straightforward than with ordinary log-linear models. Recall that in the heterogeneous diffusion model the total hazard rate of an adoption event is the *sum* of the *propensity* and the *contagion* effects. The multiplier of a particular variable is therefore understood as multiplying either the propensity or the contagion part of the sum. A multiplier of the propensity effect shows how the variable influences part of the hazard of adoption for the focal firm, whereas the contagion effect is a multiplication of the effect of observing one more adoption in the community on the hazard of adoption of the focal firm.

Based on the anti-log values, the multiplier effects of each of the variables on either the propensity or the contagion part of the hazard rate are given in Table 14.

Table 14 - Multiplier effect of variables

	Unit	Index/SRI fund	Mixed asset fund
<b>Propensity multiplier effect of:</b>			
Prior adoption	Number of adoptions	1.718*** (0.0802)	1.795*** (0.1411)
Length last spell	Months	51.04 <sup>-6</sup> *** (6.19 <sup>-6</sup> )	16.74 <sup>-11</sup> *** (16.46 <sup>-10</sup> )
Age	Firm years	0.967 (0.041)	0.77*** (0.0511)
Firm size	Ln(market share) % * 100	1.768** (0.3594)	1.84* (0.507)
Resource availability	Market size in 100 Mill SEK / firm	1.204*** (0.0548)	0.586*** (0.103)
Number of analysts	Person years / 10	0.0106*** (0.0251)	4.24 (2.1)
Average fund-size	SEK 100 Million	1.393** (0.1681)	1.406** (0.1877)
<b>Multiplier effect of earlier adoptions of:</b>			
Average fund-size	SEK 100 Million	0.968 (0.0877)	1.548*** (0.0651)
Number of analysts	Person years / 10	1.779** (0.389)	1.055 (0.1469)
Firm performance	Change in ln(marketshare) from last year	1.611*** (0.2089)	0.9662 (0.1914)
Same type firm		1.052	1.018***

\*p < 0.1; \*\*p < 0.05; \*\*\* p < 0.01 All significance test are two-tailed. Standard errors in parentheses.

With respect to the propensity and the susceptibility influences, the effect of **Number of analysts** on the total adoption hazard for *Index/SRI* funds seems to work in opposite directions. Adding one extra security analyst to the staff multiplies the firm adoption propensity (to adopt without seeing earlier adoptions) of the hazard by 0.1<sup>89</sup> (a

<sup>89</sup> 0.01 (the anti-log value) \* 10 (the unit of the number of analysts variable scaled to 10 persons).

tenth of what it would be without that extra security analyst). On the other hand, one more security analyst on the staff multiplied the effect of all previously observed *Index/SRI* adoptions (contagion effect) by almost 18 times.

For *Mixed assets* adoptions the main driving variable is how profitable a new product seems. An increase in the average fund size by SEK 100 million (@ 1980 value) increased the susceptibility part of the hazard of a firm by 1.4. The social proximity effect is, in comparison, rather modest where an adoption by a socially proximate firm multiplied the effect of earlier adoptions only by about 2 per cent as compared to the adoption by a non-proximate firm. With respect to both product categories, every 100 million (in 1980 SEK value) added by the average fund in that category in the market multiplied the propensity part of the hazard rate of adoption by about 1.8 (almost doubling it).

In general, the multiplier effects provides the same impression of what variables that really matter in shaping the diffusion processes of the two products as model 5 does (the constrained analysis). The **Number of analysts** and the **Average fund size** most clearly influence the diffusion processes of both the *Index/SRI* and the *Mixed assets* products. While the other variables provide value in the model, the way these two variables influence the adoption of *Index/SRI* and *Mixed assets* products together explain much of the observed difference in the diffusion rates.

The closing two chapters of the dissertation expand further on the findings of this analysis. Chapter six relates the quantitative insights to two case studies of firms adopting controversial products. Chapter seven then relates the quantitative as well as qualitative findings to existing theory on competition and the spread of new ideas.

### 5.3 Appendix I - Integrated hazard rates for three equity based mutual fund categories

An argument could be made that the difference in speed of diffusion between *Mixed asset* funds and *SRI* and *Index* funds is less due to the illegitimacy of the adoption of the latter category than the unusual fast adoption of the former. Estimating a non-parametric integrated hazard rate (Nelson-Aalen<sup>90</sup>) for first adoption of three different categories of equity-based mutual funds (*Regional*, *Industry* and *Mixed assets*) shows that the adoption of *Mixed asset* funds has not been exceptionally fast relative to other mutual funds. As far as equity-based mutual funds go the adoption of *Mixed assets* funds has in fact been relatively slow as seen in Figure 37.

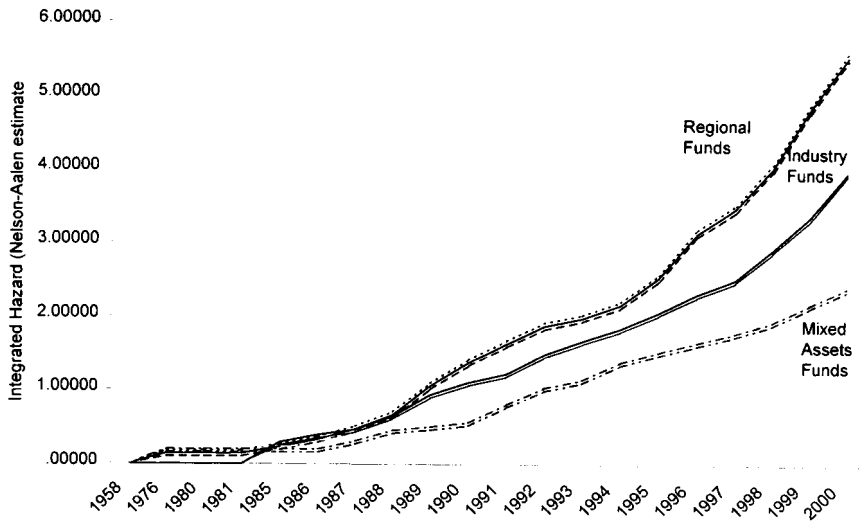


Figure 37 - Integrated hazard rate of three equity-based mutual funds

As argued in the text, the difference in the speed of adoption between *Mixed asset* funds and *Index* and *SRI* funds is thus not likely to

<sup>90</sup> See Tuma and Hannan (1984) for details. The integrated hazard rate was estimated using Rate 3.0.

constitute an artifact of *Mixed asset* funds spreading at an abnormally fast rate.

## Controversial Products as a Strategy: Two Case Studies

---

THE FINDINGS OF CHAPTER FIVE, on the one hand provide support for an economic model where firms adopt new products based primarily on their perceived relative advantage or profitability. An institutional perspective, however, adds the nuance that some innovations, not considered in line with norms of how firms should compete, were adopted based on different criteria and more slowly. The institutional interpretation also suggested that firms that were less embedded in the institutional setting were more likely to break with these norms and introduce 'illegitimate' products. An important question not addressed in the quantitative analysis is why any firm would want to adopt a product that is considered with a greater skepticism than the 'normal' product? A common opinion is that it is a 'safer bet' to stay with the crowd (Rao et. al., 2001), and a central tenet in institutional theory suggests firms are penalized in economic ways for diverging from established norms (Zuckerman, 1999).

Theory and earlier studies suggest two main mechanisms that may induce firms to diverge from existing norms (refer discussion section 2.4.2.2, chapter two). The first mechanism is related to the increase in relative costs of a resource that often follows with the institutionalization (and therefore increased demand for) a practice (Oliver, 1991; Leblebici et. al, 1991). The second suggested mechanism is the decrease in likelihood of imitation (and therefore less intense competition) that follows the adoption of an illegitimate practice (McMillan et. al., 1985; Oliver, 1997). The substantive findings of the quantitative analysis of chapter five indicate that an institutionally embedded firm is less likely to adopt an 'illegitimate' product (such as an *Index* or *SRI*



fund), which seems to provide some support for the latter mechanism. Firms that are aware of this may seek a 'protected niche' through the adoption of an illegitimate product. Discussions in chapter three on the historical development of the market also indicate that the resource cost for using analysts have increased rapidly during the period of observation (see section 3.5.2.1, chapter three), lending some face validity to the former mechanism.

This chapter presents the case studies of two firms for which the adoption of *Index* or *SRI* funds was a central feature of their strategy. The cases illustrate the workings of both mechanisms for breaking with institutional norms as discussed above. Both cases draw on the interviews with the senior managers of these firms (in 1999), as well as other public sources.

## 6.1 Betting on being average: an index fund strategy

*Erik Penser Fonder* entered the Swedish market for mutual funds in 1994. It is part of a larger corporate group, which also incorporates *Erik Penser Fondkommission* a medium sized stock brokerage firm. From the start, *Penser Fonder* decided to market only index funds. As the CEO Ulf Houlst expressed it:

*"We said that we can not start the same funds as the large banks because we do not have the same distribution network as they do. So we said Index, partly because we like the concept and partly because we figured that we would not have to hire a number of fund managers..."*

Mr. Houlst describes two main drivers for their choice of product strategy – mainly the need to find a less crowded niche, but also an advantage of being able to minimize costs of operation. They were also impressed by the, at the time, strong performance of the index funds in the U.S. All of these considerations pointed to the advantage of marketing index funds. *Penser Fonder* was not first in the Swedish market to sell index funds though. *Handelsbanken Fonder* introduced an index fund already in the early 1970's. *Handelsbanken*, however, marketed their indexfund as any other actively managed fund in their portfolio, charging the same management fee for the index fund as for other actively managed funds.

*Penser Fonder* differentiated their index offering as compared to *Handelsbanken* by their pricing strategy as well as in the technical construction of the fund. Firstly they priced their index funds more aggressively, at a 0.5 per cent management fee, whereas *Handelsbanken* at the time charged a management fee of 1.4 per cent<sup>91</sup>. Secondly, they registered their index funds as national funds ('nationella fonder'), providing greater latitude in the investment choices made by their fund<sup>92</sup>, but limiting their active sales efforts outside Sweden. These two points differentiated the *Penser Index* product from the index fund offered by *Handelsbanken* and their index fund could replicate the Swedish index in a closer way than earlier index funds.

Even though *Penser Fonder* and *Handelsbanken Fonder* sold, in effect, identical products at very different prices, customers did not flock to the *Penser Fonder* Index funds. A Swedish index fund replicates the general development of the Swedish stock market, regardless of who manages it. The difference is that when *Handelsbanken* manages the fund, the management fee is 0.9 per cent of the assets, whereas if *Penser Fonder* manages it, the management fee is 0.5 per cent. The lukewarm customer response is curious from an economic perspective, but understandable from a regulatory perspective. One reason for customer immobility is the tax structure. As expressed by Mr. Houlst:

*"... capital gains taxation... It is an important reason for consumer immobility. Another issue is, of course, that people have many other links with their banks. You have loans, perhaps a firm. People have a relationship with their bank. Then there is tradition, 'dad used this bank and so will I'. Money is not very fluid. We have noticed that."*

As discussed in chapter three, the present tax system serves to lock in funds already invested in mutual funds as changing from one fund to another may incur a 30 per cent capital gains tax. This effect was mentioned by most of the executives and also pointed out as a major impediment to competition in the market by a Government report on the future of the financial markets in Sweden (Dennis, 2000).

---

<sup>91</sup> Subsequently after some media attention, *Handelsbanken* reduced their fee to 0.9 per cent.

<sup>92</sup> A 'national fund' is less restricted as to how heavily they are allowed to weight a particular asset (where a 'normal' mutual fund is limited to holding less than 10 per cent of its assets in one equity).

One of the arguments for choosing to enter the index product niche was the wish to avoid direct competition with larger firms. Mr. Houlst reasoned that the risk of larger firms introducing a large number of index funds is limited, primarily due to the potential for internal conflicts:

*"I would not like to run a mutual fund firm that sells both managed and index funds... I would not want to have a managed Swedish broad objective fund and a similar index funds. Because then I have... as it looks today, I charge 1.5 per cent for the managed fund, and 0.5, 0.6 [per cent] for the index fund. And I know that [after a while], the index fund performs better... How can I keep my price up on the managed fund? How can I motivate my customers to buy it?"*

However, imitation of the index concept was not seen as only negative though. As the idea of index investment was relatively new among consumers, Mr. Houlst saw possible positive marketing externalities.

*"... I am happy the more firms propagate for the index [concept]. It is good... I mean, this is the alternative to traditional management... Basically I feel that it [imitation] is good. We do not have the strength to spread the index concept on our own."*

But all imitation was not seen with equal joy. Larger firms starting index funds were seen as potentially threatening.

*"... there is a clear risk that large foreign firms enter when the PPM<sup>93</sup> allow index products. We then have to rely on the Penser name being appreciated. We have a good, strong brand, which is not very common. And also the feeling that the money invested stays in Sweden."*

#### 6.1.1 *Has the index niche strategy worked?*

By the year 2000, three other firms had introduced index funds in the Swedish market - all of them small firms and relatively new entrants. *Penser Fonder* has retained its position as the second largest actor (after *Handelsbanken*) in the product niche for index funds, and their main

---

<sup>93</sup> The new pension system, see discussion in section 3.3.3.2.

hope for the future has been the introduction of the *Premiepension* system *PPM* (the new pension system, see the discussion in section 3.3.3.2, chapter three). While the bet that few other large firms would enter the index niche seems to have been correct, there is also the question of whether the index niche is an attractive niche to be in at all.

At the time of writing this case study the figures of the first and second *PPM* investment rounds show that *Penser Fonder* took a 0.4 per cent market share in both of these investment rounds, which places them in the lower half of the list of firms participating in the *PPM*. *Penser Fonder* attracted about half the market share of another firm that entered the market in 1996, but which focused on the niche of *Socially Responsible Investment* – *KPA*. There are several different possible explanations for the difference in success rate in the new pension system though. Firstly, the Premie Pension authority (*Premiepensions myndigheten*) only allowed *Penser Fonder* to enter its Swedish index fund, not their foreign index funds. As the Swedish stock market plummeted shortly after the first PPS selection fund, Swedish index funds have not been very attractive investment vehicles to most investors. Secondly, *KPA* – being the mutual fund subsidiary of a communal workers' union – had a 'captive' customer base to roll out their products to. It is thus difficult to attribute the difference in the success rates of these two firms to a difference in the attractiveness of these two niches. What is clear, though, is that the most successful independent entrant, judging from the *PPM* figures, is *Didner & Gerge*. This is a small (two-man) firm that offers only one actively managed fund, but they took a market share of 4.7 per cent, ahead of several of the large banks that have traditionally held the market in a strong grip. *Didner & Gerge* has shown a very strong asset management record, and they have received much media attention as the 'David' against the 'Goliath's' of the mutual fund industry.

So, while entering the index niche has meant limited competition from other large actors, customer interest in this niche has also been limited, leading to modest growth prospects (in terms of market share). While the limited interest from large actors provides relief from competition, it also probably bounds consumer awareness of the product niche due to smaller marketing externalities.

The next case study is of a firm that made the entry into the niche of Socially Responsible funds central to its strategy.

## 6.2 Salvation through Socially Responsible Investment

The second case relates the story of one of the first independent firms active in the mutual fund market. The firms had to change competitive niche in the early 1990's and became synonymous with socially responsible investment in Sweden – *Banco Fonder*.

*Banco Fonder* was established in 1975 as the common fund management firm of *Provinsbankerna* – a confederation of six local banks. *Banco Fonder* provided the fund management services, and the local 'province' banks distributed these to their customers. The arrangement meant that *Banco* had little direct contact with the end customer, and therefore was rather unknown to the average consumer. By the end of the 1980's, most of the *Provinsbankerna* had been acquired by larger actors and the distribution channel of *Banco* disappeared. As the CEO, Mrs. Kajsa Lindstahl recalls:

*"I had been the managing director for a couple of years, this was in 1988-89 and I wanted to show that it was possible to survive on fund management only [without having to be a bank]... How does one find a niche so that consumers find us instead of the banks? Where are the customers who are conscious enough to look one extra time before they choose a fund investment?... The third [consideration] was that at heart I am a humanist ... I do not like the talk of 'raw capitalism' and want to show that money is a tool. Sweden is permeated by charity organizations, a lot of people are members of these organizations, and they are active members. If you set up funds where they can access the stock market and simultaneously support their organization, perhaps we could, in addition to their bank savings, induce them to save money to support for example, Amnesty or Save the Children. If you cooperate with these organizations, you can find the distribution channels so that you can by-pass the banks and reach the socially conscious individuals..."*

One of the main arguments for entering the niche of *SRI* was thus the perceived lack of competitors in the niche, as well as the possibility of targeting a customer group that would be 'conscious' enough to break away from the dominance of the large banks. The central idea was to start 'charity funds' (*Ideella fonder*). These are 'normal' mutual funds, but they pledge a certain percentage of the assets under management to some charitable cause. A novel feature of the *Banco* charity

funds was that every fund was tied to several non-governmental organizations, or charities (such as *Amnesty International*). The investor could then choose what particular organization would receive a part of their gains from the mutual fund. By connecting a number of charity organizations to the fund, *Banco Fonder* counted on interesting the charity organizations in informing their members about the *Banco* funds. Initially the main skepticism to the idea of combining the world of business with the world of charity organizations came not from within the business community, but rather from the charity organizations. The idea of working together with 'speculative interests' such as a mutual fund management firm seemed strange to some.

From charity funds came the idea and incentives to launch the first Socially Responsible Investment (SRI) fund in 1994. While *Banco Fonder* was not the first firm in Sweden to launch an ethical mutual fund<sup>94</sup>, it was the first firm to make it central to its product market strategy. The management of an ethical fund includes applying an ethical selection criterion to the firms the fund manager is allowed to invest in. For investments in ethical Swedish firms, *Banco* has the competence to do ethical screening 'in-house', but for the selection of foreign firms as ethically sound they rely on cooperation with an external advisor. For the management of their environmental fund, they cooperate with an environmental organization – *The Natural Step* (*Det Naturliga Steget*), which provides the environmental screening of firms to invest in. This concept has since been expanded and *Banco* now (by 2000) offers several different SRI funds and they are collaborating with *Global Risk Management Services* in London for ethical screening of international firms. *Banco Fonder* is also working on becoming more 'proactive', so that the use of negative selection lists can be developed into a more positive stance of supporting socially responsible business practices.

*Banco Fonder* was first imitated by *Wasa Fonder* (a subsidiary to an insurance firm) and then, in 1996, *KPA* entered as the second firm that had SRI as the main strategic focus. With respect to the effects of small imitators, Mrs. Lindstahl reasons in much the same way that Mr. Houlst of *Penser Fonder* did – imitation is good in the sense that it helps promote the concept, but bad when the large firms enter.

---

<sup>94</sup> Robur started the Swedish Church mutual fund in 1980, which did not invest in alcohol, tobacco or weapons.

*"... We feel the competition keenly. It is natural that when the large dragons enter, it is SEB and Skandia and Wasa who also do this, it increases competition. At the same time it is also good that more ethical funds are started so that the media and customers understand that there is not just one ethical concept... It is good when there is a debate [around the product]."*

#### 6.2.1 Did the SRI niche strategy succeed?

From 1990 to 2000 few larger actors have entered the SRI product niche, and *Banco Fonder* has held a dominating market share in the niche. Mrs. Lindstahl attributed the main reason for the lack of larger firm entry to the skepticism in the concept of SRI in the industry. However, competition from other small actors is growing tougher. In the PPM (Premiepensions Myndighet) investment round in 2000, *Banco* gained a market share of 0.77 per cent - as much as the main competitor *KPA* did. However, in the investment round in 2001, *KPA* increased their market share to 1 per cent, while *Banco* reduced their market share to about 0.65 per cent. While it seems that the SRI niche has been secure from the larger firms, there is still competition from other smaller firms. It is, however, very uncertain to judge the success or failure of entering the SRI product niche from the numbers of the PPM market shares. Industry analysts have suggested that the PPM selection was not as much a mutual fund selection process as a pension selection process. That is, the investors that invested their money were investing in pensions. A possible consequence was that mutual fund firms that were perceived as 'pension firms', rather than 'mutual fund firms' were more likely to be selected by the investors. Looking at the distribution of market shares from the first PPM selection round, this explanation seems to hold some face validity as the major gainers were the insurance firms and the, formerly, pure-play pension firms.

Focusing on the SRI product niche seems to have been relatively more successful than focusing on the index niche, judging from figures from the PPM investment rounds. It is however still a far cry from the success of *Dickner & Gerge* who are active in the much larger (and more competitive) product niche for actively managed Sweden funds.

### 6.3 Better to be a big fish in a small pond or vice versa?

The two cases from the mutual fund industry show evidence, at least in the form of ex-post rationalization by managers, of both of the

mechanisms described in chapter two as to why firms would choose to break with existing norms. Managers of both firms explained their entry into the niches of *Index* funds and *SRI* by the need to avoid direct competition with the larger firms. Only the firm entering into the *Index* niche claimed to do so for cost-saving reasons, but both firms thought their moves would be unlikely to be imitated by other larger firms due to what they termed as 'internal resistance' in the larger firms. The case studies thus provide some face validity and an illustration of an institutional interpretation of the main findings of the quantitative analysis of chapter five.

Both firms in the case studies seem to have bet on it being better for a new entrant to aim for a relatively un-crowded niche, which may lack in legitimacy and size, than to enter the fray and compete with the larger firms for the established and larger niches. The managers who broke with norms as their core strategy, claimed that they had done so for the very reason of avoiding head-on competition, and they thought that their main protection against the larger firms was that they did not consider their chosen product niche as 'proper'. However, they were at the same time concerned that the product niche should not be too small – that it would be difficult for them as lone advocates for a new product niche to gain consumer awareness. They saw the need for help in 'breaking the ice' with consumers with respect to the new product category. In essence their dilemma reflected that of being a small fish in a large pond or a big fish in a small pond. Ideally for a small firm to succeed, the product niche entered should be low on competition ('outrageous' in the eyes of the competitors) while at the same time attractive for consumers to invest in.

Looking at the average size of a mutual fund over the first four years after introduction by a small firm provides some interesting figures for speculating about such a trade-off. These figures, it must be emphasized, are a very rough cut at estimating how well small firms fare in their efforts to enter different product niches. There are sampling issues as well as the period - specific issues. To control for the time that a mutual fund has existed (which is normally positively related to its size), the sample includes only the first four years of the mutual fund, and only funds that have existed 4 years or longer (by the year 2000). To control for obvious differences in sales and distribution networks, only firms that are not owned by banks or insurance firms were



sampled, leaving a modest sample of 12 firms for which data was available. A more troublesome issue is the period specific difference in growth of the underlying assets. For example, the regional funds, including Russia funds (part of the region fund category), performed very well during this particular period (the end of the 1990's) and firms that may have sold even moderate amounts of fund shares would still control large funds, mainly as an effect of the positive development of stocks in Russia. Despite these measurement shortcomings the figures provide a rough estimate of the average fund size over the first four years of the mutual fund for each of these product categories. The numbers provide an indication of the expected fund size that a small firm entering a new product into each of these different product categories would achieve.

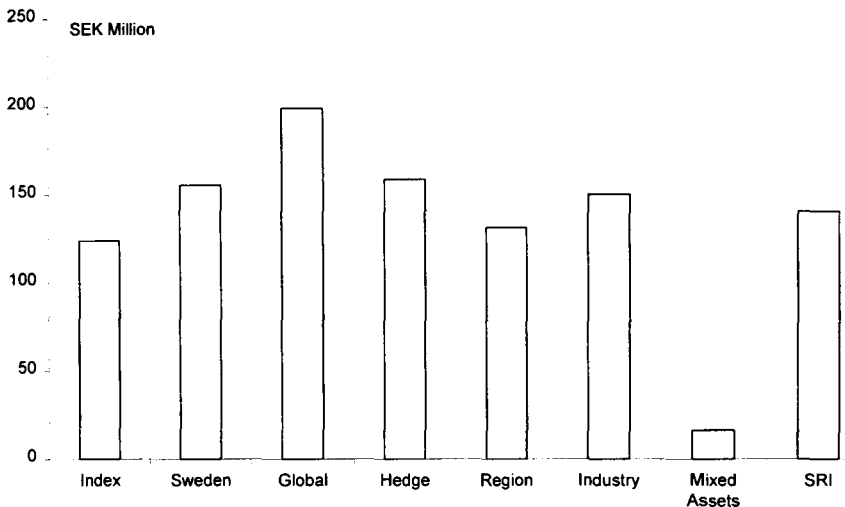


Figure 38 - Average fund size (over first four years) for small firms

Entering the Global fund segment gave the highest average fund size after the initial four years. Small firms entering the large 'bread-and-butter' product niche (Swedish equity funds) were approximately as successful an entry as entering an industry or hedge fund niche. Similarly, firms entering the *Index* or *SRI* niches fared approximately as well as firms entering most of the other more established product niches. An exception is the *Mixed assets* niche, where the average size was significantly less than for the other funds. This figure must be treated with skepticism as there was only one firm in the data set that

had entered this product niche by 1996 (allowing for four years of data), although several entered by 1998. While treated as rough estimates, these figures suggest that for the average small firm, choice of product market niche does not matter greatly for the expected value of niche entry.

The next, and final, chapter discusses the findings of this dissertation in relation to earlier empirical studies and the theoretical understanding of how firms compete.

## Discussion and Conclusions

---

HOW DO ECONOMIC INCENTIVES and institutionalized norms of appropriate firm behavior influence the ways firms choose to compete? The initial example of the Swedish *hälsöhem* industry where firms, although seeing other industry members flounder and fail, refused to change in ways incompatible with traditional norms illustrates some of the main considerations investigated in this dissertation. Do concerns of profitability or appropriateness guide organizational and strategic change – or do both? In contrast to the slumbering (dying?), economically peripheral, Swedish *hälsöhem* industry, the empirical focus of the dissertation is on competitive firm behavior in the very ‘gut’ of the market economy – the financial sector. Using the product market behavior of mutual fund firms as a proxy of competitive firm behavior, the interaction of competitive norms and economic incentives on competitive behavior is investigated. Diffusion theories from an economic, a sociological and an institutional organization perspective form the theoretical framework for addressing the competitive product market behavior of these firms. The economic diffusion model, where differences in perceived product profitability is thought to guide diffusion, is contrasted with a sociological and an institutional perspective, where social position of earlier adopters as well as the cultural understanding of the diffusing product is also seen to matter.

A retrospective, qualitative, historical study of the development of the mutual fund market in Sweden provides an understanding of how the market for mutual funds was constructed. Norms of competing congealed among firms over time as a result of regulative actions, societal change, the professionalization of security analysts and

the individual firm's strategic choices. Salient norms of competitive behavior include the value of 'active asset management' as the main selling argument of mutual funds and the concomitant importance of security analysts in the industry. This historical understanding of the competitive context and the norms held about how to compete is then used to frame specific hypotheses about how different new product categories are expected to diffuse through the industry, and about what firms are expected to be leaders and laggards respectively. In particular, the product introduction behavior of firms with respect to the adoption of *Mixed asset* funds, *Index* funds and *Socially Responsible Investment* funds are investigated over the competitively most turbulent decade from 1989 to 2000. Firms that embody the existing competitive norms of active asset management are hypothesized to be particularly unlikely to adopt products that break with these norms, as predicted by an institutional model of diffusion. On the other hand, these firms are thought to be likely early adopters of products that are in line with competitive norms, following the economic diffusion model. Other firms, that for various reasons do not espouse the values of active management, are hypothesized to be relatively more likely to adopt products that break with existing norms. Firms are thus hypothesized to introduce new products according to perceived profitability, and also according to what is seen as appropriate in relation to how they see the competitive norms in the industry. Such 'product controversiality effects' are hypothesized to be influential even when relative efficiency of the product in question is controlled for.

The hypotheses are tested quantitatively using longitudinal event-history data and a diffusion model that allows for firm-level heterogeneity in adoption behavior. Results indicate support for the hypothesized differences in firm-level likelihood of adoption of differently 'legitimate' products, predicted by their institutional embeddedness. *Mixed asset* funds are more likely to be adopted by firms that espouse the norm of active management and employ many security analysts. Relative performance of the product is also strongly influential in the adoption decision. Conversely, *Index* and *Socially Responsible Investment* funds are more likely to be adopted by firms that do not exhibit the signs of espousing the norms of active management. The spread of these product categories through the adoption communities also seems to follow from different mechanisms. While *Mixed asset* funds diffuse

through market contacts among similar firms, driven by perceived product performance, *Index* and *SRI* funds diffuse on the basis of professional network contacts with earlier adopting firms. The findings support the economic diffusion model, where the product in question conforms to competitive norms, and the sociological diffusion models where the product deviates from prevalent competitive norms.

The main quantitative empirical finding is the negative relation between the number of security analysts employed and the likelihood of adopting either an *Index* or a *SRI* mutual fund. Conversely, the number of analysts employed was found to be positively related to the likelihood of adopting a *Mixed assets* mutual fund. The negative relation between the likelihood of adopting *Index* funds and the number of analysts employed has several possible alternative explanations. Firstly, if the number of security analysts is a proxy of firm size, index funds may be less likely to be adopted by large firms as they may cause a relatively larger substitution effect than for smaller firms. The substitution (or cannibalization) effect takes place where customers shift investments from actively managed (at a higher management fee level) to index funds (at a lower fee). Larger firms, that employ more analysts, would then be relatively more reluctant to introduce index funds smaller firms would be. There are two problems with such an interpretation though. Firstly, firm size (as measured by market share) is included in the analysis and should capture any 'firm-size' specific effects. Secondly, if the negative relationship is a 'cannibalization' effect, there should be such an effect for the *SRI* funds as they command at least as high management fees as other actively managed funds. As shown in section 5.2.2, however, the negative relationship between likelihood of adoption and the number of analysts employed holds for *SRI* funds too. The finding that both an actively managed (*SRI*) and a passively managed (*Index*) fund relate in the same way to the number of analysts employed provides some support for an institutional interpretation. The negative relationship can be interpreted to stem from a shared 'breaking of norms' rather than the specific features of the individual products.

Another alternative explanation would be a 'competence' interpretation of the negative relationship between analysts and the likelihood of *Index* and *SRI* fund adoptions. An economic (resource-based) argument would be that firms with money invested in a strong security

analyst resource base (many analysts) would rationally be less likely to adopt a product (*Index* funds) that does not make use of this resource base, but at the same time utilizes the distribution channels. Again, while this argument has face validity with respect to the adoption of *index* funds, it is difficult to see why *SRI* funds show the same negative relationship as *Index* funds. A possibility would be that *SRI* fund management places totally different competence demands on the analysts, so that a 'normal' analyst is useless with respect to the management of a *SRI* fund. There is, however, a well-functioning market for *SRI* screening services, where a specialized firm<sup>95</sup> provides lists to *SRI* fund managers of firms that are not 'sanctioned' to invest in from an environmental, or ethical point of view. The fund manager then chooses from a more restricted 'universe' of possible investments for the fund, and the competence required from the fund manager remains the same. Most of the firms that have adopted *SRI* funds in the Swedish mutual fund industry use one or more screening firms in this fashion.

Related to the competence view, and even more so with an institutional view, is a third alternative interpretation – the organization-political view. If security analysts are important actors in the mutual fund firm, as is argued in chapter three, their collectively held professional likes and dislikes of fund categories may play an important role in the actual product market behavior of the firm. This explanation is arguably not an alternative to the above institutional interpretation as much as it is a complementary explanation at a different level of analysis. As argued in chapter three, security analysts may have good reason to dislike the adoption of index funds as it challenges their professional role. Also *SRI* funds may be looked upon with some professional skepticism as it embodies a belief that social responsibility is a sign of a successful firm. Smaller firms where internal resistance would be less might, according to this line of argument, be more likely adopters. Lack of process-level data in this dissertation, however, renders it impossible to claim that the observed outcome of the analysis is a result of political maneuvering by security analysts.

Case studies of two firms that have adopted *Index* and *SRI* funds then allow further interpretation of the quantitative findings. Managers of these firms claim that entering these product niches was a conscious

---

<sup>95</sup> For example, in Sweden Caring Company or Det Naturliga Steget provide such services.

strategic decision primarily to escape head-on competition with the larger firms in the industry. Their assumption for why these particular products would provide a sheltered niche was the *unwillingness* of the larger firms to imitate them, rather than the low profitability or the difficulty of imitation (as is suggested in most strategic management theories). Another issue from the cases, however, is that new products in this market gain from marketing externalities – meaning that some imitation is beneficial to the innovator. In the end, the main strategic issue faced by these firms seems to be whether it is better to be a large fish in a small pond, or vice versa. Rough empirical evidence however indicates that there is little difference to a small firm whether it enters a legitimate (large) or an illegitimate (smaller) pond.

These findings are interesting both from an empirical as well as a theoretical point of view. At an empirical level, the findings contribute to the vast field of diffusion studies as well as to the considerably smaller field of how industry-wide norms influence a firm's behavior. Theoretically, the findings are interesting mainly from the point of view of theories of competition and competitive behavior, such as the issue of barriers to imitation in the strategic management literature, theories of change in institutional organization theory and ideas of product niche establishment in organizational ecology.

## 7.1 The empirical contribution – dealing with a ‘pro-innovation bias’ in diffusion studies and an out-of-sample study of how societal norms influence firm behavior

### 7.1.1 *The (diffusion) path less traveled*

At one level, this dissertation reports on just another diffusion study – one in a very long line (c.f. Rogers, 1995; Strang and Soule, 1998). A novel feature of this study is that it investigates the spread of innovations of differing legitimacy in an adoption community. While several earlier studies have investigated the diffusion of ‘controversial’ innovations (c.f. Leblebici et. al, 1991; Davis and Greve, 1997) such studies have typically not predicted differences in diffusion patterns as a function of divergence from norms but rather recorded these as interesting empirical outcomes. Additionally these studies have focused on the diffusion of practices and ideas for which the relative efficiency is difficult

to judge, thus providing limited insight into how innovation content matters in relation to concerns about efficiency. Three features of the research design of this particular diffusion study thus set it apart from earlier diffusion studies. Firstly the dissertation employed a multi-innovation design, following the diffusion of several innovations through a single adoption community. Secondly, the innovations were not selected on their 'economic impact' or salience; instead one of the product categories investigated was widely considered controversial to adopt by many actors in the industry. Thirdly, the relative efficiency of the product innovations studied were easily observed for the adopting firms. These features represent 'the road less traveled' by most diffusion researchers, and in this case, the road that made all the difference.

#### 7.1.1.1 A study of multiple innovations

As suggested by Strang and Soule (1998) much can be learnt about diffusion processes by studying the spread of multiple competing innovations through a single adoption community. Firstly, product innovations are most often not adopted in a competitive vacuum but the introduction of related products may play a role (c.f. Burton, 1994). Secondly, and more important to the aim of this dissertation, when investigating differences in adoption behavior across firms theorized as outcomes of, for example, legitimization processes, it is essential to have variation in the degree of legitimacy of the different innovations adopted. Had this been a single-innovation analysis, or if all mutual fund products had been conflated to a single category, the quantitative results would have been strongly supportive of the standard economic framework. The product introduction behavior of firms in the mutual fund industry would have been understood to follow tightly on profit perceptions as predicted by standard economic theory<sup>96</sup>. Distinguishing, in the analysis, between a set of products that break with and one that conforms to existing norms of how firms should compete in the market for mutual funds provides a richer picture of the diffusion process.

#### 7.1.1.2 Pro-innovation bias and differences between an economic and sociological diffusion model

As discussed in chapter two, few diffusion studies stay clear of the 'pro-innovation bias' that comes from studying the diffusion of inno-

---

<sup>96</sup> See results in Appendix I to this chapter.



vations that have, ex post, proved to diffuse successfully. This study dealt explicitly with the pro-innovation bias by including not only innovations that had diffused well, but also those that had (in the same time period and in the same adoption community) not diffused equally well. This inclusion, while not directly providing new theoretical insights into the field of diffusion research, provided an opportunity to show the potential complementarity of the economic and sociological fields of diffusion research. The findings suggest that the economic diffusion model predicted the diffusion of the legitimate product (*Mixed assets funds*) well. This is not an entirely surprising finding since a common empirical strategy of diffusion economists has long been to sample 'economically significant' innovations, i.e. innovations that have diffused widely. Such innovations are not likely to have been controversial with the adoption communities and consequently variables that denote institutional embeddedness would be of little predictive value. Including institutional variables, on the other hand, provided improved predictive power in particular with respect to the diffusion of innovations that were considered controversial in the industry setting. Hence, the suggestion of chapter two that the apparently divergent findings of the sociological and the economic diffusion fields can actually be seen as complementary to a degree seems to be supported. Diffusion researchers could thus use the more parsimonious economic diffusion model when investigating the spread of innovations which conform with existing norms. When investigating the spread of controversial innovations, on the other hand, an institutional diffusion model needs to be used.

#### 7.1.1.3 Concerns of efficiency and appropriateness

The dissertation also contributes by simultaneously investigating the content and relative efficiency effects of innovations. Most earlier empirical studies of content effects of innovations have focused on innovations for which the relative efficiency is difficult to judge such as organizational practices (c.f. Kraatz and Zajac, 1996; Davis and Greve, 1997). In contrast, this dissertation investigates the spread of new products, for which sales figures are available within a couple of months of introduction, providing adopters (and potential adopters) with a clear picture of the relative efficiency of the innovations. This feature allows for investigating whether or not concerns of appropriateness are significant when firms also can take efficiency considera-

tions into account. The findings of this dissertation indicate that concerns of appropriateness are significant, even when controlling for the relative efficiency of the product innovations. The **Number of analysts** employed variable added significant predictive value to the model together with the proxy variable for relative efficiency (**Average fund size**). In fact, looking at the multiplier effects of the different variables in the model (see Table 14 page 196) both the 'legitimacy' and the 'efficiency' variables come across as the most influential variables in the model.

### *7.1.2 The influence of society-wide norms on the competitive behavior of firms*

The dissertation also makes an empirical contribution, by providing an 'out-of-sample' study, to the nascent empirical literature on how society- and industry-wide norms influence firm behavior (Haveman and Rao, 1997; Thornton and Ocasio, 1999; Lounsbury, 2001; Ogbonna and Harris, 2002). While Haveman and Rao (1997) investigate the effect of societal change on the organizational forms of thrifts in California, Thornton and Ocasio (1999) show that sources of executive powers in organizations differ across historical contexts. Related to the present study, Lounsbury (2001) studies the influence of a change in the professional status of security analysts on the product introduction strategies of mutual fund firms in the U.S. The dissertation contributes to this literature by providing an out-of-sample empirical support for the main contention – that society- and industry-level norms influence firm behavior. Chapter three details the historical context into which product adoptions have taken place and these hypotheses are investigated in the quantitative study. All earlier studies in this field have been in the institutional context of the U.S., whereas this study deals with a European institutional context. Furthermore, earlier studies have all been deeply rooted in the sociological tradition, whereas the present study also offers an explicit economic perspective on the findings.

## 7.2 The theoretical contribution – institutions influenced by competition and competition influenced by institutions

A finding in the analyses above is that the standard economic diffusion model explains imitation behavior well (a central part of competitive behavior) when the innovation in question is in line with existing com-

petitive norms in the industry. Where the innovation contradicts such norms, however, the inclusion of institutional variables improves the explanatory power of the model significantly. This finding has implications for understanding influences on and the effects of economic incentives and norms on the competitive behavior of firms.

#### *7.2.1 Institutional theory and drivers of institutional change*

Competition may provide direct as well as indirect incentives for firms to adhere to as well as break with institutionalized ideas of how to act. From an institutional theory perspective, the notion of an organizational field is central, and a key proposition is that in most organizational fields the actions and forms of organizations become increasingly homogeneous over time. Resource competition along with regulatory, cognitive and normative mimetic processes are seen as key drivers behind the increasing homogeneity in fields (DiMaggio and Powell, 1983). Given that even institutionalized settings, such as old industries, do change over time an important question is how change occurs in an institutionalized field (c.f. Leblebici et. al., 1991; Greenwood and Hinings, 1996). Apart from providing incentives for homogeneity, competition has been shown to induce firms to change in ways inconsistent with prevailing norms by pressurizing some firms (that are not doing so well) to adopt less common practices to mitigate the effects of competition (Kraatz and Zajac, 1996). Greve (1996) shows another effect of competition on change and isomorphism in a field. He finds that patterns of imitation of competitive positions follow social structures and competitive interaction which, under widespread imitation, lead to an increased heterogeneity in an organizational field. The argument is that while firms behave as predicted by a theory of isomorphism (they imitate 'significant others'), their 'role models', or the firms they are most likely to imitate, are not those they share the local market with. This is because firms are more likely to notice the actions of other firms that they have a social connection to, and are also less likely to take actions that would increase competition in the local market. The result is that while firms do imitate the actions of other firms, they often imitate ideas and practices from other markets so as to minimize negative competitive effects and local organizational fields become more heterogeneous through competition.

In the mutual fund industry in Sweden, the value of 'active management' is a norm of competition institutionalized during the 1990's.

The institutionalization of this idea can be seen partly as an effect of increased competition for consumers during the 1990's. Some firms broke with this norm, however, and introduced *Index* and *SRI* funds and employed fewer analysts. What firms chose to defy the norms? According to the findings of Kraatz and Zajac (1996), the competitively disadvantaged firms would be more likely candidates to introduce a controversial product. Quantitative analysis of firms in the Swedish mutual fund industry however provides limited support for such an explanation<sup>97</sup>. The case studies, on the other hand, provide examples of firms that defied the norms as part of a calculated strategy. One strategy was to reduce costs associated with complying with institutionalized norms (expensive analysts), in line with earlier findings by Leblebici et. al., (1991). Another strategy was to seek out a niche that would be secure from the largest firms, in line with the findings of Kraatz and Zajac (1996). The firms that did this, however, were not 'failing' firms in the sense that they had recently lost market shares. In fact, firms that were doing well (had recently gained market shares) were shown in the quantitative analysis as more likely to be influenced by the adoption of a controversial product (see Table 7). These findings indicate that firms may have direct and indirect competitive incentives to break with norms. A direct incentive was that some firms chose a controversial fund to avoid directly competing with larger and more powerful firms. This choice was 'forward-looking' because the firms had not already had lost market shares, but they wanted to avoid losing market shares. An indirect competitive effect was that due to competition for resources (security analysts) the cost of that resource increased sufficiently to induce some firms to adopt index funds, where the costly resource of security analysts are not needed. Both of these incentives to break with norms provided a greater heterogeneity in the collective product market offering of the industry – there was a wider variety of funds on offer by the end of 1999 than by the end of 1989 (see Figure 2 on page 53).

The findings of the dissertation thus provide some support to findings of the (relatively few) earlier empirical studies that directly relate competition to institutional change (c.f. Dacin, 1997; D'Aunno et. al., 2000). Competition drives institutional change in a direct (threat of lost market shares) and in an indirect way (increased resource cost). In

---

<sup>97</sup> See results in appendix II to this chapter.

addition, the dissertation also relates the findings in the opposite way - the next section discusses how institutionalized norms influence the way firms compete. Observed differences in how notions which are taken-for-granted as to how to compete shape the product adoption, and thus imitative, behavior of firms. This finding has implications for theories of a firm's competitive behavior. Two such theories are those of strategic management and organizational ecology.

### *7.2.2 Strategic management theory*

From the point of view of strategic management theory, the finding that firms imitate new products partly dependent on how they perceive the legitimacy the product, takes issue with the central assumption of keen firm imitation behavior (c.f. Macmillan et. al., 1985; Rumelt, 1995). Economic diffusion literature (from which the assumption of keen imitation behavior has been adopted) is, as argued in chapter two, empirically weak on the study of innovations that have been seen as controversial in the adoption community. Instead, the focus has been on innovations already successfully diffused. As found in this dissertation, such innovations diffuse in line with the predictions of the economic model, providing further support for entrenched ideas about the competitive behavior of firms. The solid empirical finding in industrial organization economics of firms as keen imitators evokes an imagery of firms ready to descend on a successful innovation like a pack of hungry wolves (c.f. Barney, 1991; Peteraf, 1993). The persistence of this notion has led a number of thinkers in the field of strategic management to speculate about the extra-ordinary qualities an innovation must possess to generate sustainable advantage to an innovator. Ideas have centered around either the impossibility of competing firms to imitate due to patents, the complexity of an innovation (c.f. Levin et al. 1987; Reed and DeFillippi, 1990; Porter, 1996; Rivkin, 2001), or the poor profitability to firms of imitation due to the lack of complementary resources (Wernerfelt, 1984; Teece, 1987a; Barney, 1991). The argument has been that as firms are keen imitators, a profitable innovation that can be imitated will be imitated very quickly.

Other authors have, however, voiced concern about the neo-classical view of the firm, arguing that there is a lack of social richness in such a view of the firm (Nelson, 1991; Barney and Zajac, 1994; Dacin et al. 1999). Recognizing that imitation takes place in an organizational context, several authors have also speculated about strategic

imitation behavior as partly influenced by organizational issues such as internal politics, uncertainty and organizational 'frictions' (MacMillan et al. 1985; Schoemaker, 1990; Rumelt, 1995). Other authors have suggested alternative impediments to imitation behavior based in the competitive context of the firm (Miller and Chen, 1994b) as well as in the institutional environment of the firm (Oliver, 1997).

The empirical focus of this dissertation explicitly excluded the questions of impossibility of imitation by selecting an empirical context where there were no patents, and product innovations were technically simple. Instead, it focused on the influence of institutionalized ideas on the imitation behavior of firms. The findings support the theoretical notion of 'institutional isolating mechanisms', where some competitive actions are not imitated due to their perceived illegitimacy with a large section of firms in an industry (McMillan et al., 1985; Oliver, 1997). Oliver (1997) argues that the resource acquisition decision of firms has mainly been assumed to be rational in strategic management theory. Instead she argues for understanding managerial decision-making as motivated by economic rationality but constrained by the institutional context of the organization and thus the decision-maker. While not investigating the specific resource acquisition decision of firms, this dissertation is supportive of the general contention of the value of including both economic and institutional aspects of a firm's competitive behavior.

The findings could also be seen from the perspective of earlier findings of 'competitive inertia' affecting a firm's competitive behavior. Miller and Chen (1994b) find that firms sometimes display 'competitive inertia' – an abnormal slowness in reacting to the competitive moves of their peers. They see inertia as based primarily on a lack of firm-level incentives to act – i.e. firms that had performed well and had a limited exposure to different markets were most likely to be competitively inert. While the findings of this dissertation can be interpreted in terms of 'competitive inertia' (slowness in imitating), there is a difference in where the sources of this inertia are thought to come from. Miller and Chen assume that all competitive actions are equally likely to be implemented by all actors, but that differences in how fast they are actually implemented depend on the *incentives* of firms to implement them. These incentives are primarily seen as stemming from either the performance history of the firm (where poor performance is thought to

'spur' *any* action) or from the experience base of the firm (where a wider experience is thought to lead to a wider repertoire of actions). The argument of this dissertation is that the likelihood of a specific competitive action being undertaken is dependent *both* on the firm and the focal action. Some products are more controversial in a particular setting, and some firms are more sensitive to the legitimacy of their actions. A firm may thus be competitively 'inert' with respect to one action, while competitively 'agile' with respect to another action. Miller and Chen do differentiate between the competitive inertia of firms with respect to 'tactical' and 'strategic' actions, where strategic actions are more important moves. The findings of this dissertation, however, indicate that even when the competitive importance of two actions is the same (whether tactical or strategic) the level of competitive inertia of a single firm may still differ. A firm that is fast to introduce a *Mixed asset* fund is likely to be slow to respond to the introduction of an *Index* or *SRI* fund. There is thus asymmetry in the competitive inertia of a firm, and the drivers of this asymmetry can best be understood as a result of the firm's embeddedness in the institutional environment.

### 7.2.3 *The mystery of why service firms innovate*

Inspired by the use of the economic diffusion model in strategic management theory, the innovation-in-services literature (Gershuny and Miles, 1983; Barras, 1986; Hauknes, 1996; Gallouj and Weinstein, 1997) has also adopted the idea of the keenly imitating firm. Central to this notion is the importance of impediments to imitation, as the innovator will not otherwise have a temporary monopoly and will not be interested in the gamble of innovation (Teece, 1987). This notion is especially problematic to apply to a service innovation as such innovations tend to be process-oriented and therefore poorly understood as to their profitability, and equally poorly protected from a legal point of view. Consequently, there has been much debate and research on the issue of why service firms bother innovating at all, since the intellectual property rights as well as the technological barriers to imitation are very low (Sundbo, 1992; Hauknes, 1996; Molyneux and Shamroukh, 1999). Attempts have been made to theoretically argue the case of how service innovations may still be beneficial to an industry at large (Gadrey et al. 1995), and other authors have expanded the concept of the 'innovator' to include the consumer (Grönroos, 1987; Gallouj and Weinstein,

1997) to explain why service innovations are difficult to imitate and therefore may still be economically worthwhile to undertake.

The findings of this dissertation suggest that the worries of service management scholars that the threat of service innovations being quickly imitated (due to a lack of technical or legal protection) depresses incentives to innovate may be exaggerated. The point is that service innovations are more likely to be influenced by norms of appropriateness as they are more difficult to prove/disprove on a technical basis (c.f. Scott and Meyer, 1983). Therefore, adopting assumptions of keen imitation behavior based on the findings of an economic diffusion model should be particularly unsuitable for strategizing in a service industry context. Instead of looking to technical or legal impediments to imitation, the findings of this dissertation suggest that service management scholars usefully may look to the 'fit' of the innovation and the institutional environment into which it is introduced. Service innovations that fit well with institutionalized norms of how to compete would run the risk of being imitated rapidly, while innovations that are 'controversial' may obtain a degree of protection against imitation from this. Such ideas are in line with earlier non-technical diffusion research on the spread of e.g. Matrix structures and TQM practices (Burns and Wholey, 1993; Strang and Macy, 2001).

#### *7.2.4 Organizational ecology – competitive intensity and the institutional fit of the competitive action*

As discussed above, a finding of the dissertation is that competition affects institutionalized ideas of how to compete, which, in turn, affect competition. The findings of this research are, in a sense, analogous to the density-dependence model, which is central to organizational ecology theories (Singh and Lumsden, 1990). According to this model the density of firms of a particular organizational form in an industry over time follows an  $\cap$ -shape, as a result of the competing forces of legitimization of the organizational form and competition for resources among the organizations (Hannan and Carroll, 1992). For new product niches a similar logic can be applied. When a new product niche is opened it suffers legitimacy problems, but as more firms enter it becomes a recognized and acceptable product niche to be in. Legitimacy increases the inflow (and the density) of firms in the niche. After a while, resource competition among these firms increases more than the beneficial effects of legitimization, with a corresponding increase in



firms exiting from the niche and an eventual decrease in density. When different niches in a market are differently resource-rich, a process of 'resource partitioning' may occur whereby larger generalist firms occupy the central niches and smaller, specialist organizations occupy the less resource rich peripheral niches (Carroll, 1985).

The findings of this dissertation provide empirical support for the density-dependence model of how product niches are created and sustained. However, the findings also point to the implications of institutional norms of competing as determining the initial level of legitimacy of new product niches (c.f. 'Baum and Oliver, 1996). The product niche of *Mixed asset* funds was quickly seen as a legitimate product niche to be in. Both the *index* and the *SRI* product niches, on the other hand, were slower in gaining legitimacy – arguably due to their poor match with existing norms of competing. These differences in the speed of becoming legitimate product niches also led to different levels of competition in the two niches. All the large actors were in the *Mixed asset* product niche within a couple of years, whereas the niche for *index* and *SRI* funds still lacks the participation of all but one large player. As indicated in the case studies, small firms that lack the resources to compete head-on with larger actors may use this asymmetry of competitive intensity to gain a foothold in an industry. It is important to note that the lack of competition by large firms observed in this case was not explained by the relative resource scarcity of the niche (which was controlled for in the analysis). Rather, the findings imply that a number of firms chose not to enter the product niche due to its perceived illegitimacy as a competitive action – despite the economic potential of the niche.

#### 7.2.4.1 Aging and competition

A related issue is that of the competitive intensity of a firm and the influence of organizational aging. Criticizing existing organization ecological assumptions on how firms compete, Barnett (1997) points out that prevailing assumptions that firms compete as just intensively when old (and often large) as when young (and often small) lacks support in organization theory. Instead he suggests a model where firms, as they grow older and more embedded in the institutional context, lose some of their ability to compete intensively in a technological sense (due to organizational inertia) but at the same time they gain power to influence the institutional context to their advantage. The net effect of age

on competitive intensity (measured as how bad the firm is for the health of other firms) is thus dependent on how the environment rewards technical or institutional strength in competition<sup>98</sup>.

A concern with this argument is the likelihood of, empirically, confounding 'institutional' incentives to adopt with 'economic' as they would coincide for larger firms - who have 'constructed' the environment to suit them. This dissertation makes a contribution by empirically separating out institutional and economic incentives respectively for firms to adopt new product innovations through the use of 'marker variables' grounded in a historical study of the industry. The findings of this research provide mixed support for the 'aging' argument. Old firms were often keen on introducing *Mixed asset* funds, and were in that sense not inert. However, institutionally embedded firms (often old) were significantly less likely to introduce controversial products, such as *index* or *SRI* funds. Competitive 'bluntness' of old firms is thus different with respect to actions that have, or do not have, legitimacy in the institutional environment. This finding is in line with the idea behind the views of Barnett (1997), where older organizations hold a survival edge due to their increased influence over the institutional environment. The older and larger firms (as argued in chapter three) have heavily influenced the perceived legitimacy of action, for example of adopting an *index* fund. It is therefore not surprising to see that ideas that are perceived as illegitimate are not quickly adopted by the firms that have deemed them illegitimate.

Further research could focus on the effect, in terms of success-rates, of small firms in either product category. Is it better when small, to enter an established legitimate niche that also harbors larger competitors, or should a small firm aim for a smaller but less competitive niche?

### 7.3 Concerns of the findings and future research

There are two main concerns for the findings of this research, and they relate to the issues of the quality of measurements of the quantitative study and the ability to generalize the results.

---

<sup>98</sup> See also Henderson (1999) and Sørensen and Stuart (2000)

### 7.3.1 *Ability to generalize the findings*

As discussed in chapter three, a trade-off was made in the observation plan for the quantitative study. The trade-off was between studying many different organizations in different settings over a short period of time, or to use a census approach in a single industry over a longer period of time. The choice fell on the latter observation plan for a number of reasons, but the discussion around the choice touched on a number of drawbacks with a census approach. The first and most obvious drawback is the risk of the study results being entirely idiosyncratic to a single industry and a single population of firms that existed in a particular time. In a sense, it can be argued that the findings of this study are entirely specific to the Swedish mutual fund industry during the period of 1989 – 2000. Firstly, the selection of the mutual funds industry as opposed to for example the IT industry provided a set of innovations that were non-technical and cheap (and legal) to imitate. Naturally, diffusion patterns would look different in an industry where there were large costs to product adoptions (such as in production industry), or where innovations are technically complex (c.f. Levin et. al., 1987). Secondly, the specific time-period investigated was a period of extremely rapid market growth and turbulence. The industry was extensively deregulated, the market grew fast and a large number of new entrants invaded the industry. Investigating the same industry today would find a different institutional setting, where some of the 'chauvinism' of all firms wanting to be the 'best asset managers' has disappeared and the asset management industry is consolidating. The market is (today) shrinking rapidly (due to a downturn in the stock market) and many security analysts are taking pay-cuts or are being laid off. Thirdly, the Swedish mutual fund market is by most comparative standards small – comprising less than a hundred active firms, who all know each other rather well. The basic information problem of knowing what the competition is up to, common to many larger markets, is not a widely felt problem in this industry.

These limitations relate to the choice of observation plan and were known at the outset of the study, but alternatives (as discussed in chapter three) were considered worse. An indication, however, that the findings may not be totally idiosyncratic to this particular market are the broad similarities with the findings of a number of similar studies of the U.S. market for mutual funds (Lounsbury, 2001; Lounsbury,

2002; Lounsbury and Leblebici, 2002). In particular, the influence of an 'institutional logic' of how to compete and the role of professional associations in forming firm-level competitive action are similar across these two sets of studies.

To sum up these limitations warrant significant care before extending the results of this dissertation to other industries or institutional contexts, although some earlier empirical studies in the U.S. do lean in a similar direction. Future research could utilize a similar research setup in a different industry, perhaps where innovations are more technical, where profitability is less easy to see or where information about competitor actions does not flow as easily.

### 7.3.2 *Problematic measures*

Another problem, common to quantitative studies and institutional studies in particular, is operationalizing the variables of 'institutional embeddedness' as well as the 'controversiality' of a practice. As discussed in chapter four, this dissertation follows the approach of earlier studies in the institutional tradition, where effects of institutions are theorized and the existence of institutions are then imputed from observed results. There are some obvious limitations with this approach, and the most important limitation is with respect to the ability to control for confounding economic variables. There is no way to 'prove' that *Index* or *SRI* funds really are 'controversial', or that some firms care more or less about whether their actions are seen as legitimate or not. The chain of evidence in this dissertation is based on the argument that an institutional explanation fits the observed outcome better than other, alternative, explanations. While this is a common feature to most studies in social science, it is a point not discussed commonly enough. What it means with respect to the findings of this dissertation, is that the reader must be careful in the reading of the theoretical section of this dissertation and satisfy him/herself that the claim of interpretation made in the analysis section really is plausible.

There are also two specific measurement issues, as discussed in appendices I and II to chapter four (see pages 160, 162) concerning the variables used in the analysis. Firstly, analyzing *SRI* and *Index* funds as one adoption category showed, in additional analyses, to be warranted with respect to their diffusion processes, but problematic with respect to their adoption processes. In other words the underlying adoption processes of *Index* and *SRI* funds would best be modeled separately,

but due to a lack of data points this could not be done. This means an increased risk of rejecting a hypothesis regarding the adoption process when it is in fact true. There were, however, no theoretically surprising rejections of hypotheses regarding the adoption of *Index* and *SRI* funds indicating that the problems may be limited. Secondly, the co-variation between the **Average fund size** and **Firm age** variables may have caused some problems in the estimation of the adoption of *Mixed asset* funds, as indicated in the additional analysis in appendix II to chapter four. **Firm age** lost its significance, while retaining the correct sign when **Average fund size** was dropped, which indicates that they are not estimated independently. However, the hypothesized effect of the firm age variable was not central to the argument of the dissertation, so even if there are problems in the estimation of the coefficient, it should not detract from the main findings of the dissertation.

Future research could continue the effort to explicitly include both economic and institutional explanatory variables in the analysis, but enhance the quality of the 'institutional markers' used.

### 7.3.3 *Questions surrounding the results*

Not only are there questions as to the generalizability and the internal validity of the research – there were also a couple of new questions that came out of the findings. The first question that arose from the quantitative analysis and which could not be satisfactorily answered is why perceived profitability (**Average fund size**) had such a different impact on the diffusion mechanisms of legitimate and illegitimate product categories (see Table 14 on page 196)? A suggestion from institutional theory would be that firms would value perceived profitability of the product less if it were an illegitimate product, as the 'illegitimacy' of the product discounts part of the benefit of the profitability. A rival explanation, also from institutional theory would be that a legitimate product does not need such strong profitability signals to be adopted as it does not have the 'barrier' of illegitimacy to overcome. Future research could investigate the question more directly, although it is difficult to say exactly how.

The second outstanding issue relates to questions of competition and legitimacy of a product niche. Simply phrased, the question is whether it is better to be a small fish in a legitimate large pond or a large fish in an illegitimate small pond? Is it a good entry strategy to adopt a controversial innovation, and in that way skirt the most intense

competition but perhaps end up with a limited market? Or, is it perhaps better to enter the already legitimate product niche and take on the larger competitors head on, but compete for a larger market? These questions could be studied in a longitudinal study of the successes of new entrants that choose differently legitimate niches.

## 7.4 Concluding remarks

How do firms compete with each other? The initial example of the ailing Swedish *hålsobem* industry suggested that norms of appropriate firm behavior played a significant role in how firms chose to compete in that particular industry. Swedish *hålsobem* did not include meat and wine on their menus to adopt to changing consumer tastes because it was not commensurate with the norms of the industry. Firms that did change were ostracized and even excluded from the industry association. Looking at the more competitive mutual fund industry, firms are still seen to be influenced by norms of what constitutes appropriate firm competitive behavior - at least when they decide what new products to introduce into the market. When small firms in the Swedish mutual fund industry adopted *index* or *SRI* funds, the larger competitors did not follow suit. On the other hand, when small firms entered the niche of *Eastern Europe* funds all the large firms entered within a couple of years.

Investigating how products spread across the firms in the industry, the standard economic diffusion model where perceived profitability guides product adoption, predicted the adoption of products that were not controversial within the industry, such as *Mixed assets* funds. The adoption and spread of other products that broke with deeply held norms about the value of active asset management (such as *index* or *SRI* funds) was on the other hand better described by also taking into account how deeply the focal firm tended to care about these norms.

This empirical finding has a bearing on the way which firms are understood to compete with each other. The commonly espoused view of firms being quick imitators of all innovations that are not protected by legal or other means, needs to be moderated by an understanding of two additional questions: how does the innovation (competitive action) fit with existing industry norms; and what firms embody these industry

norms (c.f. McMillan et al., 1985; Rumelt, 1995; Oliver, 1997)? While the idea of 'fit' of an innovation within a community is very old within sociological diffusion research (see for example, Katz et al., 1963), it has not, for various reasons, commonly been incorporated in economic diffusion studies.

The dissertation thus makes an empirical contribution by a longitudinal investigation of competitive product niche entry as guided by the economic promise of the niche and moderated by whether or not it is an appropriate niche to enter for the focal firm. From a managerial point of view, such a nuance in strategic management theory may be valuable as small firms are seen to have the opportunity of entering a niche free of larger firms, despite the absence of barriers to imitation in terms of legal or technical obstacles. The actual use of such a strategy is illustrated in the case studies of the dissertation. Furthermore such behavior of firms leads some firms to exhibit what looks like asymmetric competitive alertness – firms that are agile competitors (and quick imitators) with respect to one product category may be sluggish (inert) competitors with respect to another. This finding thus extends earlier discussions about competitive inertia (c.f. Miller and Chen, 1994b) to also include the 'fit' of the competitive action with the appreciation of industry norms by the focal firm.

To conclude the dissertation is a piece of normative advice proffered by one of the asset managers on how to innovate successfully in the finance industry that sums up some of the main ideas:

*"If you are going to innovate, you may as well do it outrageously so that your competitors cannot follow you because of their internal politics"*

This advice to 'go wild' should probably be moderated by the need to stay out of the range considered 'outrageousness' by the customers. But the extent to which moderation should be observed is the topic of another dissertation...

### 7.5 Appendix I – Estimating the model with all adoptions as one category

To emulate a 'standard' economic diffusion study all first product adoptions were coded as an event and model 1 was re-estimated for this (larger) sample. As can be seen in Table 15 the results are strongly supportive of standard economic diffusion analysis findings. Young and large firms innovate when the market shrinks and they prefer to adopt products that have been proven successful. Note also that the **Number of analysts** variable has no significant effect in this model, apart from in the susceptibility vector. Firms imitate socially proximate firms and their successful products.



Table 15 - Model with all product adoptions as one category

	Model with all adoptions
Propensity ( $\alpha$ )	
Intercept	1.132*** (0.1412)
Prior adoption	0.1309*** (0.0112)
Length last spell	0.0484** (0.024)
Firm age	-0.048*** (0.0108)
Resource availability	-0.1858*** (0.055)
Firm size	0.1635*** (0.0486)
Number of analysts	0.1081 (0.11)
Average fund-size	0.1226*** (0.0182)
Susceptibility( $\beta$ )	
Intercept	-8.723*** (0.64)
Average fund-size	0.15*** (0.0183)
Number of analysts	0.2938** (0.1016)
Firm performance	0.2093** (0.0853)
Social proximity( $\delta$ )	
Same type	1.817** (0.903)
Model log likelihood (Max log L)	92.41
Log likelihood test (d.f.)	565.82 (13)

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$  All significance test are two-tailed. Standard errors in parenthesis. (N = 752). Note that for several of the product categories there is left-censoring of the sample so the coefficient estimates are probably not very reliable.

## 7.6 Appendix II – Estimation with ‘recent firm performance’ variable in both propensity and susceptibility vectors

This appendix tests support for the suggestion that economically disadvantaged firms would be more likely to undertake controversial adoptions. A **Recent firm performance** variable is included in both the propensity and the susceptibility vectors of model 1. If more economically disadvantaged firms were more likely to adopt illegitimate products, the expected sign of the coefficient for this variable would be negative for controversial product adoptions. As can be seen in Table 16 the inclusion of the **Recent firm performance** variable has no significant effect in the propensity vector where it would be expected to have a negative effect. The only statistically significant effect of the variable is in the susceptibility vector for controversial adoption where the sign of the coefficient is positive (the opposite of what would be expected). However, the measure of recent firm performance is entirely relative to earlier performance as it is measured as the change (in percentage) to the market share held by the firm last year.

Table 16 - Results from including recent performance in propensity vector

	Model with recent performance in $\alpha$ and $\beta$ vectors	
	Index/SRI	Mixed assets
Propensity ( $\alpha$ )		
Intercept	-0.54* (0.319)	0.0244 (0.507)
Prior adoption	0.5492*** (0.0491)	0.594*** (0.0889)
Length last spell	-13.45 (10.05)	-22.77** (10.07)
Firm age	-0.0442 (0.0309)	-0.2536*** (0.0728)
Resource availability	0.178*** (0.0413)	-0.542*** (0.1768)
Firm size	0.528*** (0.1367)	0.5737** (0.316)
Number of analysts	-3.811*** (1.464)	1.451*** (0.4893)
Average fund-size	0.2929** (0.1149)	0.3258** (0.1484)
Recent performance	0.442 (0.7837)	0.1064 (0.4407)
Susceptibility( $\beta$ )		
Intercept	-6.745*** (0.8739)	-7.448*** (0.4975)
Average fund-size	-0.0443 (0.097)	0.4412*** (0.0437)
Number of analysts	0.6445*** (0.2142)	0.0487 (0.139)
Firm performance	0.478*** (0.1367)	-0.061 (0.215)
Social proximity ( $\delta$ )		
Same type	0.261 (1.363)	2.334*** (0.656)
Destination log likelihood (Max log L)	-89.255	9.866
Log likelihood test (d.f.)	200.41*** (14)	417.94*** (14)
Model log likelihood		-79.388
Log likelihood test against base-line (d.f.)		618.34*** (28)
Log likelihood test against Model 1 (d.f.)		0.47 (2)

\*p < 0.1; \*\*p < 0.05; \*\*\* p < 0.01 All significance test are two-tailed. Standard errors in parenthesis.

## References

- Abbott, A. (1988) *The system of professions - an essay on the division of expert labor*, Chicago: The University of Chicago Press.
- Abell, P. (1995) The new institutionalism and rational choice theory. In: Scott, W.R. and Christensen, S., (Eds.) *The institutional construction of organizations: international and longitudinal studies*: pp. 3-15. Thousand Oaks, California: Sage Publications
- Abrahamson, E. and Fairchild, G. (1999) Management fashion: Lifecycles, triggers, and collective learning processes. *Administrative Science Quarterly*, 44: 708-740.
- Abrahamson, E. and Fombrun, C.J. (1994) Macrocultures: Determinants and consequences. *Academy of Management Review*, 19: 728-755.
- Abrahamson, E. and Rosenkopf, L. (1993) Institutional and competitive bandwagons: Using mathematical modeling as a tool to explore innovation diffusion. *Academy of Management Review*, 18: 487-517.
- AFV (Mar 22, 2000) Mobbade indexfonder. *Affärsvärlden* (Swedish business magazine)
- Allison, P.D. (1984) *Event history analysis*, London: Sage Publications.
- Arrow, K.J. (1962) Economic welfare and the allocation of resources of invention. In: Nelson, R.R., (Ed.) *The rate and direction of inventive activity - economic and social factors*: pp. 609-625. Princeton: National Bureau of Economic Research
- Baks, K.P., Metrick, A. and Wachter, J. (2001) Should investors avoid all actively managed mutual funds? A study in Bayesian Performance Evaluation. *The Journal of Finance*, LVI: 45-85.
- Barber, B., Lehavy, R., McNichols, M. and Trueman, B. (2001) Can investors profit from the prophets? Security analyst recommendations and stock returns. *The Journal of Finance*, LVI: 531-564.

- Barnett, W.P. (1997) The dynamics of competitive intensity. *Administrative Science Quarterly*, 42: 128-160.
- Barnett, W.P. and Freeman, J. (2001) Too much of a good thing? Product proliferation and organizational failure. *Organization Science*, 12: 539-559.
- Barney, J.B. (1986) Strategic factor markets: expectations, luck and business strategy. *Management Science*, 32: 1231-1241.
- Barney, J.B. (1991) Firm resources and sustained competitive advantage. *Journal of Management*, 99-120.
- Barney, J.B. and Zajac, E.J. (1994) Competitive organizational behavior: Toward an organizationally based theory of competitive advantage. *Strategic Management Journal*, 15: 5-9.
- Baron, J.N., Dobbin, F.R. and Jennings, D. (1986) War and Peace: The evolution of modern personnel administration in U.S. Industry. *American Journal of Sociology*, 92: 350-383.
- Baron, J.N. and Hannan, M.T. (1994) The impact of economics on contemporary sociology. *Journal of Economic Literature*, 32: 1111-1146.
- Barras, R. (1986) Towards a theory of innovation in services. *Research Policy*, 15: 161-173.
- Baum, J. and Oliver, C. (1996) Toward and Institutional Ecology of Organizational Founding. *Academy of Management Journal*, 39: 1378-1427.
- Baum, J.A.C. and Haveman, H.A. (1997) Love thy neighbor? Differentiation and agglomeration in the Manhattan hotel industry, 1898 - 1990. *Administrative Science Quarterly*, 42: 304-338.
- Baum, J.A.C. and Oliver, C. (1991) Institutional linkages and organizational mortality. *Administrative Science Quarterly*, 36: 187-218.
- Becker, M.H. (1970) Sociometric location and innovativeness: reformulation and extension of the diffusion model. *American Journal of Sociology*, 35: 267-282.
- Blossfeld, H.-P. and Rohwer, G. (1995) *Techniques of Event History Modeling*, Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Bresnahan, T.F. (1985) Post-entry competition in the plain paper copier market. *American Economic Review*, 75: 15-19.
- Brown, L.A. (1981) *Innovation Diffusion - A new perspective*, London and New York: Methuen & Co. Ltd.

- Burns, L.R. and Wholey, D.R. (1993) Adoption and abandonment of matrix management programs: effects of organizational characteristics and inter-organizational networks. *Academy of Management Journal*, 36: 106-138.
- Burt, R.S. (1982) *Toward a structural theory of action*, New York: Academic Press.
- Burt, R.S. (1987) Social Contagion and Innovation: Cohesion versus structural equivalence. *American Journal of Sociology*, 92: 1287-1335.
- Burton, P.S. (1994) Product portfolios and the introduction of new products: an example from the insecticide industry. *RAND Journal of Economics*, 25: 128-140.
- Campbell, D.T. and Stanley, J.C. (1963) Experimental and Quasi-experimental designs for research. In: Campbell, D.T. and Stanley, J.C., (Eds.) *Experimental and Quasi-experimental designs for research*: pp. 1-75. Chicago: RandMcNally
- Carhart, M.M. (1997) On persistence in mutual fund performance. *The Journal of Finance*, 52: 57-82.
- Carlson, B. (1998) Månadsbrev December 1998 (Investor Newsletter, December 1998). Stockholm: Carlson Investment Management.
- Carroll, G.R. (1985) Concentration and specialization: Dynamics of niche width in populations of organizations. *American Journal of Sociology*, 90: 1262-1283.
- Carroll, G.R. and Hannan, M.T. (1999) Observation plans. In: Carroll, G.R. and Hannan, M.T., (Eds.) *The demography of corporations and industries*: pp. 85-100. Princeton, NJ: Princeton University Press
- Caves, R. and Porter, M. (1977) From entry barriers to mobility barriers: Conjectural decisions and contrived deterrence to new competition. *Quarterly Journal of Economics*, 91: 241-262.
- Cerin, P. and Dobers, P. (2000) What does the 'Dow Jones Sustainability group index' tell us? Business Strategy and the environment conference proceedings, pp.66-73. University of Leeds: ERP Environment at the University of Leeds.
- Chaves, M. (1996) Ordaining women: the diffusion of an organizational innovation. *American Journal of Sociology*, 101: 840-873.
- Chevalier, J. and Ellison, G. (1999) Are some mutual fund managers better than others? Cross-sectional patterns in behavior and performance. *Journal of Finance*, 54: 875-899.

- Christensen, C.M. (1993) The rigid diskdrive industry: A history of commercial and technological turbulence. *Business History Review*, 67: 531
- Christensen, C.M. (1997) *The Innovator's Dilemma*, Boston: HBS Press.
- Cialdini, R.B. (1993) *Influence - the psychology of persuasion*, Revised Edition. New York: Quill.
- Cohen, W.M. and Levin, R.C. (1989) Empirical studies of innovation and market structure. In: Schmalensee, R. and Willig, R.D., (Eds.) *Handbook of industrial organization*: pp. 1060-1098. Amsterdam: North-Holland
- Cohen, W.M. and Levinthal, D.A. (1990) Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, 128-152.
- Cyert, R.M. and March, J.G. (1992) *A Behavioral Theory of the Firm*, Second edn. Cambridge Mass.: Blackwell Business.
- Czarniawska, B. and Joerges, B. (1996) Travels of ideas. In: Czarniawska, B. and Sevón, G., (Eds.) *Translating Organizational Change*: pp. 13-47. Berlin: Walter de Gruyter
- D'Aunno, T., Succi, M. and Alexander, J.A. (2000) The Role of Institutional and Market Forces in Divergent Organizational Change. *Administrative Science Quarterly*, 45: 679-703.
- D'Aunno, T., Sutton, R.I. and Price, R.H. (1991) isomorphism and external support in conflicting institutional environments: a study of drug abuse treatment units. *Academy of Management Journal*, 34: 636-661.
- Dacin, M.T., Ventresca, M.J. and Beal, B.D. (1999) The embeddedness of organizations: Dialogue and Directions. *Journal of Management*, 25: 317-356.
- Dacin, T. (1997) Isomorphism in context: the power and prescription of institutional norms. *Academy of Management Journal*, 40: 46-81.
- Dahlquist, M., Engström, S. and Söderlind, P. (2000) Performance and Characteristics of Swedish Mutual Funds. *Journal of Financial and Quantitative Analysis*, 35: 409-423.
- Damanpour, F. (1991) Organizational innovation: a meta-analysis of effects and determinants and moderators. *Academy of Management Journal*, 35: 555-590.
- Damato, K. (Apr 9, 2001) Index Funds: 25 years in pursuit of the average. *The Wall Street Journal* R1

- Davies, S. (1979) *Diffusion of process innovations*, Cambridge: Cambridge University Press.
- Davis, G.F. (1991) Agents without principles? The spread of the poison pill through the intercorporate network. *Administrative Science Quarterly*, 36: 583-590.
- Davis, G.F. and Greve, H.R. (1997) Corporate elite networks and governance changes in the 1980s. *American Journal of Sociology*, 103: 1-37.
- Dearden, J., Ickes, B.W. and Samuelson, L. (1990) To innovate or not to innovate: incentives and innovation in hierarchies. *American Economic Review*, 80: 1105-1124.
- Deephouse, D.L. (1996) Does isomorphism legitimate? *Academy of Management Journal*, 39: 1024-1039.
- Del Guercio, D. and Tkac, P.A. (2001) Star Power: the effect of Morningstar ratings on mutual fund flows. Working Paper 2001-15, Federal Reserve Bank of Atlanta.
- Dennis, B. (2000) Finanssektorns framtid. SOU 2000:11, Stockholm: Statens Offentliga Utredningar, Finansdepartementet (Swedish Governmental Public Investigation).
- DI (Jun 21, 1994) Bantarnas 80-talsparadis svalt ihjäl. *Dagens Industri* (Swedish business daily)
- DI (Aug 5, 1998) Fondbolagens fest snart slut. *Dagens Industri* (Swedish business daily)
- Dierickx, I. and Cool, K. (1989) Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35: 1504-1511.
- DiMaggio, P.J. and Powell, W.W. (1983) The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147-160.
- DN (May 25, 2001) Prestationsavgifter dröjer. *Dagens Nyheter* (Swedish national daily)
- Dobbin, F.R. and Baum, J. (2000) Economics meets sociology in strategic management. In: Baum, J. and Dobbin, F.R., (Eds.) *Economics meets sociology in strategic management*: pp. 1-26. Stamford Connecticut: JAI Press Inc.
- Easterlin, R.A. (1981) Why isn't the Whole World Developed? *The Journal of Economic History*, XLI: 1-19.



- Edelman, L.B. (1992) Legal ambiguity and symbolic structures: organizational mediation of civil rights law. *American Journal of Sociology*, 6: 1531-1576.
- Elsbach, K. (1994) Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts. *Administrative Science Quarterly*, 39: 57-88.
- Engström, S. (2001) Success factors in asset management. EFI, The Economic Research Institute, Stockholm School of Economics. Ph.D.
- Ericsson, C. (Oct 17, 1988) Nya allemansfonder med etiska förtecken. *Dagens Industri* (Swedish business daily)
- Euromoney (Jan 1, 1999) Ethics for pleasure and profit. *Euromoney* (367):12-12.
- Fernandez, R. and Rodrik, D. (1991) Resistance to reform: status quo bias in the presence of individual-specific uncertainty. *The American Economic Review*, 81: 1146-1155.
- Fligstein, N. (1996) Markets as politics: A political-cultural approach to market institutions. *American Sociological Review*, 61: 656-673.
- Fligstein, N. (2001) *The architecture of markets*, Princeton, New Jersey: Princeton University Press.
- Fligstein, N. and Brantley, P. (1992) Bank control, owner control or organizational dynamics: who controls the large modern corporation? *American Journal of Sociology*, 98: 280-307.
- Freidson, E. (1986) *Professional Powers- A study of the Institutionalization of formal knowledge*, Chicago and London: The University of Chicago Press.
- Friedland, R. and Alford, R.R. (1991) Bringing society back in: Symbols, practices, and institutional contradictions. In: Powell, W.W. and DiMaggio, P.J., (Eds.) *The new institutionalism in organizational analysis*: pp. 232-263. Chicago: University of Chicago Press
- FT (Feb 16, 2001) Fondavgifterna för låga. *Finanstidningen* (Swedish business daily)
- Gadrey, J., Gallouj, F. and Weinstein, O. (1995) New modes of innovation: How services benefit industry. *International Journal of Service Industry Management*, 6: 4-16.
- Galaskiewicz, J. (1985) Professional networks and the institutionalization of a single mind set. *American Sociological Review*, 50: 639-658.

- Galaskiewicz, J. and Burt, R.S. (1991) Interorganizational contagion in corporate philanthropy. *Administrative Science Quarterly*, 36: 88-105.
- Gallouj, F. and Weinstein, O. (1997) Innovation in services. *Research Policy*, 26: 537-556.
- Geroski, P.A. (2000) Models of technology diffusion. *Research Policy*, 29: 603-625.
- Geroski, P.A. (2001) Exploring the niche overlaps between organizational ecology and industrial economics. *Industrial and Corporate Change*, 10: 507-540.
- Gershuny, J. and Miles, I. (1983) *The new service economy*, London: Frances Pinter.
- Ghemawat, P. (1991) Market incumbency and technological inertia. *Marketing Science*, 10: 161-171.
- Gilbert, R.J. and Newberry, D.M. (1982) Preemptive patenting and the persistence of monopoly. *American Economic Review*, 72: 514-526.
- Granovetter, M. (1973) The strength of weak ties. *American Journal of Sociology*, 78: 1360-1380.
- Granovetter, M. (1985) Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, 91: 481-510.
- Granovetter, M. (2002) A Theoretical Agenda for Economic Sociology. In: Guillen, M.F., Collins, R., England, P. and Meyer, M., (Eds.) *New Directions in Economic Sociology (forthcoming)*: New York: Russell Sage Foundation
- Greenwood, R. and Hinings, C.R. (1996) Understanding radical organizational change: bringing together the old and the new institutionalism. *Academy of Management Review*, 21: 1022-1054.
- Greenwood, R., Suddaby, R. and Hinings, C.R. (2002) Theorizing change: The role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, 45: 58-81.
- Gresov, C., Haveman, H.A. and Olivia, T.A. (1993) Organizational design, inertia and the dynamics of competitive response. *Organization Science*, 4: 181-208.
- Greve, H.R. (1994) Patterns of competition: the diffusion of strategy adoption and abandonment (Unpublished Dissertation). Graduate School of Business, Stanford University. Ph. D.

- Greve, H.R. (1995) Jumping ship: the diffusion of strategy abandonment. *Administrative Science Quarterly*, 41: 29-60.
- Greve, H.R. (1998) Managerial cognition and the mimetic adoption of market positions: What you see is what you do. *Strategic Management Journal*, 19: 967-988.
- Greve, H.R. (2000) Learning From Innovations: Interorganizational Learning and Heterogeneous Social Structure. *Working Paper*,
- Greve, H.R., Strang, D. and Tuma, N.B. (1995) Specification, and estimation of heterogeneous diffusion models. *Sociological Methodology*, 25: 377-420.
- Greve, H.R., Strang, D. and Tuma, N.B. (2001) Estimation of diffusion histories from incomplete populations. *Sociological Methods and Research*, 29: 435-467.
- Greve, H.R. (1996) Patterns of competition: the diffusion of a market position in radio broadcasting. *Administrative Science Quarterly*, 41: 29-60.
- Greve, H.R. (1998) Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43: 58-86.
- Gruber, M.J. (1996) Another puzzle: the growth of actively managed mutual funds. *The Journal of Finance*, 51: 783-810.
- Grönroos, C. (1987) Developing the service offering - a source of competitive advantage. In: Surprent, C., (Ed.) *Add value to your service*: Chicago, Ill: American Marketing Association
- Hannan, M.T. and Carroll, G.R. (1992) *Dynamics of organizational populations - Density, legitimation and competition*, New York: Oxford University Press.
- Hannan, M.T. and Freeman, J. (1977) The population ecology of organizations. *American Journal of Sociology*, 82: 929-964.
- Hannan, M.T. and Freeman, J. (1984) Structural inertia and organizational change. *American Sociological Review*, 49: 149-164.
- Hannan, T.H. and McDowell, J.M. (1984) Market concentration and the diffusion of new technology in the banking industry. *The Review of Economics and Statistics*, 66: 686-691.
- Hauknes, J. (1996) Innovation in the service economy (Working Report). 7, Oslo: STEP group.

- Haunschild, P.R. (1993) Interorganizational imitation: The impact of interlocks on corporate acquisition activity. *Administrative Science Quarterly*, 38: 564-592.
- Haunschild, P.R. and Miner, A.S. (1997) Modes of interorganizational imitation: The effects of outcome salience and uncertainty. *Administrative Science Quarterly*, 42: 472-500.
- Haveman, H.A. (1993) Follow the leader: Mimetic isomorphism and entry into new markets. *Administrative Science Quarterly*, 38: 593-627.
- Haveman, H.A. and Rao, H. (1997) Structuring a theory of moral sentiments: institutional and organizational coevolution of the early thrift industry. *American Journal of Sociology*, 100: 104-152.
- Hedström, P. (1994) Contagious collectivities: on the spatial diffusion of Swedish trade unions 1890-1940. *American Journal of Sociology*, 99: 1157-1179.
- Hellekant, J. (Apr 16, 2000) Vin och Kött på hälsohem. *Svenska Dagbladet (Swedish national newspaper)*
- Henderson, A.D. (1999) Firm strategy and age dependence: a contingent view of the liabilities of newness, adolescence, and obsolescence. *Administrative Science Quarterly*, 44: 281-314.
- Henderson, R.M. (1993) Underinvestment and incompetence as responses to radical innovation: evidence from the photolithographic alignment equipment industry. *The RAND Journal of Economics*, 24: 248-270.
- Henderson, R.M. and Clark, K.B. (1990) Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly*, 35: 9-30.
- Herman, E.s. and Chomsky, N. (1994) *Manufacturing consent - the political economy of the mass media*, London: Vintage.
- Hirsch, P.M. (1986) From Ambushes to golden parachutes: corporate takeovers as an instance of cultural framing and institutional integration. *American Journal of Sociology*, 4: 800-837.
- Hodgkinson, G.P. and Johnson, G. (1994) Exploring the mental models of competitive strategies: the case for a processual approach. *Journal of Management Studies*, 31: 525-551.
- Hägglund, P. (2000) Sensemaking into stable quasi-companies. *Paper Presented at Organization and Managerial Cognition Division, AOM, Toronto, 2000*

- Ippolito, R.A. (1989) Efficiency with costly information: a study of mutual fund performance, 1965-1984. *The Quarterly Journal of Economics*, 104: 1-23.
- Jonsson, S. (2000) Institutional isolating mechanisms: An empirical investigation of the Swedish mutual fund industry. *Paper presented at Academy of Management Meeting, Toronto, 2000.*
- Katz, E., Levin, M.L. and Hamilton, H. (1963) Traditions of research in the diffusion of innovation. *American Sociological Review*, 28: 237-252.
- Katz, M.L. and Shapiro, C. (1987) R&D rivalry with licensing or imitation. *American Economic Review*, 77: 402-420.
- Katz, R. and Allen, T.J. (1982) Investigating the Not Invented Here (NIH) syndrome: A look at the performance, tenure, and communication patterns of 50 R&D project groups. *R & D Management*, 12: 7-19.
- Kelly, D. and Amburgey, T.L. (1991) Organizational inertia and momentum: a dynamic model of strategic change. *Academy of Management Journal*, 34: 591-612.
- Khorana, A. and Servaes, H. (1999) The determinants of mutual fund starts. *Review of Financial Studies*, 12: 1043-1074.
- Kimberly, J. (1981) Managerial Innovation. In: Nystrom, P. and Starbuck, W., (Eds.) *Handbook of organizational design*: Oxford: Oxford University Press
- Konsumentverket, K. (2000) Granskning av fondreklam (Investigation of mutual fund advertising, author's translation). 2000:18, Stockholm: Konsumentverket KO (Swedish consumer protection authority).
- Kraatz, M.S. and Zajac, E.J. (1996) Exploring the limits of the new institutionalism: the causes and consequences of illegitimate organizational change. *American Sociological Review*, 61: 812-836.
- Kuran, T. (1988) The Tenacious Past: Theories of Personal and Collective Conservatism. *Journal of Economic Behavior and Organization*, 10: 143-172.
- Lant, T.K. and Baum, J. (1995) Cognitive sources of socially constructed competitive groups: examples from the Manhattan hotel industry. In: Scott, R.W. and Christensen, S., (Eds.) *The Institutional construction of organizations - international and longitudinal studies*: pp. 15-39. Thousand Oaks, California: Sage Publications

- Leblebici, H., Salancik, G.R., Copay, A. and King, T. (1991) Institutional change and the transformation of interorganizational fields: an organizational history of the U.S. radio broadcasting industry. *Administrative Science Quarterly*, 36: 333-363.
- Levin, R.C., Klevorick, A.K., Nelson, R.R. and Winter, S.G. (1987) Appropriating the returns from industrial research and development. *Brookings Papers on Economic Activity*, 3: 783-831.
- Levin, S.G., Levin, S.L. and Meisel, J.B. (1992) Market structure, uncertainty, and intrafirm diffusion: The case of optical scanners in grocery stores. *The Review of Economics and Statistics*, 72: 345-350.
- Levinthal, D.A. and Myatt, J. (1994) Co-evolution of capabilities and industry: The evolution of mutual fund processing. *Strategic Management Journal*, 15: 45-62.
- Levitt, B. and March, J.G. (1988) Organizational learning. *Annual Review of Sociology*, 14: 319-340.
- Lieberman, M. and Montgomery, D. (1988) First mover advantage. *Strategic Management Journal*, 9: 41-58.
- Lippman, S.A. and Rumelt, R.P. (1982) Uncertain imitability: an analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13: 418-438.
- Long, J.S. (1997) *Regression models for categorical and limited dependent variables*, London: Sage.
- Lounsbury, M. (2001) The institutional production of strategic action: logic transformation and the rise of product diversification in the mutual fund industry, 1944 - 1991. *Academy of Management Meeting*, Washington, 2001:
- Lounsbury, M. (2002) Institutional transformation and status mobility: the professionalization of the field of finance. *Academy of Management Journal*, 45: 255-267.
- Lounsbury, M., Hirsch, P.M. and Klinkerman, S. (1998) Institutional upheaval and performance variation: A theoretical agenda and illustration from the deregulation of commercial banks. *Advances in Strategic Management*, 15: 129-146.
- Lounsbury, M. and Leblebici, H. (2002) New practices and logic transformation: sources of professional money management firm contracting in the U.S. mutual fund industry. *Paper presented at EGOS Colloquium, Barcelona, Spain July 2002*,

- MacMillan, I.C., Mccaffery, M.L. and Van Wijk, G. (1985) Competitors' responses to easily imitated new products - exploring commercial banking product introductions. *Strategic Management Journal*, 6: 75-86.
- Mahajanana, V., Muller, E. and Bass, F. (1990) New Product Diffusion Models in Marketing: A Review and Directions for Research. *Journal of Marketing*, 1-28.
- Makadok, R. (1998) Can first-mover and early-mover advantages be sustained in an industry with low barriers to entry/imitation ? *Strategic Management Journal*, 19: 683-696.
- Malkiel, B.G. (1995) Returns from investing in equity mutual funds 1971 to 1991. *The Journal of Finance*, L: 549-572.
- Mansfield, E. (1961) Technical change and the rate of imitation. *Econometrica*, 29: 741-766.
- Mansfield, E. (1963) The speed of response of firms to new techniques. *Quarterly Journal of Economics*, 77: 290-311.
- March, J.G. (1994) *A primer on decision making - How decisions happen*, New York: The Free Press.
- March, J.G. and Olsen, J.P. (1989) *Rediscovering institutions - the organizational basis of politics*, New York: The Free Press.
- McKendrick, D.G. and Haggard, S. (2000) *From Silicon Valley to Singapore Location and Competitive Advantage in the Hard Disk Drive Industry*, Stanford, CA: Stanford University Press.
- Menzel, H. (1960) Innovation, integration and marginality: a survey of physicians. *American Sociological Review*, 25: 704-713.
- Meyer, J.W. and Rowan, B. (1977) Institutionalized Organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83: 340-363.
- Mezias, S.J. (1990) An institutional model of organizational practice: financial reporting at the Fortune 200. *Administrative Science Quarterly*, 35: 431-457.
- Miller, D. (1994a) What happens after success: The perils of excellence. *Journal of Product Innovation Management*, 31: 325-358.
- Miller, D. and Chen, M.-J. (1994b) Sources and consequences of competitive inertia: a study of the US airline industry. *Administrative Science Quarterly*, 39: 1-23.

- Mizruchi, M. and Fein, L.C. (1999) The social construction of organizational knowledge: A study of the uses of coercive, mimetic and normative isomorphism. *Administrative Science Quarterly*, 44: 653-683.
- Mokyr, J. (1992) Technological inertia in economic history. *The Journal of Economic History*, 52: 325-337.
- Molyneux, P. and Shamroukh, N. (1999) Models of Innovation adoption and diffusion. In: Molyneux, P. and Shamroukh, N., (Eds.) *Financial Innovation*: pp. 137-187. Chichester: John Wiley & Sons
- Nelson, R.R. (1959) The simple economics of basic scientific research. *The Journal of Political Economy*, 67: 297-306.
- Nelson, R.R. (1991) Why do firms differ and how does it matter ? *Strategic Management Journal*, 12: 61-74.
- Niemeyer, J. (2000) Värdepappershandel i Sverige. In: Dennis, B., (Ed.) *Finanssektorns Framtid, bilagor till finansmarkandsutredningen volym B*: pp. 259-344. Stockholm: Finansdepartementet
- Normann, R. (1993) *Service Management - ledning och strategi i tjänsteproduktion*, Third edn. Malmö: Liber Ekonomi.
- North, D.C. (1990) *Institutions, institutional change and economic performance*, Cambridge: Cambridge University Press.
- Näslund, B. (1986) Financial innovations (Working Paper). 6309, EFI, Handelshögskolan i Stockholm. Per 388/6309.
- O'Neill, H.M., Pouder, R.W. and Buchholtz, A.K. (1998) Patterns in the diffusion of strategies across organizations: insights from the innovation diffusion literature. *Academy of Management Review*, 23: 98-114.
- Ogbonna, E. and Harris, L.C. (2002) Organizational culture: A ten year, two-phase study of change in the UK food retailing sector. *Journal of Management Studies*, 39: 673-706.
- Oliver, C. (1991) strategic responses to institutional processes. *Academy of Management Review*, 16: 145-179.
- Oliver, C. (1997) Sustainable competitive advantage: combining institutional and resource based views. *Strategic Management Journal*, 18: 697-713.
- Olson, M. (1982) *The Rise and Decline of Nations*, New Haven.
- Orru, M., Biggart, W.N. and Hamilton, G.G. (1991) Organizational isomorphism in East Asia. In: Powell, W.W. and DiMaggio, P.J., (Eds.) *The New Institu-*



*tionalism in Organizational Analysis*: pp. 361-389. Chicago: University of Chicago Press

- Oster, S. (1982a) Intraindustry structure and the ease of strategic change. *The Review of Economics and Statistics*, 64: 376-383.
- Oster, S. (1982b) The diffusion of innovations among steel firms: the basic oxygen furnace. *Bell Journal of Economics*, 13: 45-56.
- Oster, S. and Quigley, J.M. (1977) Regulatory barriers to the diffusion of innovation: some evidence from building codes. *The Bell Journal of Economics*, 8: 361-377.
- Palmer, D., Jennings, D. and Zhou, X. (1993) Late adoption of the multidivisional form by large U.S. corporations: institutional, political and economic accounts. *Administrative Science Quarterly*, 38: 100-131.
- Pennings, J.M. and Harianto, F. (1992) The diffusion of technological innovation in the commercial banking industry. *Strategic Management Journal*, 13: 29-46.
- Peteraf, M.A. (1993) The cornerstones of competitive advantage: A resource based view. *Strategic Management Journal*, 14: 179-191.
- Peteraf, M.A. and Shanley, M. (1997) Getting to know you: A theory of strategic group identity. *Strategic Management Journal*, 18: 165-186.
- Pettigrew, A.M. (1973) *The Politics of organizational decision-making*, London: Tavistock.
- Pfeffer, J. (1981) *Power in organizations*, Cambridge Massachusetts: Ballinger Publishing Company.
- Podolny, J.M. (1993) A status-based model of market competition. *American Journal of Sociology*, 98: 829-872.
- Porac, J.F. and Baden-Fuller, C. (1989) Competitive groups as cognitive communities: The case of Scottish knitwear manufacturers. *Journal of Management Studies*, 26: 397-416.
- Porac, J.F., Thomas, H., Wilson, F., Patson, D. and Kanfer, A. (1995) Rivalry and the industry model of Scottish knitwear producers. *Administrative Science Quarterly*, 40: 203-229.
- Porter, M. (1980) *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, New York: The Free Press.
- Porter, M. (1996) What is strategy. *Harvard Business Review*, November-December: 61-78.

- Pozen, R.C. (1998) *The Mutual fund business*, Cambridge, MA: MIT Press.
- Rao, H. (1994) The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the American automobile industry: 1885-1912. *Strategic Management Journal*, 15: 29-44.
- Rao, H., Davis, G.F. and Ward, A. (2000) Embeddedness, Social identity and Mobility: Why firms leave the NASDAQ and join the New York stock exchange. *Administrative Science Quarterly*, 45: 268-292.
- Rao, H. and Drazin, R. (2002) Overcoming Resource Constraints on Product Innovation by Recruiting Talent from Rivals: A Study of the Mutual Fund Industry - 1986-1994. *Academy of Management Journal*, 45: 491-508.
- Rao, H., Greve, H.R. and Davis, G.F. (2001) Fool's gold: social proof in the initiation and abandonment of coverage by wall street analysts. *Administrative Science Quarterly*, 46: 502-526.
- Reed, R. and DeFillippi, R.J. (1990) Causal ambiguity, barriers to imitation and sustainable competitive advantage. *Academy of Management Review*, 15: 88-102.
- Reger, R.K. and Huff, A.S. (1993) Strategic groups: A cognitive perspective. *Strategic Management Journal*, 14: 103-124.
- Reinganum, J.F. (1983) Uncertain innovation and the persistence of monopoly. *American Economic Review*, 56: 301-310.
- Reinganum, J.F. (1989) The timing of innovation: Research, development and diffusion. In: Schmalensee, R. and Willig, R.D., (Eds.) *Handbook of Industrial Economics*: pp. 849-908. Amsterdam: North-Holland
- Rindova, V.P. and Fombrun, C.J. (1999) Constructing competitive advantage: The role of firm-constituent interactions. *Strategic Management Journal*, 20: 691-710.
- Rivkin, J.W. (2000) Imitation of complex strategies. *Management Science*, 46: 824-844.
- Rivkin, J.W. (2001) Reproducing knowledge: replication without imitation at moderate complexity. *Organizational Science*, 12: 274-293.
- Rogers, E. (1995) *The diffusion of innovations*, Fourth edn. New York: The Free Press.
- Romeo, A.A. (1975) Interindustry and interfirm differences in the rate of diffusion of an innovation. *The Review of Economics and Statistics*, 57: 311-319.

- Rose, N.L. and Joskow, P.L. (1990) The diffusion of new technologies: evidence from the electric utility industry. *The RAND Journal of Economics*, 21: 354-373.
- Rowan, B. (1982) Organizational structure and the institutional environment: the case of public schools. *Administrative Science Quarterly*, 27: 259-279.
- Ruef, M. and Scott, R.W. (1998) A multidimensional model of organizational legitimacy: hospital survival in changing institutional environments. *Administrative Science Quarterly*, 43: 877-904.
- Rumelt, R.P. (1995) Inertia and transformation. In: Montgomery, C.A., (Ed.) *Resource-Based and Evolutionary Theories of the Firm: Towards a Synthesis*: pp. 101-133. Dordrecht: Kluwer Academic
- Schmalensee, R. (1982) Product differentiation advantages of pioneering brands. *The American Economic Review*, 72: 349-365.
- Schoemaker, P.J.H. (1990) Strategy, complexity and economic rent. *Management Science*, 36: 1178-1192.
- Schumpeter, J.A. (1996) *Capitalism, Socialism and Democracy*, Reprinted Paperback (Original from 1942) edn. London: Routledge.
- Scott, R.W. (1995) *Institutions and organizations*, London: Sage.
- Scott, W.R. and Meyer, J.W. (1983) The organization of societal sectors. In: Meyer, J.W. and Scott, W.R., (Eds.) *Organizational Environments: Ritual and Rationality*: pp. 1-16. Beverly Hills: Sage
- Shaked, A. and Sutton, J. (1987) Product differentiation and industrial structure. *The Journal of Industrial Economics*, XXXVI: 131-146.
- Shaked, A. and Sutton, J. (1990) Multiproduct firms and market structure. *The RAND Journal of Economics*, 21: 45-62.
- Sharpe, W. (1998) Morningstar's Risk-Adjusted Ratings. *Financial Analysts Journal*, 54: 21-33.
- Shleifer, A. (1999) Are Financial Markets Efficient? In: Shleifer, A., (Ed.) *Inefficient Markets - An introduction to behavioral finance*: pp. 1-27. Oxford: Oxford University Press
- Siggelkow, N. (2002) Evolution of Fit: The voyage of Vanguard. *Administrative Science Quarterly*, 47: 125-159.
- Silber, W.L. (1983) The process of financial innovation. *AEA Papers and Proceedings*, May: 89-95.

- Singh, J.V. and Lumsden, C.J. (1990) Theory and Research in Organizational Ecology. *Annual Review of Sociology*, 16: 161-195.
- Sirri, E.R. and Tufano, P. (1993) Competition and change in the mutual fund industry. In: Hayes, S.L., (Ed.) *Financial services: perspectives and challenges*: Boston: Harvard Business School Press
- Sorensen, J.B. and Stuart, T.E. (2000) Aging, Obsolescence, and Organizational Innovation. *Administrative Science Quarterly*, 45: 81-112.
- Soule, S.A. (1997a) The student divestment movement in the United States and tactical diffusion: the shantytown protest. *Social Forces*, 75: 855-875.
- Soule, S.A. and Zylan, Y. (1997b) Runaway train? The diffusion of state-level reform in ADC/AFDC eligibility requirements, 1950-1967. *American Journal of Sociology*, 103: 733-762.
- Stigler, G.J. (1968) *The Organization of Industry*, Chicago: The University of Chicago Press.
- Stouffer, S.A. (1991) Some observations on study design. In: Miller, D.C., (Ed.) *Handbook of research design and social measurement*: pp. 44-47. Newbury Park: SAGE Publications
- Strang, D. (1990) From dependency to sovereignty: an event history analysis of decolonization. *American Sociological Review*, 55: 846-860.
- Strang, D. (1991) Adding social structure to diffusion models. *Sociological Methods and Research*, 19: 324-353.
- Strang, D. (1997) Cheap Talk: Managerial Discourse on Quality Circles as an Organizational Innovation. *Paper presented at the 1997 meeting of the American Sociological Association, Toronto.*
- Strang, D. and Macy, M.W. (2001) In Search of excellence: fads, success stories, and adaptive emulation. *American Journal of Sociology*, 107: 147-182.
- Strang, D. and Meyer, J.W. (1994) Institutional Conditions for Diffusion. In: Scott, W.R., Meyer, J.W. and Boli, J., (Eds.) *Institutional environments and organizations: structural complexity and individualism*: pp. 100-112. Thousand Oaks, California: Sage Publications
- Strang, D. and Soule, S.A. (1998) Diffusion in organizations and social movements: From hybrid corn to poison pills. *Annual Review of Sociology*, 24: 265-290.
- Strang, D. and Tuma, N.B. (1993) Spatial and temporal heterogeneity in diffusion. *American Journal of Sociology*, 99: 614-639.

- Suchman, M.C. (1995) Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review*, 20: 571-610.
- Sundbo, J. (1992) The tied entrepreneur. *Creativity and Innovation Management*, 1: 109-120.
- Sutton, J.R. and Dobbin, F.R. (1996) The two faces of governance: responses to legal uncertainty in U.S. firms 1955 to 1985. *American Sociological Review*, 61: 794-811.
- Svensson, K. (Feb 21, 2001) Gör så här, SEB. *Dagens Industri (Swedish business daily)*
- Swedberg, R. (1994) Markets as social structures. In: Smelser, N.J. and Swedberg, R., (Eds.) *The Handbook of Economic Sociology*: pp. 255-283. New York: Princeton University Press
- Szulanski, G. (1996) Exploring internal stickiness: impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17: 27-43.
- Targett, S. (Jul 18, 2001) Into battle for the retail investor: being fired was a catalyst for John Bogle to blaze a trail in the Index fund world. *Financial Times* July
- Teece, D.J. (1980) The diffusion of an administrative innovation. *Management Science*, 26: 464-470.
- Teece, D.J. (1987a) Capturing value from technological innovations: Integration, strategic partnering and licensing decisions. In: Buile, B. and Brools, H., (Eds.) *Technology and Global Industry*: pp. 65-95. Washington DC: National Academic Press
- Teece, D.J. (1987b) Profiting from technological innovation. In: Teece, D.J., (Ed.) *The Competitive Challenge - Strategies for Industrial Innovation and Renewal*: pp. 185-221. Cambridge, Mass.: Ballinger
- Thornton, P.H. and Ocasio, W. (1999) Institutional logics and the historical contingency of power in organizations: executive succession in the higher education publishing industry, 1958-1990. *American Journal of Sociology*, 105: 801-843.
- Tolbert, P. and Zucker, L.G. (1983) Institutional sources of change in the formal structure of organizations: the diffusion of civil service reform. *Administrative Science Quarterly*, 28: 22-39.
- Tripsas, M. and Gavetti, G. (2000) Capabilities, cognition and inertia: evidence from digital imaging. *Strategic Management Journal*, 21: 1147-1161.
- Tufano, P. (1989) Financial innovation and first-mover advantages. *Journal of Financial Economics*, 25: 213-240.

- Tuma, N.B. (1993) Using RATE. In: Tuma, N.B., (Ed.) *Invoking RATE*: Working manuscript
- Tuma, N.B. and Hannan, M.T. (1984) *Social Dynamics - Models and methods*, Orlando, Florida: Academic Press, Inc.
- Tushman, M. and Anderson, P. (1986) Technological discontinuities and organizational environments. *Administrative Science Quarterly*, 31: 439-465.
- Wallander, J. (1998) *Forskaren som bankdirektör - att utveckla och förändra*, Stockholm: SNS Förlag.
- Weber, R.P. (1990) *Basic content analysis*, Second edn. London: Sage Publications.
- Wernerfelt, B. (1984) A resource based view of the firm. *Strategic Management Journal*, 5: 171-180.
- Westlander, I. (Nov 16, 2000) Etisk nämnd för fondmarknadsföring. *Pressmeddelande Fondbolagens Förening*
- Westphal, J.D., Gulati, R. and Shortell, S.M. (1997) Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly*, 42: 366-394.
- White, H.C. (1981) Where do markets come from? *American Journal of Sociology*, 87: 517-547.
- Wine, E. (May 14, 2001) Socially responsible investment to gain a clearer definition - New indices attempt to remove ambiguity surrounding controversial category. *Financial Times* May Financial Times (London).
- Winter, S.G. (1987) Knowledge and competence as strategic assets. In: Teece, D.J., (Ed.) *The competitive challenge: strategies for industrial innovation and renewal*: Cambridge: Ballinger
- Zander, U. (1991) Exploiting a technological edge - voluntary and involuntary dissemination of technology. Institute of International Business, Stockholm School of Economics. Ph.D.
- Zander, U. and Kogut, B. (1995) Knowledge and speed of imitation: an empirical test. *Organization Science*, 6: 76-92.
- Zbaracki, M.J. (1998) The rhetoric and reality of total quality management. *Administrative Science Quarterly*, 43: 602-636.
- Zetterberg, H.L. (1991) On the decisions in verificational studies. In: Miller, D.C., (Ed.) *Handbook of Research Design and Social Measurement*: pp. 47-51. Newbury Park: SAGE Publications

Zuckerman, E.W. (1999) The categorical imperative: securities analysts and the illegitimacy discount. *American Journal of Sociology*, 104: 1398-1438.





## Published doctoral dissertations from IIB

- 1    **Leksell, Laurent:** Headquarters-Subsidiary Relationships in Multinational Corporations. (Out of print)  
Stockholm: IIB/EFI, 1981. ISBN 91-7258-133-6.
- 2    **Spångberg, Kjell:** Strategi i diversifierade företag - huvudkontorets roll.  
(Out of print)  
Stockholm: IIB/EFI, 1982. ISBN 91-7258-137-9.
- 3    **Lindgren, Ulf:** Foreign Acquisitions - Management of the Integration Process. (Out of print)  
Stockholm: IIB/EFI, 1982. ISBN 91-7258-145-X.
- 4    **Forss, Kim:** Planning and Evaluation in Aid Organizations.  
Stockholm: IIB/EFI, 1985. ISBN 91-7258-196-4. SEK 800.-.
- 5    **Sölvell, Örjan:** Entry barriers and foreign penetration - Emerging patterns of international competition in two electrical engineering industries.  
Stockholm: IIB, 1987. ISBN 91-7810-999-X. SEK 800.-.
- 6    **Roos, Johan:** Cooperative Venture Formation Processes: Characteristics and Impact on Performance. (Out of print)  
Stockholm: IIB, 1989. ISBN 91-971005-3-6.
- 7    **Ågren, Lars:** Swedish Direct Investment in the U.S.  
Stockholm: IIB, 1990. ISBN 91-971005-4-4. SEK 800.-.
- 8    **Åhlander, Karl:** Aspects of Modern Treasury Management - Organization and external financial activities in Swedish MNCs.  
Stockholm: IIB, 1990. ISBN 91-971005-95. SEK 800.-.
- 9    **Nordström, Kjell A:** The Internationalization Process of the Firm - Searching for New Patterns and Explanations.  
Stockholm: IIB, 1991. ISBN 91-971005-79. SEK 800.-.
- 10   **Berglöf, Erik:** Corporate Control and Capital Structure - Essays on Property Rights and Financial Contracts.  
Stockholm: IIB, 1991. ISBN 91-971005-6-0. SEK 800.-.
- 11   **Zander, Udo:** Exploiting A Technological Edge - Voluntary and Involuntary Dissemination of Technology.  
Stockholm: IIB, 1991. ISBN 91-97005-52. SEK 800.-.
- 12   **Lindqvist, Maria:** Infant Multinationals - The Internationalization of Young, Technology-Based Swedish Firms.  
Stockholm: IIB, 1991. ISBN 91-971005-87. SEK 800.-.

- 13 **Hagström, Peter:** The 'Wired' MNC. The Role of Information Systems for Structural Change in Complex Organizations. Stockholm: IIB, 1991. ISBN 91-971730-0-2. SEK 800.-.
- 14 **Zander, Ivo:** The Tortoise Evolution of the Multinational Corporation - Foreign Technological Activity in Swedish Multinational Firms 1890 - 1990. Stockholm: IIB, 1994. ISBN 91-971730-29. SEK 800.-.
- 15 **Ridderstråle, Jonas:** Global Innovation - Managing International Innovation Projects at ABB and Electrolux. Stockholm: IIB, 1996. ISBN 91-971730-45. SEK 800.-.
- 16 **Zander, Lena:** The Licence to Lead - An 18 Country Study of the Relationship Between Employees' Preferences Regarding Interpersonal Leadership and National Culture. Stockholm: IIB, 1997. ISBN 91-971730-88. SEK 800.-.
- 17 **Denrell, Jerker:** Essays on the Economic Effects of Vanity and Career Concerns. Stockholm: IIB, 1998. ISBN 91-971730-37. SEK 500.-.
- 18 **Arvidsson, Niklas:** The Ignorant MNE - The Role of Perception Gaps in Knowledge Management. Stockholm: IIB, 1999. ISBN 91-971730-53. SEK 500.-.
- 19 **Regnér, Patrick:** Strategy Creation and Change in Complexity - Adaptive and Creative Learning Dynamics in the Firm. Stockholm: IIB, 1999. ISBN 91-971730-7X. SEK 500.-.
- 20 **Jonsson, Stefan:** Making and Breaking Norms - Competitive Imitation Patterns in the Swedish Mutual Fund Industry. Stockholm, IIB, 2002. ISBN 91-971730-96. SEK 500.-.