

# **SUSTAINABILITY IN FINANCE**

## **A RETRODUCTIVE EXPLORATION**

**DUURZAAMHEID IN DE FINANCIËLE SECTOR**  
**EEN RETRODUCTIEF EXPLORATIEF ONDERZOEK**

### **PROEFSCHRIFT**

**ter verkrijging van de graad van doctor aan de  
Erasmus Universiteit Rotterdam  
op gezag van de  
Rector Magnificus**

**Prof. dr. S.W.J. Lamberts**

**en volgens besluit van het College voor Promoties  
de openbare verdediging zal plaatsvinden op**

**donderdag 30 September 2004 om 16.00 uur**

**door**

**Marcel Hanko Antonius Jeucken  
geboren te Groningen**

## **Contents**

<b>Preface</b>	<b>5</b>
<b>List of figures</b>	<b>12</b>
<b>List of tables</b>	<b>13</b>
<b>List of boxes</b>	<b>14</b>
<b>Chapter 1 Introduction</b>	<b>15</b>
1.1    Research subject	15
1.2    Synopsis of literature on the research subject	17
1.3    Research objective and outline of the book	22
<b>Chapter 2 Research design</b>	<b>29</b>
2.1    Research objective and framework	29
2.2    Research questions	32
2.3    Methods and sources	34
2.3.1    Introduction	34
2.3.2    Desk research and preliminary research	36
2.3.3    Cross-sectional survey	36
2.3.4    Case study research	40
<b>PART I</b>	<b>43</b>
<b>Chapter 3 Banking and finance</b>	<b>45</b>
3.1    Introduction	45
3.2    General trends in finance and banking	46
3.3    Types of financial institutions	50
3.4    Banks and their function in an economy	55
3.5    Reasons for the existence of banks	58
3.6    A first building block for the analytical framework	61
<b>Chapter 4 Environmental issues and sustainability</b>	<b>67</b>
4.1    Introduction	67
4.2    Environmental issues and economics	68
4.3    Environmental consciousness and sustainable development	74
4.3.1    Environmental problems	74
4.3.2    Environmental consciousness	76
4.3.3    Sustainable development	78
4.4    Responses by governments	80
4.4.1    Introduction	80
4.4.2    Local and national environmental policy	81
4.4.3    Regional environmental policy	84
4.4.4    International environmental policy	86
4.5    Responses by businesses	87

4.5.1	Introduction	87
4.5.2	Historical developments	87
4.5.3	Environmental management systems (EMSSs)	88
4.5.4	Certification of EMSSs	92
4.5.5	Environmental reporting	94
4.6	A second building block for the analytical framework	97
<b>Chapter 5 Banking and sustainability: an analytical framework</b>		<b>99</b>
5.1	Introduction	99
5.2	Intermediation and sustainability	101
5.3	A conceptual framework: a preliminary discussion	105
5.4	Innovation approaches	107
5.4.1	Introduction	107
5.4.2	Theoretical notions on innovation	108
5.4.3	Innovation management	110
5.4.4	Innovation within services industries	112
5.5	Management approaches	117
5.5.1	Introduction	117
5.5.2	Management approaches: a general discussion	118
5.5.3	Corporate governance and stakeholder models	120
5.5.4	Environmental management models	129
5.6	Analytical framework	134
<b>PART II</b>		<b>143</b>
<b>Chapter 6 Sustainability and financing risks</b>		<b>145</b>
6.1	Introduction	145
6.2	Environmental risks for clients	147
6.2.1	Introduction	147
6.2.2	Economic aspects	148
6.2.3	Legal aspects	151
6.2.4	Soil pollution	155
6.2.5	Financial aspects of government policy	157
6.3	Indirect environmental risks for banks	158
6.3.1	Introduction	158
6.3.2	The borrowing client's continuity	159
6.3.3	The borrowing client's collateral	165
6.3.4	Conclusions	166
6.4	Direct environmental risks for banks	167
6.5	Risks to banks' reputations	171
6.6	Instruments for analysing environmental risk	177
6.7	Survey results and conclusions	181
<b>Chapter 7 Sustainability and product development</b>		<b>185</b>
7.1	Introduction	185
7.2	Sustainable investment funds	186
7.2.1	Introduction	186
7.2.2	Fundamental principles of SRI funds	188

7.2.3	Returns and activism ,	191
7.2.4	Developments in developed countries	193
7.2.5	Information requirements and transparency	195
7.3	Fiscal green funds	196
7.3.1	Introduction	196
7.3.2	Principles of a fiscal green fund	197
7.3.3	Volume and performance of fiscal green funds	200
7.3.4	The future of fiscal green funds	201
7.4	More sustainable financial products: liabilities side activities	203
7.4.1	Introduction	203
7.4.2	More sustainable payment products	203
7.4.3	More sustainable saving <u>products</u>	204
7.4.4	More sustainable investment funds	205
7.4.5	More sustainable insurance products	206
7.5	More sustainable financial products: asset side activities	209
7.5.1	Introduction	209
7.5.2	More sustainable loans	214
7.5.3	More sustainable leasing	215
7.5.4	More sustainable innovation	216
7.5.5	More sustainable securitisation	217
7.5.6	Micro-credit or micro-financing	220
7.5.7	Debt-for-nature swaps	222
7.6	Sustainability and advice from banks	224
7.7	Climate change products	225
7.7.1	Introduction	225
7.7.2	Formation of a fund	228
7.7.3	Loans	229
7.7.4	Investments	230
7.7.5	Commodities	230
7.7.6	Insurance	231
7.8	Survey results and conclusions	232
<b>Chapter 8 Internal sustainability care</b>		<b>239</b>
8.1	Introduction	239
8.2	Energy	241
8.3	Waste	244
8.4	Sustainable building	246
8.5	Supply and distribution chain management	248
8.6	Survey results and conclusions	250
<b>Chapter 9 Communication and organization on sustainability</b>		<b>255</b>
9.1	Introduction	255
9.2	The organization of sustainability within banks	257
9.3	The role of internal communication	262
9.4	The role of external communication	265
9.4.1	Introduction	265
9.4.2	Codes of conduct	265
9.4.3	Sustainability reporting	269

9.4.4	Other external communication activities	272
9.4.5	External accountability and the risks of external communication	274
9.5	Survey results and conclusions	277
<b>PART III</b>		<b>287</b>
<b>Chapter 10 Retroduction</b>		<b>289</b>
10.1	Introduction	289
10.2	Integral perspective on sustainable banking among mainstream banks	289
10.3	Results from the retrodution process of Part II	296
10.3.1	Introduction	296
10.3.2	Financing and risks	296
10.3.3	Product development	298
10.3.4	Internal sustainability care	301
10.3.5	Communication and organization	304
10.3.6	Conclusions	306
10.4	Results from the interviews	310
10.4.1	Introduction	310
10.4.2	Overall results at the corporate level	310
10.4.3	Results per layer of the analytical framework	314
10.4.4	A first understanding of relationships within the analytical framework	330
10.4.5	Conclusions	337
10.5	Conclusions', overall results from the retrodution process	341
<b>Chapter 11 Conclusions</b>		<b>351</b>
11.1	Introduction	351
11.2	The research questions revisited	353
11.3	A reflection on the retrodution process	362
11.4	Recommendations for further research	365
<b>APPENDICES</b>		<b>369</b>
<b>Appendix I Geographic scope of the book</b>		<b>371</b>
<b>Appendix II Panel group, informants and experts</b>		<b>373</b>
<b>Appendix III IFC classification for Environmental Assessments</b>		<b>377</b>
<b>Appendix IV Example of an environmental risk 'checklist'</b>		<b>379</b>
<b>Appendix V Climate change and policy</b>		<b>381</b>
<b>Appendix VI Overview of selected banks in the survey</b>		<b>385</b>
<b>Appendix VII An integral score for sustainable banking</b>		<b>389</b>
<b>Appendix VIII Overview of interviewed banks</b>		<b>393</b>

VIII.1	Overview of interviewees	393
VIII.2	General background of selected banks	394
VIII.3	Sustainability activities of selected banks	396
<b>Appendix IX Semi-structured questionnaire</b>		<b>403</b>
<b>References</b>		<b>405</b>
		<i>to</i>
<b>Nederlandse samenvatting (Dutch summary)</b>		<b>427</b>
<b>Resume</b>		<b>431</b>