Index

Abraham, K.S. 133
absorbing risk 133
actuarial estimation 109–10
ad hoc
  assistance 196
  compensation tool 45
  direct payment 40, 169, 207
  institutions 30
  relief 71, 97
adaptation 253
  and climate change 103, 164
adverse selection 5, 13, 47, 54, 66–8, 75, 81–2, 97, 99, 111, 127, 140, 162, 246
AES v Steadfast 116–19
agricultural insurance
  government-subsidized 50
  pilot projects 49
  policies 49, 50
  Regulation on Agriculture Insurance 50, 94
aircraft insurance 110
all-hazard insurance policy 245
Alternative Risk Transfers (ARTs) 217, 221, 236
ambiguity of risk 112–13
  see also uncertainty
American International Group (AIG) 1, 104
  “appetite” of insurers 84
Arrow, Kenneth 35
asbestos claims 108–9
assessment insurance 110
asset-backed securitization 237
Association of British Insurers (ABI) 148, 149
authoritarian regime 7, 33
availability crisis 52
Baker, Tom 133, 134
Barry, D. 133
Beck, Ulrich 129
behavioral anomalies 6, 84–9, 243–4
behavior-control functions 106
Beijing Normal University 90, 189, 235
Ben-Shahar, Omri 134
Biggert-Waters Flood Insurance Reform Act of 2012 69, 152
Bruggeman, Véronique 95
business interruption 104
California Earthquake Authority 55, 142
  and reinsurance 199, 206–8, 215
capacity gap 82, 228, 242, 252
capital markets 11, 53, 54, 59, 64–5, 212, 217–8, 221, 226–40
Caribbean Catastrophe Risk Insurance Facility 60
catastrophe (cat) bonds 3, 113, 182, 212, 217–40
  see also insurance-linked securities, insurance securitization
catastrophe derivatives 182, 221–2
catastrophe disasters 5, 8, 12–6, 72, 74, 92, 102, 155, 171–3, 255–6
  see also natural catastrophes
catastrophe fund 142, 210–12, 254
catastrophe insurance 6, 8–11, 13–4, 44, 73, 80, 89–99, 103, 105, 108, 112–14, 121–8, 129–175, 208–9, 212–5, 216
  affordability 63, 66, 69–70, 125, 127–8 174, 206, 250, 256
demand 84–9, 92–3
  feasibility 89
Climate change and catastrophe management in a changing China

insurability 6, 63–4, 80–82, 84, 89, 103, 108–14
market-enhancing framework 62
markets 6, 17, 46–72, 77–9, 91
rate regulation 51, 81, 83, 126
regulatory techniques 138–44
supply 80–84, 90–91
underwriting 6, 13, 49, 53, 59, 80, 83, 84, 89, 96, 112–13, 155, 176, 185, 188, 191, 213, 241–2, 249, 252
catastrophe models 226
causal relationship 109–11
causation uncertainty 114, 116
central government 19, 22, 27–44, 50, 92, 120, 125, 173
centralized planned economy 6, 17–21
see also a centrally planned state
China Banking Regulatory Commission 172
China Insurance Act 116–17
China Insurance Regulatory Commission (CIRC) 23, 49, 208
China Maritime Code 116
China Re 7, 91, 209, 211, 213, 217, 236
China’s disaster policy 17–21
China’s disaster management organization structure 23
China’s Risk-Oriented Solvency System 208
Chinese miracle 60
Chinese People’s Liberation Army (PLA) 29–31
claim(s) management 6, 122–3, 138, 143, 149, 154, 157, 160, 163, 165, 168, 172, 174, 190, 256
claims processing 189
Clean Air Act 118
climate change
fund 121
and insurance 103–8
liability claims related to 104
litigation 10, 103, 110, 118
mitigation 106–8
rise in sea levels 111
risks 4–6, 9–11, 101–14, 119, 121–8, 241, 254
tort lawsuits 108
victims 115–6, 122
see also greenhouse gases (GHGs), global warming
Coase, Ronald 62
Code Effectiveness Grading Schedule 142
collaborative rural house insurance system 56–7
collective action problem 167
Cologne Reinsurance Company 176
command-and-control structure 30, 255
Commercial General Liability (CGL) policy 118
common prosperity 41
Community Rating System (CRS) 153
compensating victims 7, 27–9, 69, 93, 173, 248
competitive markets 5, 13, 75, 99
compulsory insurance 95, 98, 127, 171, 246
see also mandatory insurance
centration of losses 82, 123
consumer anomalies 9, 86
consumer protection 60, 83, 134
contingent capital 182, 221–2
copayments 140–41
coverage amount limit 140–41
deductibles 140–41, 147–8, 153, 156, 162, 171
exclusions 140–41, 148, 162
corrective justice 95
correlated risks 81–2, 248
corruption problems 37–9
cost-effective loss-reduction measures 88, 96
counterpart aid (duikou zhiyuan) 25–6, 32–6, 41–4, 46, 71–2
regressive effects of 36, 41–3
court enforcement 187
crop insurance 195–6
de facto control over the insureds 144
obligation 149, 165
regulators 132
reinsurer 159
Index

declining to renew a policy 144

deep credit capacity 196, 210, 215, 252, 257
deliberative thinking 85–9

see also Kahneman, Daniel
deposit insurance system 55
Digital Map of China Catastrophe Events (Zhongguo Juxing Dianzi Zainan Ditu), 90
direct payment to victims 26, 28
disability insurance 124
disaster aid 20, 38, 72, 155, 255
Disaster Defense and Reduction Policies 18
disaster mitigation 67, 252
disaster monitoring systems 25, 67
disaster prevention 17, 24–5, 67
disaster recovery 35
disaster relief 2, 5, 9–10, 13, 16–46, 48, 50, 64, 71, 88, 93–4, 130, 154, 213, 241, 255
disaster relief funds 28, 44
disaster response 22, 35
disaster risk management 17, 18, 21–2, 24–5, 213
distributive justice 95, 97
Doherty, Neil 185
Doyle, A. 133
dual-track approach 56
duty to defend 110, 118, 143
duty to indemnify 110
duty of utmost good faith 11, 184, 186–8, 194, 198, 201, 204–6, 214

earning returns on investments 87
economic efficiency 34
eight corners rule 117
emerging risk 109
emergency-driven management system 13
emergency relief 13, 38, 72–3, 213, 256
short-run 38
emergency response 25, 30, 35, 45
Emergency Response Law 22, 24
Employment Practices Liability Insurance (EPLI) 134
entry controls 60
entry into the market 188
environment liabilities 111

environmental liability insurance 119–21
Epstein, Richard A. 47, 75
Ericson, R.V. 133
EU Solvency II Directive 208
European Flood Risk Management Directive 64
ex ante 39, 119, 243
insurance 43, 69, 207
mitigation actions 45
property risk reduction 136
regulation by insurance 141, 143
strategy 48

ex post 111
bailout 207, 244
financing 48
government aid 43, 207
indemnification 107
moral hazard 123, 143
regulation 143
relief 43
settling up 185
Whole-Nation System 69
excess-of-loss contracts 66
exchange-traded derivatives 221–5
expected utility 53, 68, 76, 86–7, 92, 246
theory of choice 84
experience-rated premiums 106
expropriation insurance 195
extreme weather-related disasters 2, 8, 241

see also weather-related catastrophes, weather extremes

facultative reinsurance 179
Farrish, Thomas O. 133
Faure, Michael 95
feature rating 139
Federal Crop Insurance Program 55
financial crisis 221–2, 232–3, 237, 239
financial instruments 74
Fire Suppression Rating Program 142
first-party insurance 10, 112, 135
flat rate 156
Flood Disaster Protection Act of 1973 154
flood maps 147–8
Flood Re 146–9
Florida Hurricane Catastrophe Fund 142
Florida Citizens Property Insurance Corporation 78, 126
France 9, 127, 131, 144, 155–8, 164–9, 177, 196–9
Caisse Centrale de Réassurance (CCR) 127, 155, 177–8, 196–9, 249
Catastrophes Naturelles (Cat. Nat) System 155
Insurance Code 155–8
fulfilling legal or other official requirements 87

gentleman’s agreement 52, 145
global reinsurance capital 183
global warming 4–5, 8, 241
goal-based model of choice 87–8
Goshay, Robert 218
government bailouts 6, 39–40, 54, 68, 88–9, 93–4, 97–9, 124, 169–70, 207–10, 244
government bonds 194, 252
government catastrophe assistance insurance 211
government failures 13, 35
governmental guarantee 197–8
government intervention 3, 13, 19, 25, 50–72, 99, 166, 194, 207, 209, 215, 244, 248, 256
distortion-inducing 51
government-provided compensation 47
government-sponsored reinsurance 11, 176–215, 243, 249, 255
government stimulation 46–72
of private catastrophe insurance 46
government subsidized disaster relief program 21
see also government subsidy program
government subsidy program 13
see also government subsidized disaster relief program
governmental aid 39
see also Wenchuan Earthquake
greenhouse gases (GHGs) 1, 102
and emissions 1–5, 102–3, 108, 114–21, 253
man-made 115
see also climate change

hazard cycle 14
health insurance 124, 245
Heimer, Carol 133
Homeowner Flood Insurance Affordability Act of 2014 69, 164
homeowners’ insurance 6, 89, 123, 145–6, 246
Hurricane Andrew 64, 77, 82–3, 104, 142, 191, 193, 217, 222
Hurricane Katrina 78, 82–3, 88, 152, 154, 176, 181, 192, 226
Hurricane Sandy 152, 176

imperfect competition 54
indemnity trigger 223
index trigger 223
India’s National Agricultural Insurance Scheme 69
indirect intention 117
indirect regulation of insureds 184, 189–90, 194, 199, 202, 205–6
insurability 6, 63–4, 80–82, 84, 89, 108–14
uninsurable risk 112
insurance-as-governance 106, 133
see also regulation by insurance
Insurance Institute for Business & Home Safety 142
Insurance Institute for Property Loss Reduction 142
insurance-linked securities (ILS) 3, 7–8, 11, 212, 218–40, 242–3, 254
upfront costs 235
see also catastrophe (cat) bonds, insurance securitization
insurance regulation 132
insurance securitization 218–40
see also catastrophe (cat) bonds, insurance-linked securities (ILS)
insurance vouchers 67, 69–70, 125, 253
insurers’ premium-setting processes 107–8
intermediaries 64, 235
internalize 114, 121–2
intuitive thinking 85–6, 243
see also Kahneman, Daniel
IPCC (2012) 106
IPCC (2014) 101
Jaffe, Dwight 47
Japan 9, 158–61, 164–9, 199–202
Earthquake Insurance Act 158
Earthquake Reinsurance Treaty “A” 160
Japanese Earthquake Reinsurance Scheme (JER) 159–61
Tohoku earthquake 159
Kahneman, Daniel 85–6
Kaplow, Louis 47, 75
Knight, Frank 75
Kochenburger, Peter 133–4
Krantz, David H. 87
Kunreuther, Howard 47, 75, 87, 95, 134, 135
Kyosai 160
lack of catastrophe data 90
Laissez-faire theory 50–54, 62
Land of Famine 14
last resort 11, 59, 66, 113, 126, 137, 199, 202, 206, 208, 210, 213, 243, 249, 252–3, 255, 257
law of large numbers 77, 82
Lewis, C.M. 57–8, 66
liability insurance 10, 103–8, 114–23, 128, 131, 133–4, 140, 250
see also third-party insurance
life insurance 48, 124
Lloyd’s 1, 84, 104
local governments 20, 32, 35, 38, 50, 93–4
Logue, Kyle D. 134
long-run expected profits 80, 83
long-tail risks 111
longer-term relationship controls 188
loss mitigation 5, 11, 40, 103, 202, 213, 254
loss probability 107, 251
loss-sensitive premiums 11, 184–6, 194, 197–8, 200, 204–5, 213–4
loss severity 107, 251–2
low-probability but high-consequence risk 10, 61, 67, 85
Lunar Exploration Program 13
mandatory insurance 10, 68, 95, 97–100, 144, 242, 244, 246–7
mandatory multiyear insurance 98–100
marine insurance 48
market(-based) economy 6, 19–21, 27–9, 37, 56, 61
market-based premium 59
market-enhancing theory 50–51, 57–62
market equilibrium 51, 58
market failures 13–14, 19, 35, 46, 54, 58, 63, 207
Market-Government Dichotomy 50
market share liability theory 115–16
Marmara Earthquake 59, 202
Massachusetts v Environmental Protection Agency (EPA) 102
Maynard, Trevor 84
McKinsey & Company report 83–4
means-tested vouchers 245
media coverage 38–9
medical malpractice 195
Michel-Kerjan, Erwann 47, 153
Milli Reasürans (“operational manager”) 204
minimum capital requirements 60
mitigate climate change risk 5, 6, 10, 103, 106–8, 241
mobilizing military power 29
Mocsary, George 134
control of 59
mortgage contract 144
multi-period principal-agent model 185
multiyear insurance 10, 95–100, 242
Munich Re 7, 59, 91, 203–5, 209, 215, 235
Murdock, K.C. 57–8, 66
myopic behaviour 84
myopic loss aversion 86–7
named-peril insurance policies 245
National Committee for Disaster Reduction 22–3
National Disaster Prevention and Reduction Day 25
National Flood Insurance Program 55, 69, 85, 144, 249
National Flood Insurance Reform Act of 1994 153
natural catastrophes 2–4, 14–6, 30, 77, 151, 156, 182, 233
Droughts 2, 14–5, 22, 49
floods 1–2, 8, 14–17, 20, 22, 49, 55, 96, 102, 123, 146, 148–9, 153, 155, 166–7, 173, 212
heavy rainfall 15, 102
hurricanes 8, 14, 55, 76, 79, 82, 135–6, 181, 192–3, 223–4
and bond 222
see also Hurricane Andrew, Hurricane Katrina, Hurricane Sandy
landslides/mudslides 14–16, 102, 161, 212
snowstorms 8
tsunamis 158, 161, 206, 212
typhoons 1–2, 8, 14, 16, 20, 49, 173, 206, 212
volcanic eruptions 158, 199
see also catastrophe disasters
natural disaster syndrome 88
New Orleans 82
no-fault compensation mechanism 121
non-index-linked deductibles 156
Non-Life-Insurance Rating Organization of Japan 201
Occupational Injury Insurance 124
an occurrence 117
Olympic Gold Medals Strategy 13
“over the counter” (OTC) derivatives contracts 221–5
Panda Re Ltd (Series 2015–1) 217–18
paradox of the adjusting state 52
parametric trigger 224
Pareto optimality/efficiency 77
Paris Agreement 3
see also Paris climate change accord
Paris climate change accord 5
see also Paris Agreement
path dependency 60
People’s Bank of China 172, 246
People’s Insurance Company of China (PICC) 57, 209, 211, 254
perverse incentives 36–9
PingAn Insurance Company 212–13
Planning Policy Statement (PPS) 148
polluter-pays principle 121
pollution exclusion 117–18
post-disaster 46
arrangements 25
labor supply 45
measures 45–6
reconstruction 25
relief 5, 10, 71, 130
restoration 42
see also disaster relief
precaution measures 39, 167
pre-disaster
arrangements 25
measures 45–6
premium differentiation 159, 166, 174, 256
“prevention of risk plan” (plan de prevention des risques) 157
Price-Anderson Act 150
price discrimination 55
Priest, George L. 47, 75
private regulation 130
product design 188–9
property-casualty insurance 124, 191
companies 82
policies 245
property insurance 6, 48–9, 144
companies 7, 64, 91, 163, 173, 208
policies 49, 165
products 92
property losses 104–5, 181, 212, 254
proportional liability theory 115
prospect theory 86–7
providing risk management services 188–9, 194, 198–9, 204–5, 215
proximate causation 115
public crisis management theory 93
public-interest theory 50, 54–7, 62
public-private partnership 59, 142, 155, 158, 195, 200, 202, 248–53
quasi-mandatory arrangement 149
public 55
public residual risk insurance programs 126
randomness 109, 111–12
Rappaport, John 134
rate classification 106, 250–51
rational choice theory 71
Records of Laws and Systems of Qing Dynasty (Da Qing Hui Dian Shi Li 1899) 18
see also Disaster Defense and Reduction Policies
reform and opening (gaige kaifang) 17, 19–20, 37
Reform and transition 19
refusal(s) to insure 6, 138, 143–5, 149, 154–5, 158, 160, 163, 165–6, 172, 174, 190, 256
Regulation on Agriculture Insurance 50, 94
regulation of forms 60
regulation by insurance 6, 11, 101, 130–35, 141, 215, 250
see also insurance-as-governance regulatory function 103
regulatory vacuum 137
Reichman, Nancy 133
reinsurance transactions 185
relying on a government bailout 88
rent-seeking 36–7, 51
Residential Mortgage Regulation 172
retroactive liability 111–12
retrospective rating 186
risk assessment 58, 63–4, 74, 130
risk aversion 21, 76–7, 83
risk-based premiums 43, 66–7, 70, 107, 122, 125, 127, 135, 139–40, 152–3, 156, 159–60, 167–8, 207, 253–4
see also risk-based pricing
risk-based pricing 6, 10, 107, 122, 138–40, 145, 147, 149, 152–3, 156, 159–60, 162, 164–6, 169, 171, 174, 190, 204, 245, 251, 256
see also risk-based premiums, loss-sensitive premiums
risk communication 244
risk control 74, 130
risk classification 66–7, 125
risk financing 48, 59, 65, 74–5, 130, 176, 226
the lack of 36, 43–4
risk management 1, 5, 11, 17–26, 32, 43, 46–7, 62, 69, 74–7, 103–8, 130, 152, 163 173, 178, 184, 188–9, 192, 194, 198–9, 201–2, 204–7, 210, 213 215, 257
risk-neutral 77, 179
risk pooling 47, 58, 76, 77, 80, 130, 228
risk prevention 40, 132, 157, 165, 213
risk segregation 55, 58
risk society 129
risk transfer 76–7, 80, 176, 184, 217–8, 226, 228, 254
Russell, Thomas 47
safety-first rule 83
Samaritan’s Dilemma 36, 39–41, 88, 94
Sandor, Richard 218
satellite insurance 110
satisfying emotion-related goals 87
satisfying social and/or cognitive norms 87
sharing risk for financial protection 87
Shenzhen City Program 94–5
see also Shenzhen Model
Shenzhen Model 210–15, 253–5
see also Shenzhen City Program
shock therapy 37, 56, 60
short-run profit horizon of insurers 83
shortsighted behaviour 84
silent regulators 134–5
Sindell v Abbot Laboratories 116
single purpose reinsurer (SPR) 219
Smetters, Kent 185
social insurance 5, 8, 10, 13, 21, 69, 124, 241
social solidarity 66, 125
socialism with Chinese characteristics 12
solvency regulation 60
special purpose vehicle (SPV) 219
standard-form policies 49
Stanovich, Keith 85
State Council (the Central People's Government) 22–4, 28–30, 48
state-owned enterprises 56
supply-demand framework 9, 78–89
Swedloff, Rick 134
Swiss Re 7, 78, 90, 91, 104, 189, 209, 211, 213, 215, 234, 235
System 1 85–6
see also intuitive thinking
System 2 85–6
see also deliberative thinking
Taiping Re 211, 213
Talesh, Shauhin 134
Telesetsky, Anastasia 95, 135
Terrorism Risk Insurance Act 55, 126
Thinking: Fast and Slow 85–6
third-party insurance 121, 131, 135
see also liability insurance
tortious liability 114–21
transaction costs 5, 13, 45, 47, 64–5, 75, 96, 99, 229–30, 242, 256
transitional economies 52
treaty reinsurance 179
Turkey 9, 65, 161–9, 202–5
on Compulsory Earthquake Insurance 161
Disaster Insurance Law (Law No. 6305) 161
Governmental Decree Law No. 587
National Building Code 163
Turkey Seismic Zones Map 162
Turkish Catastrophe Insurance Pool (TCIP) 59, 65, 97, 127, 144, 177–8, 202–5, 249
Tversky, Amos 86
uncertainty 75, 77, 81, 109
un-measurable exposure 75, 81
underwriting assistance 188–9
underwriting cycles 190, 228, 252
unfair trade practices 60
United Kingdom 9, 145–9, 164, 166–7, 248
private flood insurance scheme 52, 145, 248
Water Act 2014 146
United Nations Framework Convention on Climate Change (UNFCCC) 2
United Nations Intergovernmental Panel on Climate Change (IPCC) 101
United Services Automobile Association (USAA) 222
see also IPCC (2014)
United States 9, 77–8, 144, 149–55, 164–9
Citizens Property Insurance Corporation 78, 126
Environmental Protection Agency 118
Federal Crop Insurance Corporation 55
Federal Deposit Insurance Corporation 55
Federal Emergency Management Agency 72, 151
insurance-based society 149
Nuclear Regulatory Commission (NRC) 150
Supreme Court 102, 114, 118
value-at-risk 10, 102–3, 108, 121–8, 225
vehicle insurance 48
Wang, Alex 1
weather extremes 1
see also extreme weather-related disasters 2, 8, 241
weather-related catastrophes 1, 2, 15
see also extreme weather-related disasters 2, 8, 241
Wenchuan Earthquake 36, 41, 245
see also Great Sichuan Earthquake
West, Richard 85
"Whole–Nation System" (Juguo tizhi) 5, 7, 10–11, 13–4, 16–46,
Index 267

“Write Your Own” (WYO) program 152
whether insurance 108, 255
Whether insurance-linked securities 227
World Bank 58–9, 66, 204

World Trade Organization 7, 91, 209
Xian, Qinghua 93
Ye, Xiaolan 93
Yin, Haitao 134
Yunnan Province Program 94