



DIW Berlin



Mainstreaming of Climate Risks and Opportunities

In Cooperation with (among others):



Münchener Rück
Munich Re Group



HypoVereinsbank

Member of



CARBON DISCLOSURE PROJECT

onValues
investment strategies & research

Mainstreaming of climate risks and opportunities...

- demand-oriented
- use-oriented
- innovative, systematic
- adequate, comprehensive
- in cooperation with financial service providers
Allianz Global Investors – HBV – MunichRe – WestLB u.a.
and in dialogue with several international players
CDP – IIGCC – EAI etc.

Key Question:

How can risks and opportunities related to climate change be adequately taken into account within financial services?

Objective:

A contribution to the development of applicable methods, instruments and procedures that provide an appropriate incorporation of opportunities and risks related to climate change for

- Financial analysis
- Company valuation
- Risk quantification and control
- **Asset management (main focus)**
- Investment decisions
- Insurance

Climate Change

1. Change in weather conditions

e.g. frequency and intensity of extreme weather events

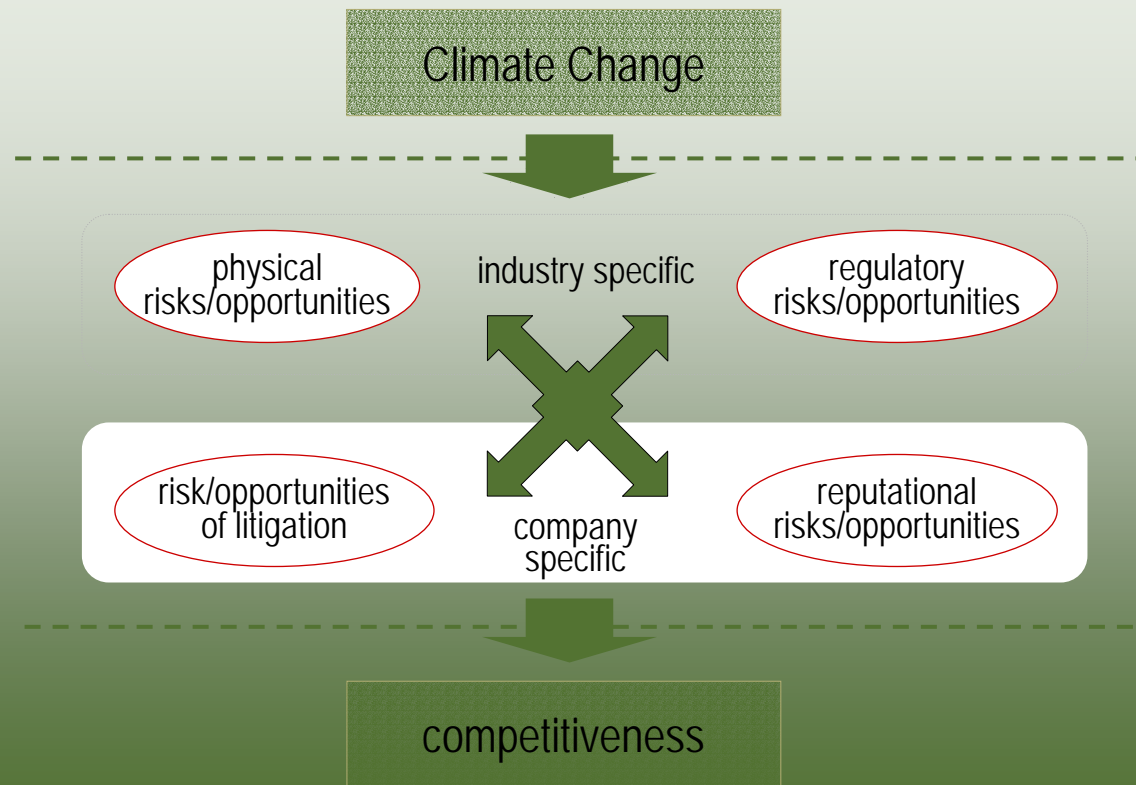
→ Climate Change decreases usability of known statistics

2. Change of the regulatory framework

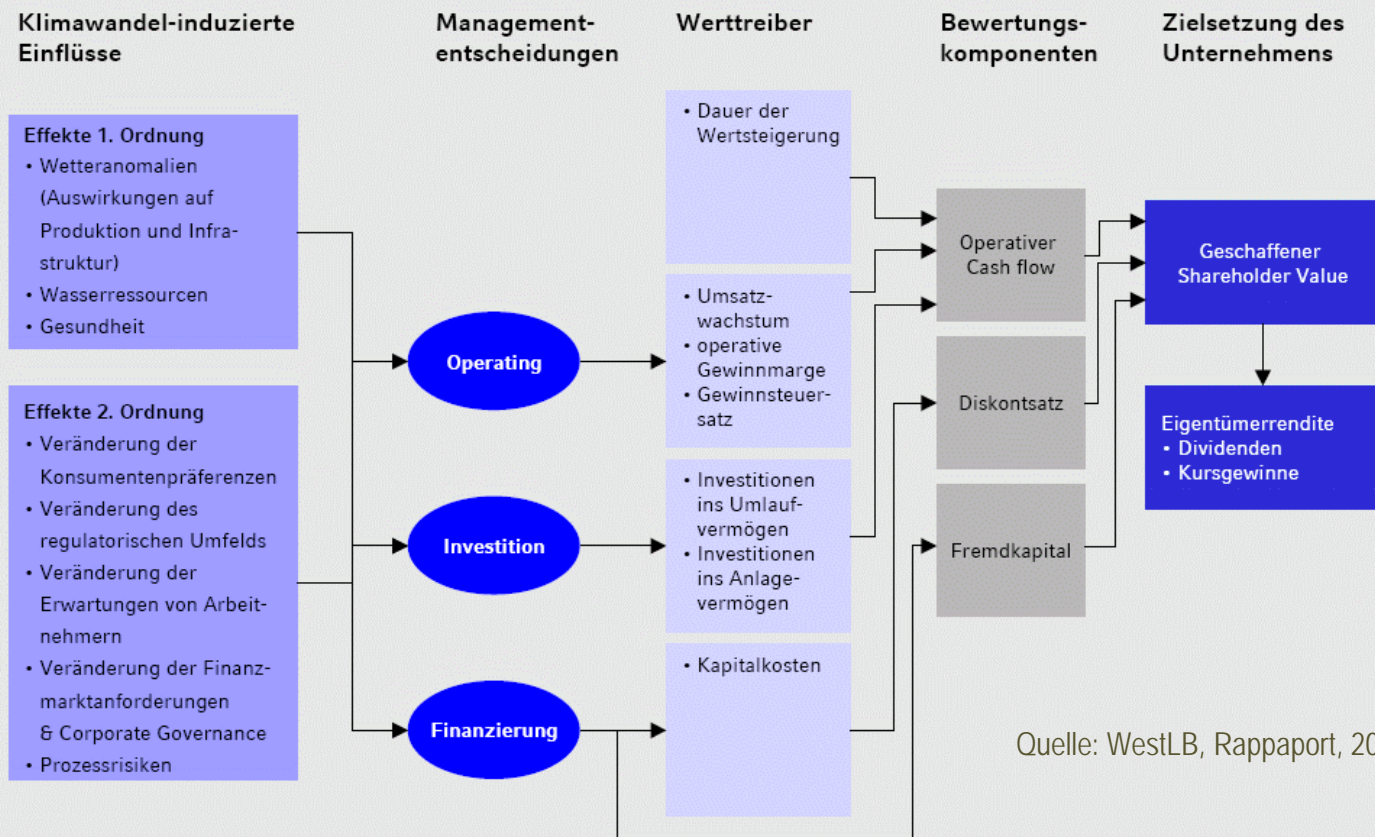


Climate Change entails "real uncertainty"!

Climate Change and Competitiveness



Climate Change and Company Value/ Value Drivers



Bayesian Risk Management

- climate change decreases usability of present data base
- high uncertainty demands for broadening the concept of probability
- Bayesian method fills the emerging gap:
 - consideration of different scenarios for future development
 - Evaluation of the scenarios using a priori probabilities based on data, previous knowledge and additional assumptions
 - Employment of state-of-the-art methods:
 - Bayesian Learning
 - Bayesian Nets

Bayesian Risk Management

Scenarios for possible future developments

scenario 1

scenario 2

scenario 3

scenario 4

*Present knowledge:
data + previous knowledge + assumptions*

A priori probabilities

$$p_1 = 0,5$$

$$p_2 = 0,3$$

$$p_3 = 0,1$$

$$p_4 = 0,1$$

*Bayesian Learning:
new events*

A posteriori probabilities

$$p_1 = 0,4$$

$$p_2 = 0,25$$

$$p_3 = 0,2$$

$$p_4 = 0,15$$

Input

- demand analysis
- findings/data received from (among others)
 - Enhanced Analytics Initiative
 - Carbon Disclosure Project
 - DVFA
- Bayesian risk management
- focus groups
- online markets
- studies/ analyses/ workshops
- etc.

possible Outcome

- improved financial analysis
- improved investment decisions
- improved ratings
- improved risk and opportunity management
- portfolio optimization
- improved underwriting
- improved Brokerage Research
- etc.



Contact Information

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