

Rating, Credit Decision and Pricing –

How Sustainability and Life Cycle Assessments are Changing Credit Practice

Prof. (FH) Dr. Manuela Ender, Prof. Dr. Konrad Wimmer, Dr. Robert Ilg, Dr. Stefan Albrecht, Matthias Fischer, Univ.-Prof. Dr. Klaus Sedlbauer

Agenda

- 1 Introduction: Current issues
- 2 The 5 C's of Credit – traditional view
- 3 The 5 C's of Credit – including sustainability
- 4 Change in credit losses and PD
- 5 Change in collateral value: Our joint planning and simulation tool follows the life cycle





Climate change threatens Europe's coasts

NO-ACTION SCENARIO

Global warming is driving sea-level rise and intensifies coastal storms, resulting in more frequent flooding. If no action is taken, coastal flood impacts will be severe.

year 2100 HIGH EMISSIONS

SEA LEVEL +85 cm
[47 cm – 198 cm]

2.2 million
PEOPLE EXPOSED
per year

239 billion €
ECONOMIC LOSSES
per year

NOW

170-fold increase in economic losses
22-fold increase in exposed population

130 Gt
of CO₂eq
emissions*

25 Gt
of CO₂eq
emissions*

MITIGATION AND ADAPTATION SCENARIO

Mitigation means limiting sea level rise by reducing emissions. **Adaptation** includes all measures to protect coastal communities through nature-based and engineered physical measures.

year 2100 WITH MITIGATION

SEA LEVEL +51 cm
[21 cm – 84 cm]

552 thousand
PEOPLE EXPOSED
per year

12 billion €
ECONOMIC LOSSES
per year

NOW

Raising flood defenses
will cost up to 2 billion € per year

95% reduction of economic losses
73% fewer people exposed

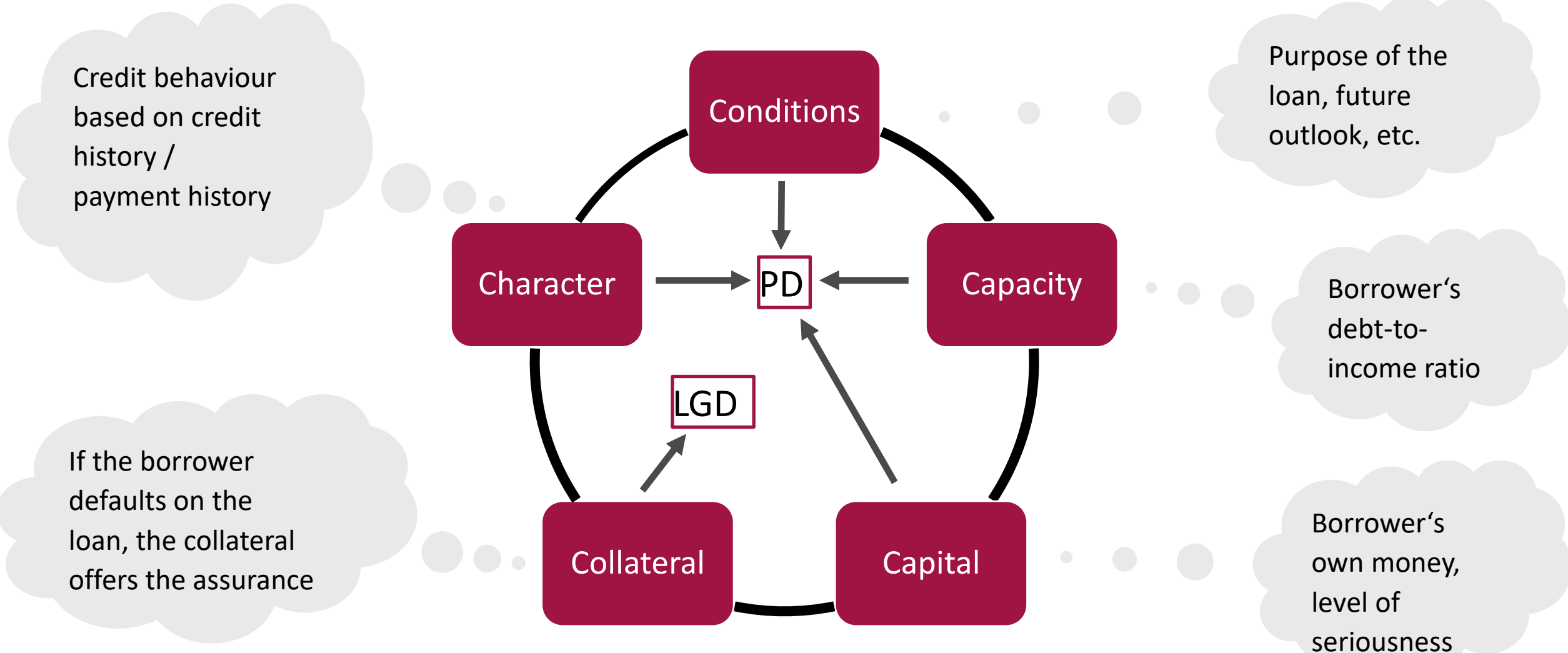
100 thousand
PEOPLE EXPOSED
per year in present
1.4 billion €
ECONOMIC LOSSES
per year in present

*CO₂eq is a metric measure used to compare the emissions from various greenhouse gases on the basis of their global warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential (definition from Eurostat).

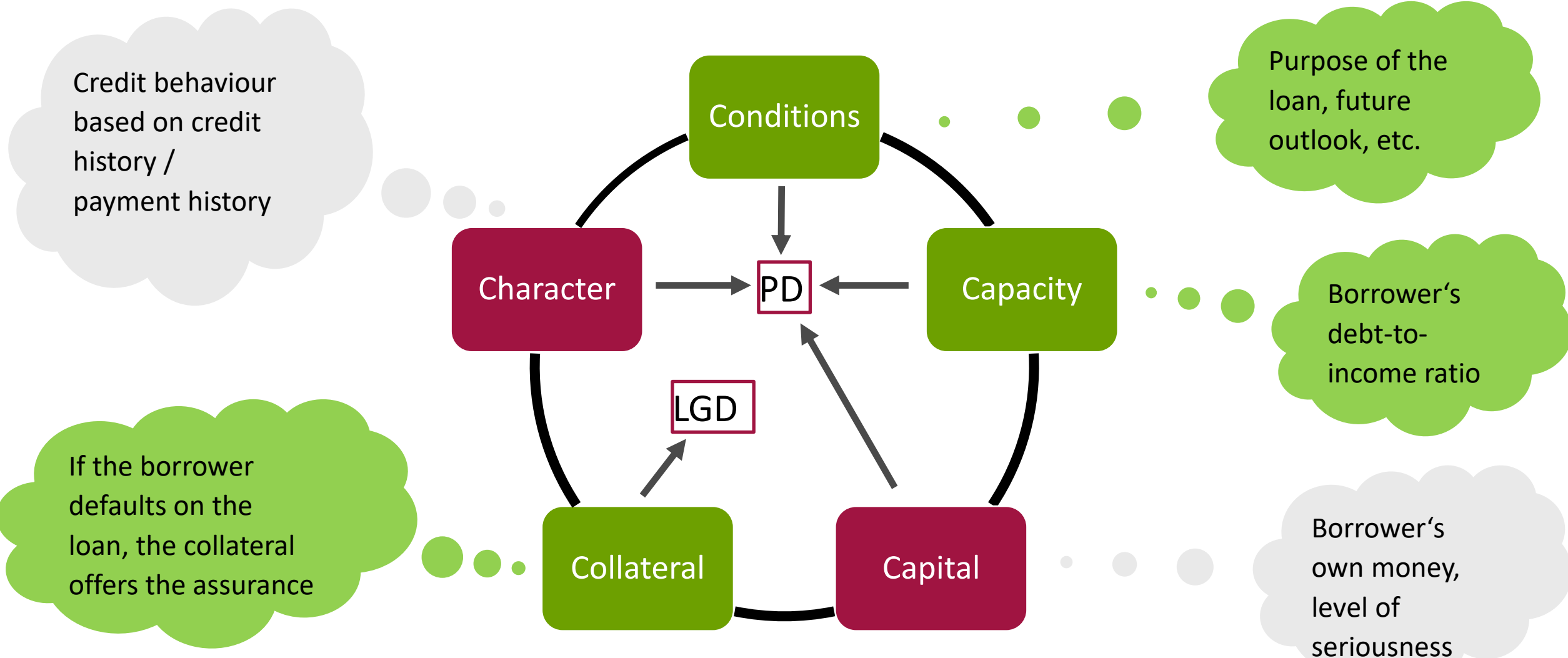
For more information, including assumptions of the modelling framework used, see: JRC PESETA IV project <https://ec.europa.eu/jrc/en/peseta-iv>



The 5 C's of Credit – traditional view



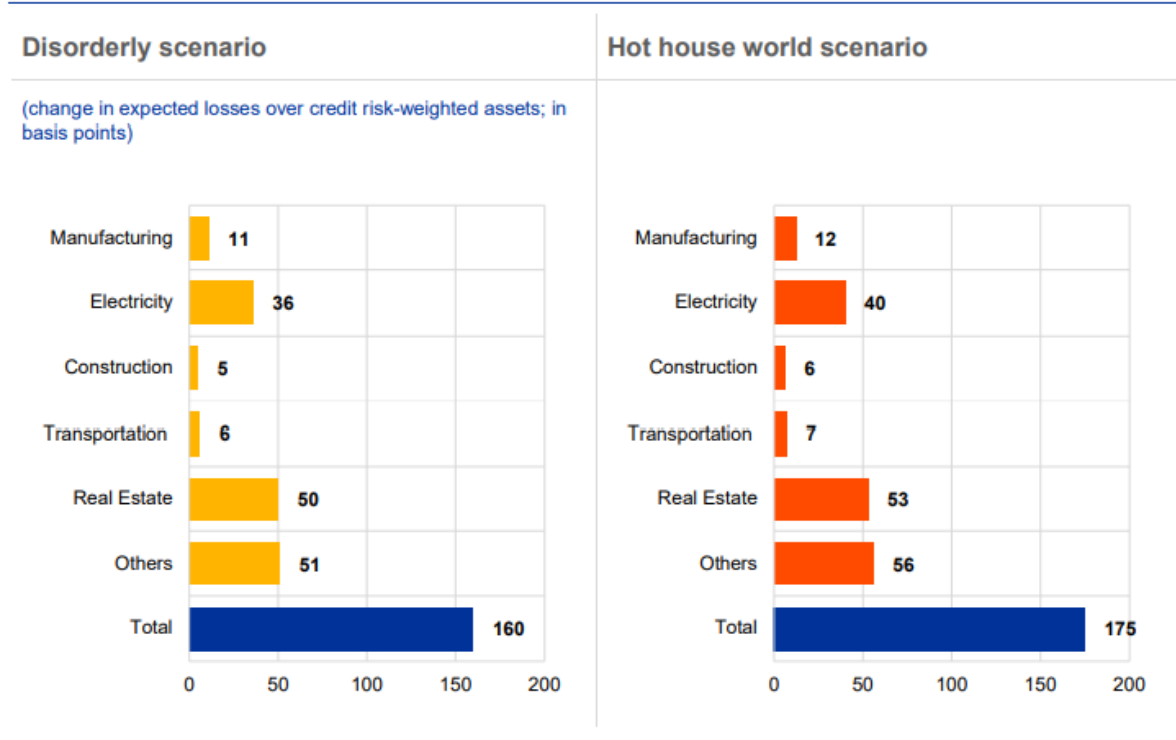
The 5 C's of Credit – including sustainability



Change in credit losses and PD depending on the scenario



Bank credit losses including contributions to the overall impact by sector under the disorderly scenario (left panel) and the hot house world scenario (right panel)

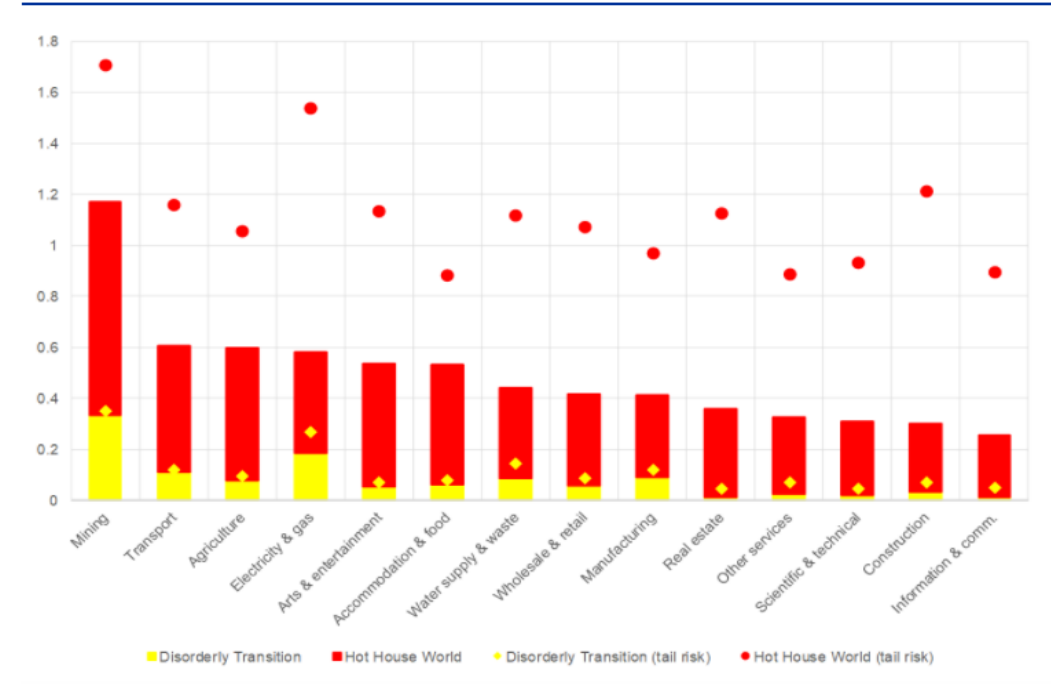


Source: ECB calculations.

In order to put these numbers into perspective, the expected loss on non-SME exposures of SSM banks expressed as a ratio to risk-weighted amounts was -3.6% in the 2018 EBA/SSM stress test.

Source: [Climate-related risk and financial stability \(europa.eu\)](https://www.europa.eu)

Differences in firms' default probabilities (%) in the two adverse scenarios with respect to the orderly transition scenario, by sector and group of firms (mean firms, and firms mostly exposed to physical risk)



Source: ECB calculations

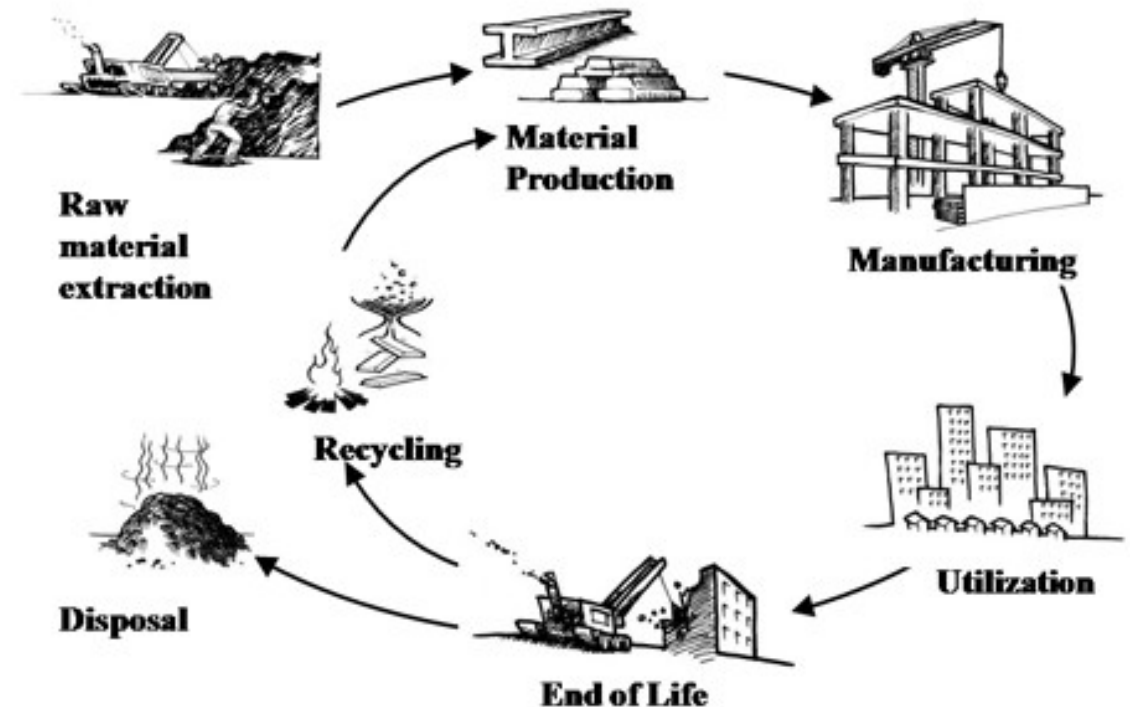
Note: the bars represent the median changes in default probabilities over the next 30 years; the dots instead report the changes in default probabilities when considering the firms that are most exposed to physical risk (95th percentile based on firms' physical risk score).

Source: [Shining a light on climate risks: the ECB's economy-wide climate stress test \(europa.eu\)](https://www.europa.eu)

Change in collateral value



- The collateral value is the market value of anything that is used as collateral to secure a loan
- Real estate is very often used as collateral
- To calculate the „true“ market value of buildings you need to include their energy requirements and their environmental emissions over the entire life cycle: life cycle assessment



Source: Fraunhofer IBP

Our joint planning and simulation tool follows the life cycle



Input IBP:
Ecological
Key figures



Online-Software
GENERIS®

Trans-
formation
into € values

Planning tool

Components

- Plan P&L (profit plan)
- Plan trade balance
- Plan tax balance
- Liquidity planning (financial plan)

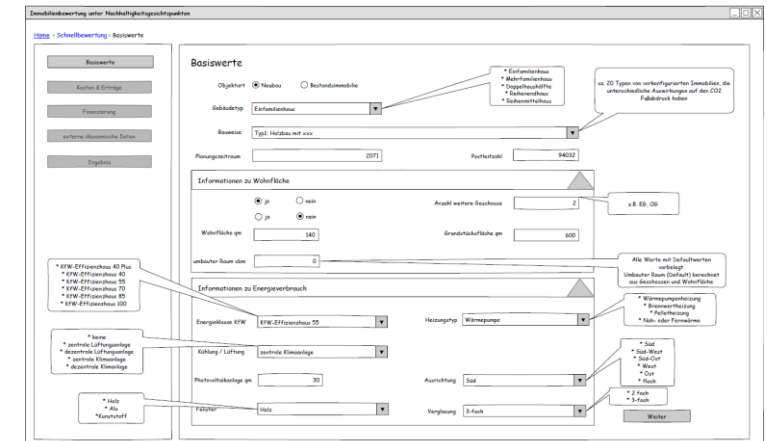
Components must be coordinated, linked and logically integrated.

Risk
modul

Control
modul

Planning and simulation tool

- Derivation of cash flows after tax payments
- Life cycle costing
- Scenarios and simulations Risk assessment: e.g. construction costs, rental income, property value development





Thank you very much!

Questions?

Kontakt



Prof. Dr. Konrad Wimmer
Executive Partner Research &
Strategische Themen
+49 (0) 151 / 14291359
Konrad.wimmer@msg.group



Prof. (FH) Dr. Manuela Ender
Executive Business Consultant
+49 (0) 176 / 43864676
Manuela.ender@msg.group

Fraunhofer
IBP



Dr.-Ing. Stefan Albrecht

Gruppenleiter Werkstoffe und Produktsysteme
Abteilung Ganzheitliche Bilanzierung (GaBi)
Fraunhofer-Institut für Bauphysik IBP

Wankelstr. 5 | 70563 Stuttgart | Germany
Telefon: +49 711 970-3170 | Telefax: +49 711 970-3190
stefan.albrecht@ibp.fraunhofer.de
<http://www.ibp.fraunhofer.de>

Fraunhofer
IBP



Univ.-Prof. Dr.-Ing. Dipl.-Phys.

Klaus Peter Sedlbauer

Institutsleiter

Fraunhofer-Institut für Bauphysik IBP

Fraunhoferstraße 10 | 83626 Valley | Germany
Telefon: +49 711 8024 643-243
klaus.sedlbauer@ibp.fraunhofer.de
<http://www.ibp.fraunhofer.de>

Fraunhofer
IBP



Matthias Fischer

Abteilungsleiter

Abteilung Ganzheitliche Bilanzierung (GaBi)
Fraunhofer-Institut für Bauphysik IBP

Wankelstr. 5 | 70563 Stuttgart | Germany
Telefon: +49 711 970-3155 | Telefax: +49 711 970-3190
matthias.fischer@ibp.fraunhofer.de
<http://www.ibp.fraunhofer.de>

Fraunhofer
IBP



Dr.-Ing. Robert Ilg

Chief Engineer

Abteilung Ganzheitliche Bilanzierung (GaBi)
Fraunhofer-Institut für Bauphysik IBP

Wankelstr. 5 | 70563 Stuttgart | Germany
Telefon: +49 711 970-3162 | Telefax: +49 711 970-3190
robert.ilg@ibp.fraunhofer.de
<http://www.ibp.fraunhofer.de>

Die Zukunft des Bankings aus einer Hand










Backup: msg GillardonBSM AG
Fraunhofer IBP



msg GillardonBSM at a glance



msg GillardonBSM AG

	Consulting, software, IT projects, services, seminars
	Focus on banking
	Member of the msg Group
	Over 600 employees
	Turnover in 2020: EUR 89.2m
	Cooperative partnerships
	Made in Germany
	Certified according to DIN ISO 9001, IDW PS 951
	Experienced industry specialist since 1920

msg Group

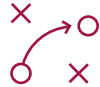
- Intelligent IT and industry solutions
- An independent, owner-managed group of autonomous companies
- Over 8,500 employees
- Turnover in 2020: EUR 1.1bn
- Subsidiaries in 28 countries around the world

msg banking sector





**STRATEGIC
MANAGEMENT**



Business & risk strategy

Pareto-oriented KPI management

Platform strategies

MARKET/SALES



Front-end
customer experience
CRM

Analytics
AI support
Trading

PRODUCTION



Core banking
Lending operations
Deposit business

Securities transactions
Payments

MANAGEMENT



Bank controlling
Treasury
Risk management

Controlling
Accounting
Reporting

**SUPPORT
PROCESSES**



IT & data management

Human resources

Others, such as ERP

CONTROL PROCESSES



Governance & compliance

Revision

External audits/inspections



- We support organizations worldwide with **Life Cycle Assessments (LCA) & sustainable solutions** for products & services for our customers
- We help you to **minimize risks, reduce costs and strengthen your brand** with an integrated, sustainable approach to product development
- We enable a **holistic integration of your entire value chain** for transparent performance management and increase the product attractiveness and sales of your products

More than 30 years experience
on sustainability solutions

90
years
Fraunhofer
IBP

30
years
Department
GaBi