CORPORATE FINANCE FOR LONG-TERM VALUE

Chapter 1: The Company within Social and Planetary Boundaries

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The BIG Picture

- Economic models were made for an empty world
- But we live now in a full world with massive energy and material use and large social inequalities

Solution

- United Nations agenda of Social Development Goals
- Include social and environmental factors in company valuation
- Recognise present and future generations as relevant company stakeholders, alongside shareholders

From pre- to post-industrial revolution

Empty world

Abundance of goods and services from nature

- Technological advances dependent on fossil fuels & other raw materials
- Massive production & consumption
- Economic & population growth

Full world

Club of Rome (1973): Limits to Growth

Sustainable development

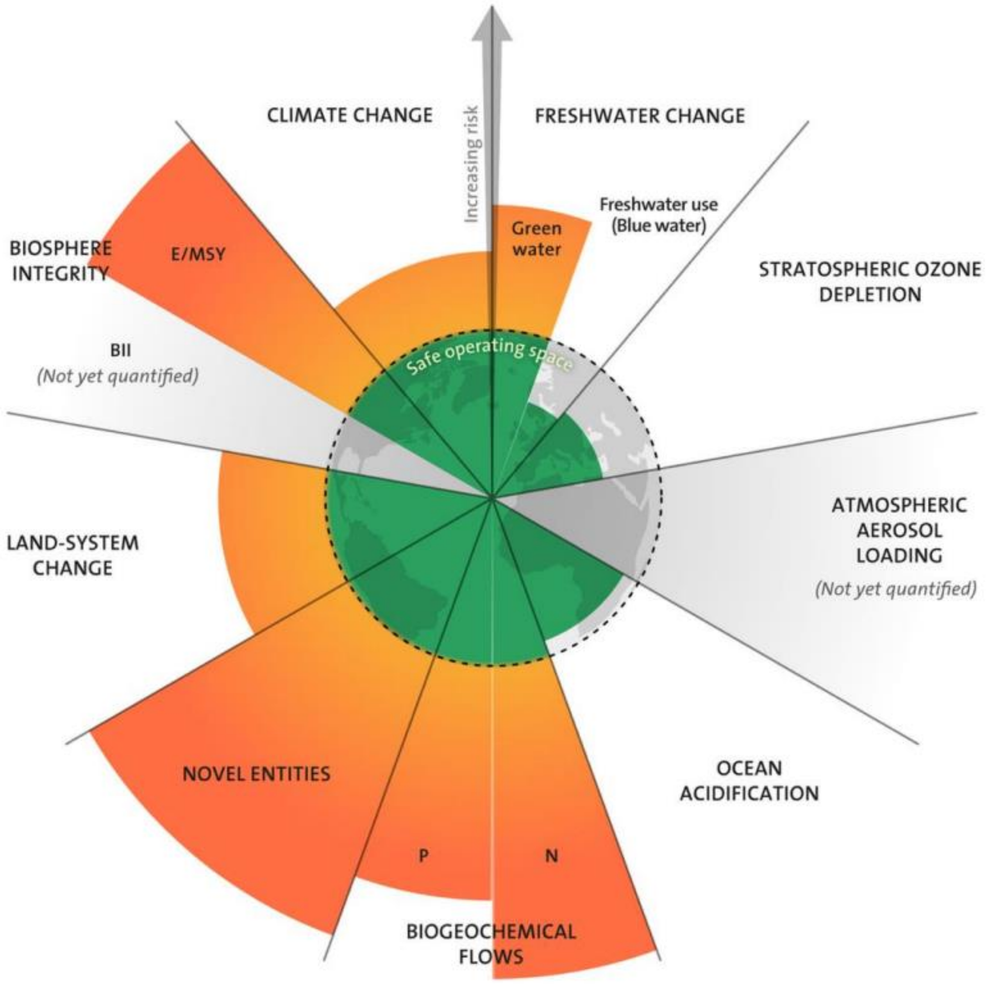
- UN’s Brundtland Report (1987):

  “"...the *environment* is where we live; and *development* is what we all do in attempting to improve our lot within that environment. The two are inseparable."

- **Sustainable development** is “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”

Planetary boundaries

- The **planetary boundaries framework** of Steffen et al. (2015) defines a *safe operating space for humanity* within the boundaries of *nine productive ecological capacities* of the planet
- The planetary boundary lies at the intersection of the green and orange zones



Social foundations

- Kate Raworth defines the **social foundations** as the social priorities, grouped into three clusters, focused on enabling people to be:
  1) **Well**: through food security, adequate income, improved water and sanitation, housing and healthcare;
  2) **Productive**: through education, decent work and modern energy services; and
  3) **Empowered**: through networks, gender equality, social equity, political voice and peace and justice
- UN’s Universal Declaration of Human Rights:

  “recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world”

Sustainable Development Goals

SDGs at different levels

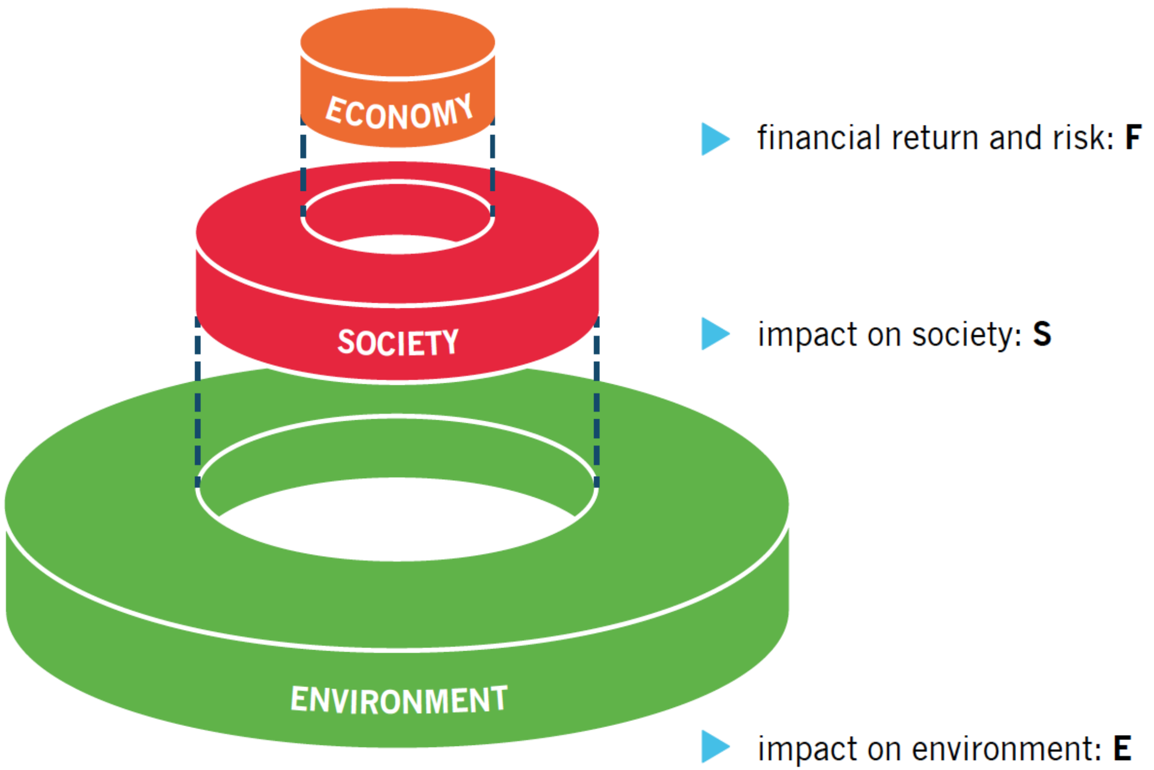
- Overall Goal
  - SDG 17
- Economic Goals
  - SDG 8, 9, 10 and 12
- Societal Goals
  - SDG 1, 2, 3, 4, 5, 7, 11 and 16
- Environmental Goals
  - SDG 6, 13, 14, 15

Systems perspective

- Assume an integrated social-ecological system perspective
- The process of sustainable development = embedded cycles with adaptive capacity (Holling, 2001)
  - Resilience of the system to deal with unpredictable shocks
  - Ecosystem management via incremental increases in efficiency does not work
  - For transformation, ecosystem management must build and maintain ecological resistance as well as social flexibility to cope, innovate and adapt

Corporate governance

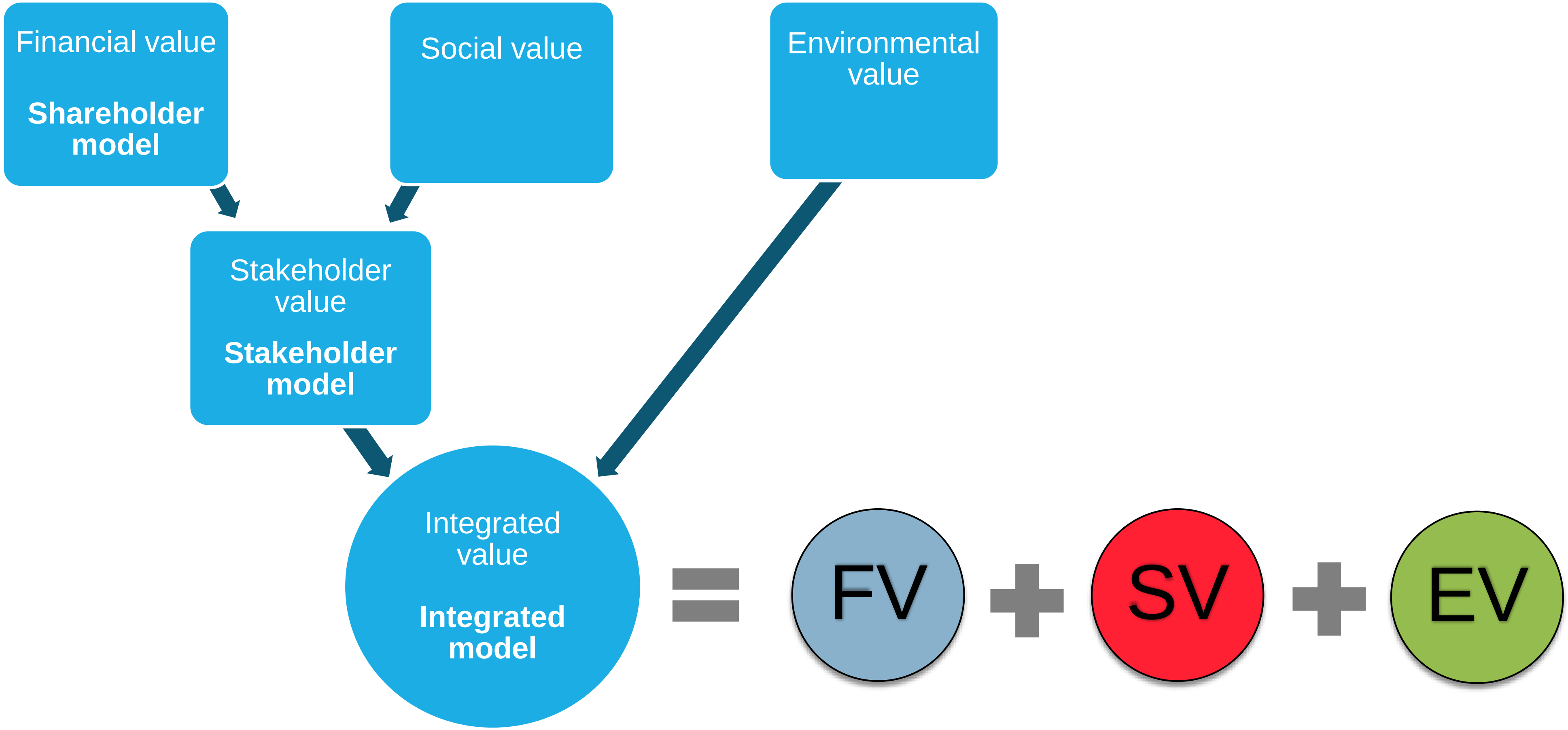
- Shareholder model
  - Companies should maximise *shareholder value* (F)
- Stakeholder model
  - Companies should act in the interest of *financial* (F) *as well as social* (S) *stakeholders* and optimise *stakeholder value*
- Integrated model
  - Companies should optimise *integrated value*, which combines financial (F), social (S) and environmental (E) value



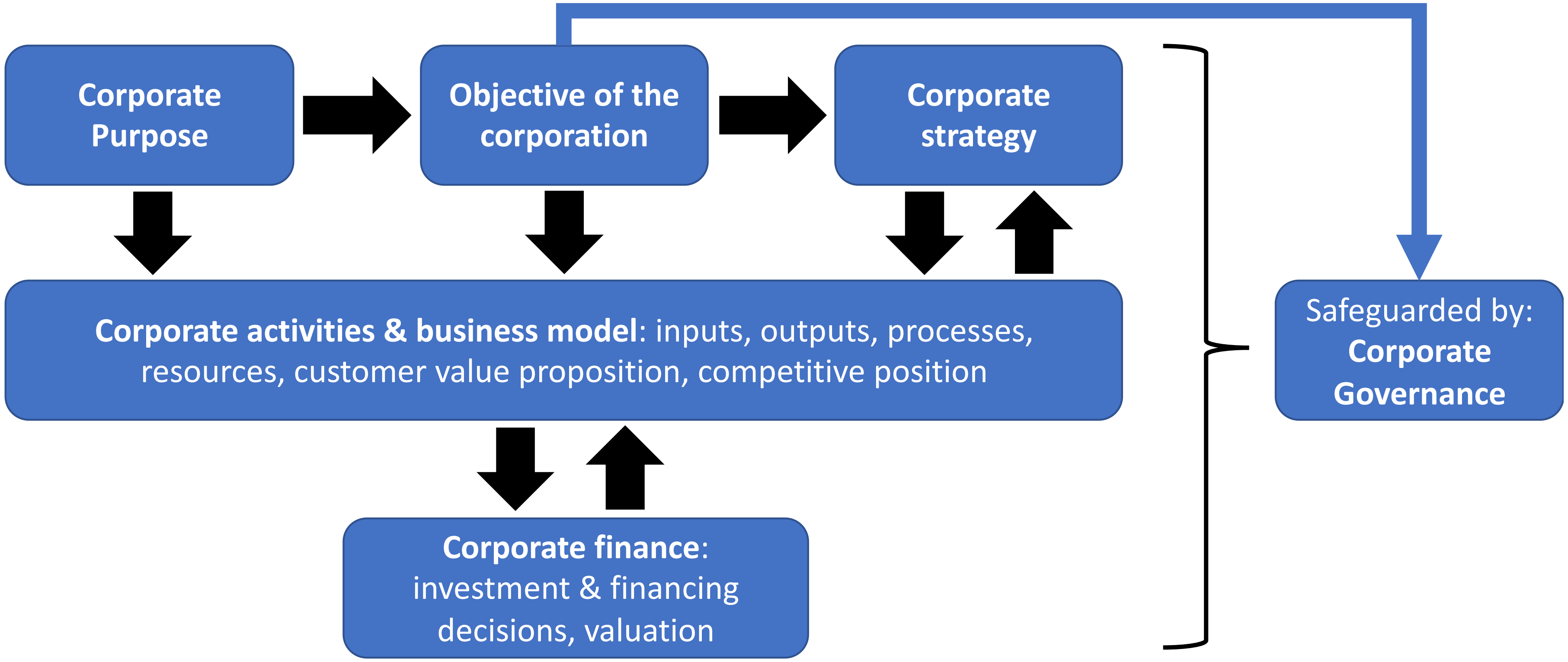
Framework for Sustainable Finance

Corporate finance models	Value created	Main stakeholders	Ranking of factors	Optimisation of value V
Shareholder model	Shareholder value	Shareholders	FV	Max V = FV
Refined shareholder model	Shareholder value	Shareholders	FV SV & EV to extent they affect FV	Max V = FV + b·SV + c·EV $0 < b, c \ll 1$
Stakeholder model	Stakeholder value	Current stakeholders	STV = FV + SV	Max V = FV + b·SV $b = 1$
Integrated model	Integrated value	Current and future stakeholders	IV = FV + SV + EV	Max V = FV + b·SV + c·EV $b, c = 1$

The Integrated Model



Overview of the Company



Relevance of Integrated Value

- Integrated value is relevant for companies in the following ways:
  - Taking investment decisions;
  - Measuring and reporting performance;
  - Conducting risk management;
  - Developing incentives;
  - Taking structural decisions: capital structure, payouts, M&As, etc.

The discounted cash flow (DCF) model

- The **discounted cash flow (DCF) model** is used in corporate finance to determine the value *V* of a project/company:

$$V = \sum_{n=0}^{N} \frac{CF_n}{(1+r)^n}$$

CF = financial cash flows

r = discount rate / cost of capital

n = number of periods

Integration of S and E in DCF model

- Social (S) and environmental (E) can be added to the DCF model, by:
  - Expressing S and E issues in their own units *Q*
  - Determining the respective shadow price *SP* of each S and E issue
  - Multiplying *Q* and *SP* to get the value flows *VF*

$$VF = Q \cdot SP$$

  - Cash flows CF can be seen as value flows VF expressed in cash
  - Determining integrated value *IV* by discounting *VF* using the DCF model:

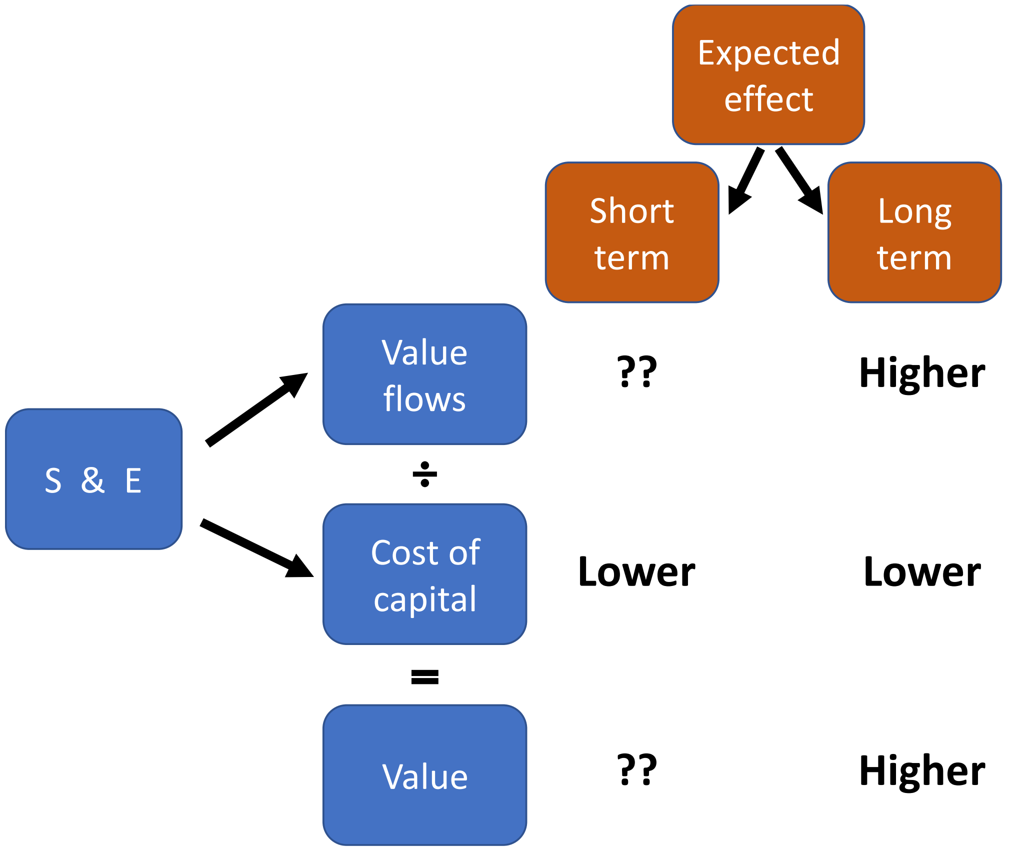
$$IV = \sum_{n=0}^{N} \frac{VF_n}{(1+r)^n}$$

Expected effect of S and E on value

- Value flows
  - Companies that create FV at the expense of SV or EV will be affected with lower FV when internalisation occurs
  - Internalisation means that the burdens of externalities are increasingly shifted back from society to the companies (in the long term)
- Cost of capital
  - The cost of capital increases with social and environmental externalities (because of a risk premium) and decreases with positive social and environmental impact (because of reduced risk)

Expected effect of S and E on value

- Value effect
  - For positive S and/or E impacts, higher value flows (in the numerator) and a lower cost of capital (in the denominator) are expected to produce higher company value in the long term
  - Vice versa for negative impacts
- So, companies with a positive impact are likely to produce **long-term value**
- The challenge lies in **trade-offs** across time and between types of value, which can interact in numerous ways



Conclusions

- Economic growth in the last century created social and environmental challenges
- Sustainability means that current and future generations have the resources needed without stressing the Earth system processes
- Corporate finance has the potential to move from finance as a goal (shareholder value) to finance as a means towards **integrated value creation**
- Finance is about anticipating potential catastrophic events and incorporating expectations in today's valuations for investment decisions