

# Overshoot - Causes and Consequences

Speech to the Workshop on a  
Resource Strategy for Germany

Berlin, 4. April, 2006

# Overview of my Comments

- Our original book had the wrong title, and critics therefore used false arguments against us.
- Overshoot is a direct consequence of our policies.
- Overshoot has already occurred.
- How does overshoot affect the national economy?
- Why is it important to use resources more efficiently?
- An aggressive policy to maximize resource efficiency in Germany will have many benefits for the country.
- It is essential to start now, before the problem is obvious to everyone.

# Our Book had the Wrong Title

- It was called, “Die Grenzen des Wachstums”
- But one does not need a computer model to prove there are physical limits to physical growth on a physically finite planet. That was not our goal, and not our contribution.
- Our contribution was to show that population and industrial growth are inherently exponential; exponential growth takes one to the existing limit quickly, whatever its level.
- We showed also that global society will most likely overshoot its limits and then collapse.

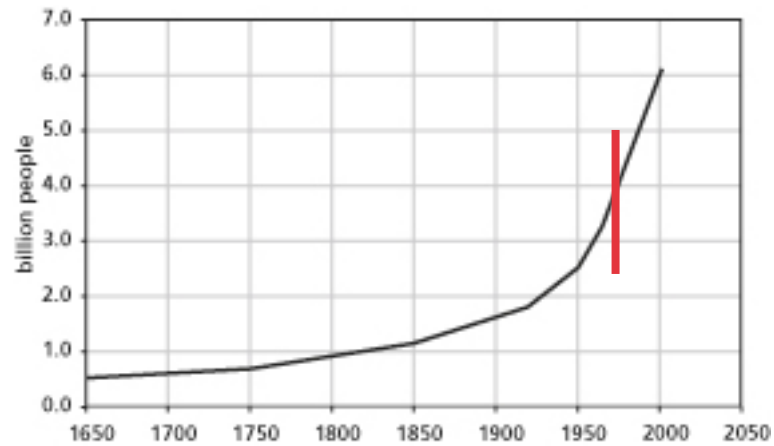
# We Were Correct

- The scale of human activities has grown to alter the physical characteristics of the globe.
- World population and industry have continued to grow exponentially, and our scenarios for 2000, made in 1972 were accurate.
- The global system has overshot its limits.
- Collapse is now occurring in over 50 countries.

Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. ... many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent....

*World Scientists' Warning to Humanity* signed by more than 1,600 scientists, including 102 Nobel laureates, from 70 countries, 1992.

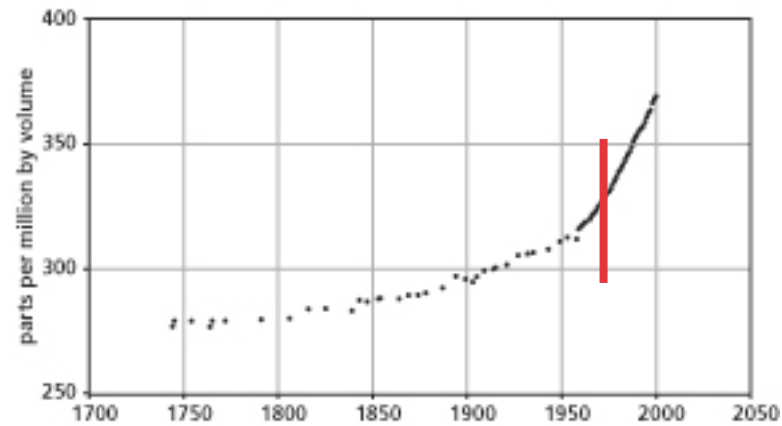
# World Population



# Industrial Production



# CO<sub>2</sub> Concentration





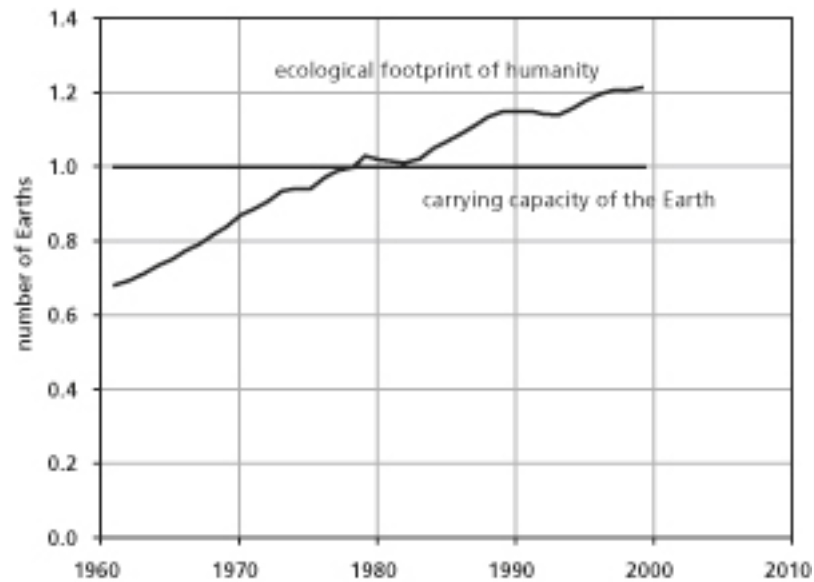
# Overshoot

- Overshoot is a common event:
  - Slipping past a stop sign in your car on ice
  - Drinking too much alcohol
  - Using your credit card too much
- Overshoot requires:
  - Rapid change
  - Limits
  - Long delays in perception and response
- Collapse requires overshoot that damages or erodes an important resource.
- Most national policies display the features that will produce collapse.

# Overshoot has Already Occured

- “Global carrying capacity” is a complex term; it depends on technology, culture, material standards, and cultural attitudes about sharing and inequality.
- But clearly there is a limit to the globe’s capacity to offer all people health, freedom, and a high material standard of living

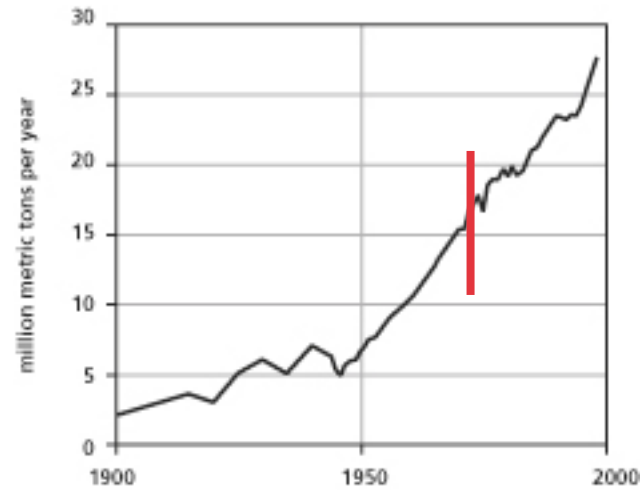
# One Indicator of Overshoot



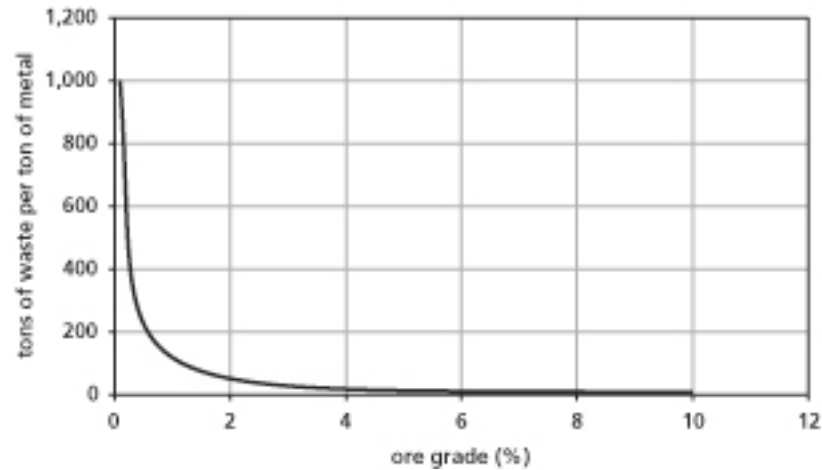
# Overshoot Affects the National Economy

- Overshoot depletes energy and resource reserves drastically increasing their capital requirements
- Overshoot makes the environment less stable
- Overshoot presents national governments with many big problems at one time - no possibility to focus on one.
- Overshoot forces declines in material standards, which is politically stressful.

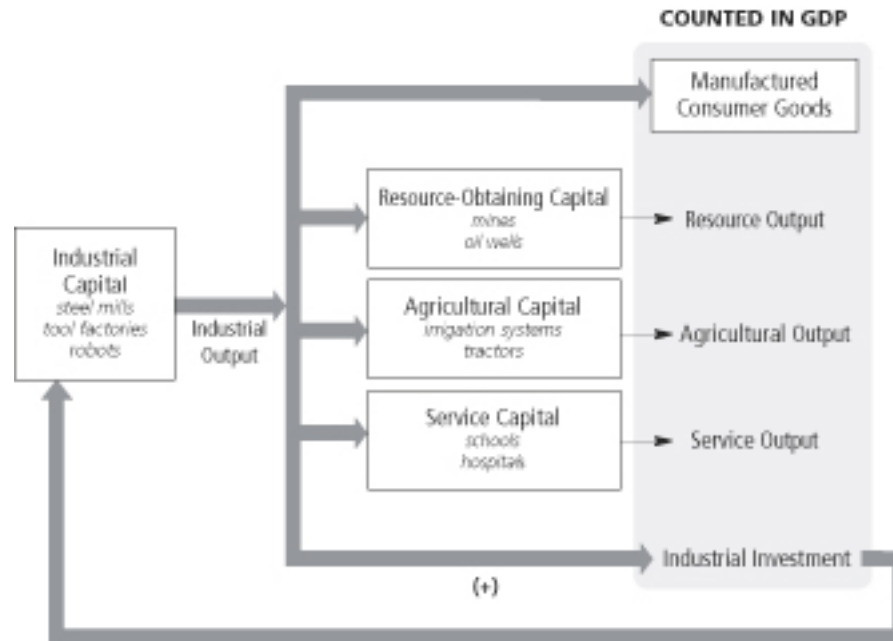
# Index of World Metals Use



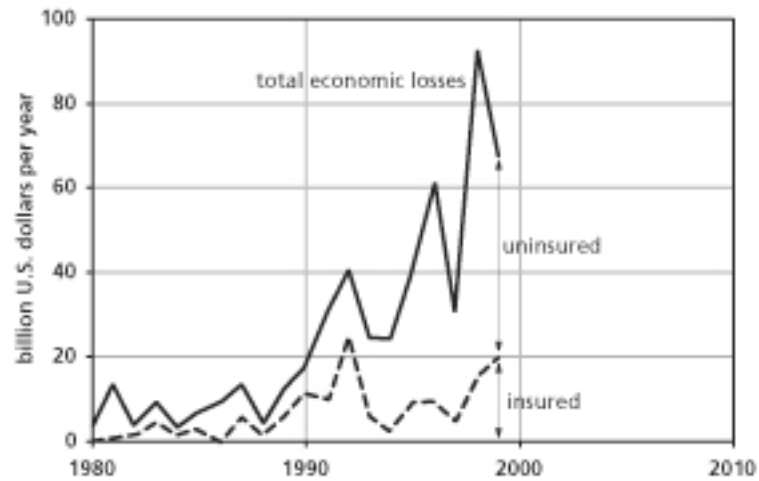
# Index of Capital to Obtain Resources



# Capital Flows

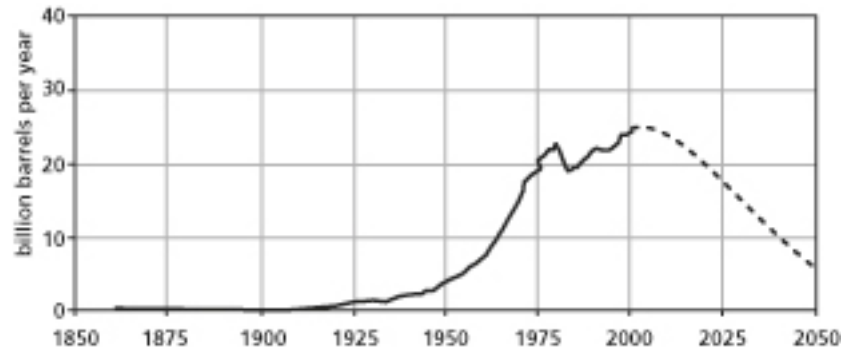


# Insurance Losses





# Global Oil Production may Peak before 2020



# Benefits to Germany from Drastic Dematerialization

- Reduced import costs.
- Reduced reliance on monopolistic suppliers, hence less conflict.
- Increased exports of products and services.
- A society more informed about global trends.
- Growth in the number, diversity, and quality of domestic jobs.

