Economic Analyses of Kyoto Protocol: Is There Life After Kyoto?

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Current international approach to climate-change policy is the Kyoto Protocol.

Major provisions:

- Protocol negotiated in 1997
  - Limiting emissions to fraction of 1990 rates.
  - Limited to high-income countries
  - Only agreed for 2008-2012 period
  - Allows trading of emissions permits among countries
- US Senate passed a resolution in 1997 by 95-0 to warn that Senate would not ratify.
- Bush Administration withdrew in 2001.
- Protocol went into effect in Feb 2005 after Russian ratification.

Concerns from economic analyses

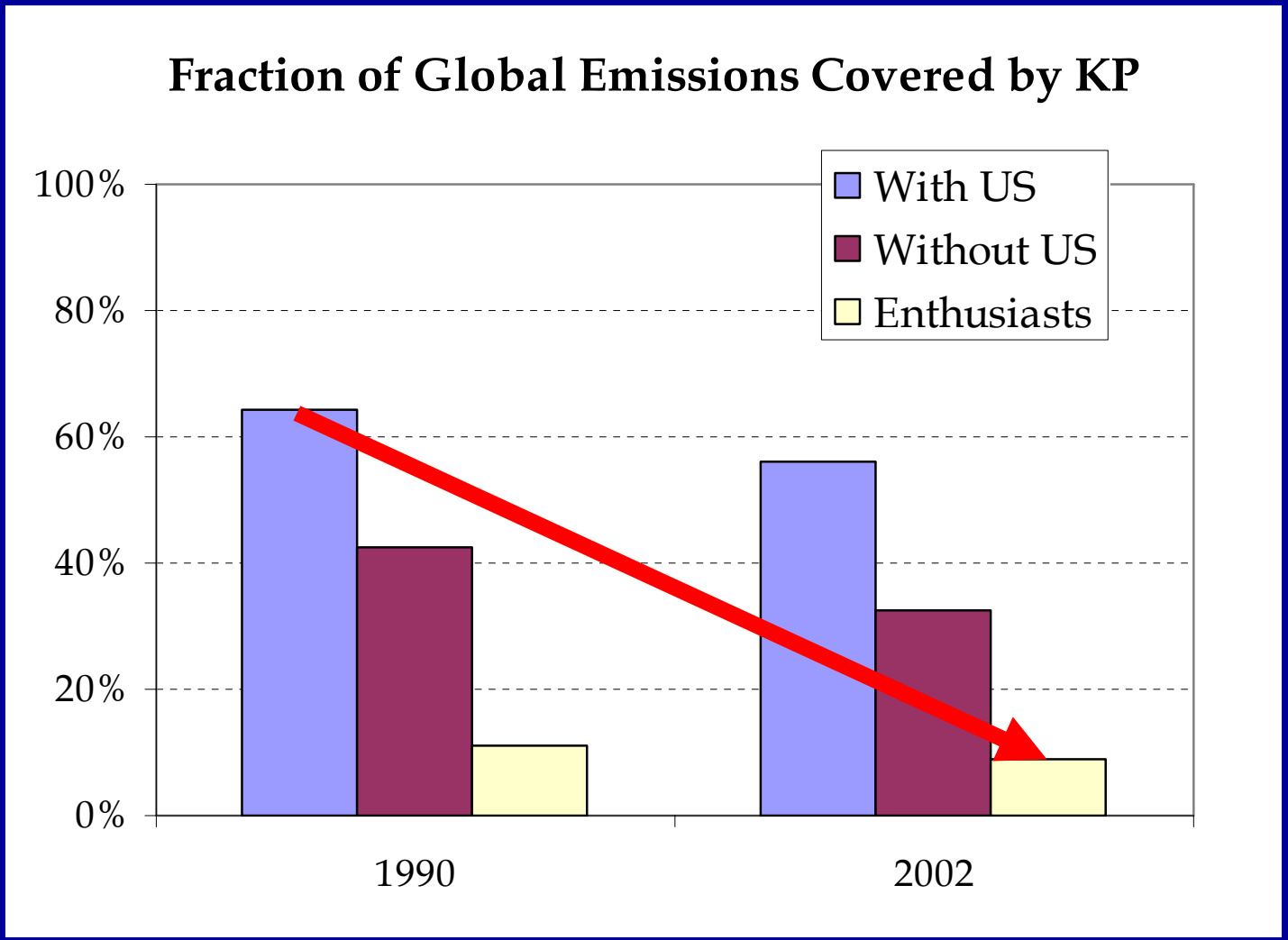
- Summary of impacts analysis
- Severe attrition in global coverage
- Inefficient tool
- Strange distribution of costs and benefits
- Emissions reductions are likely to be small
- Carbon emissions prices close to earlier projections

Overview of Impacts Analysis

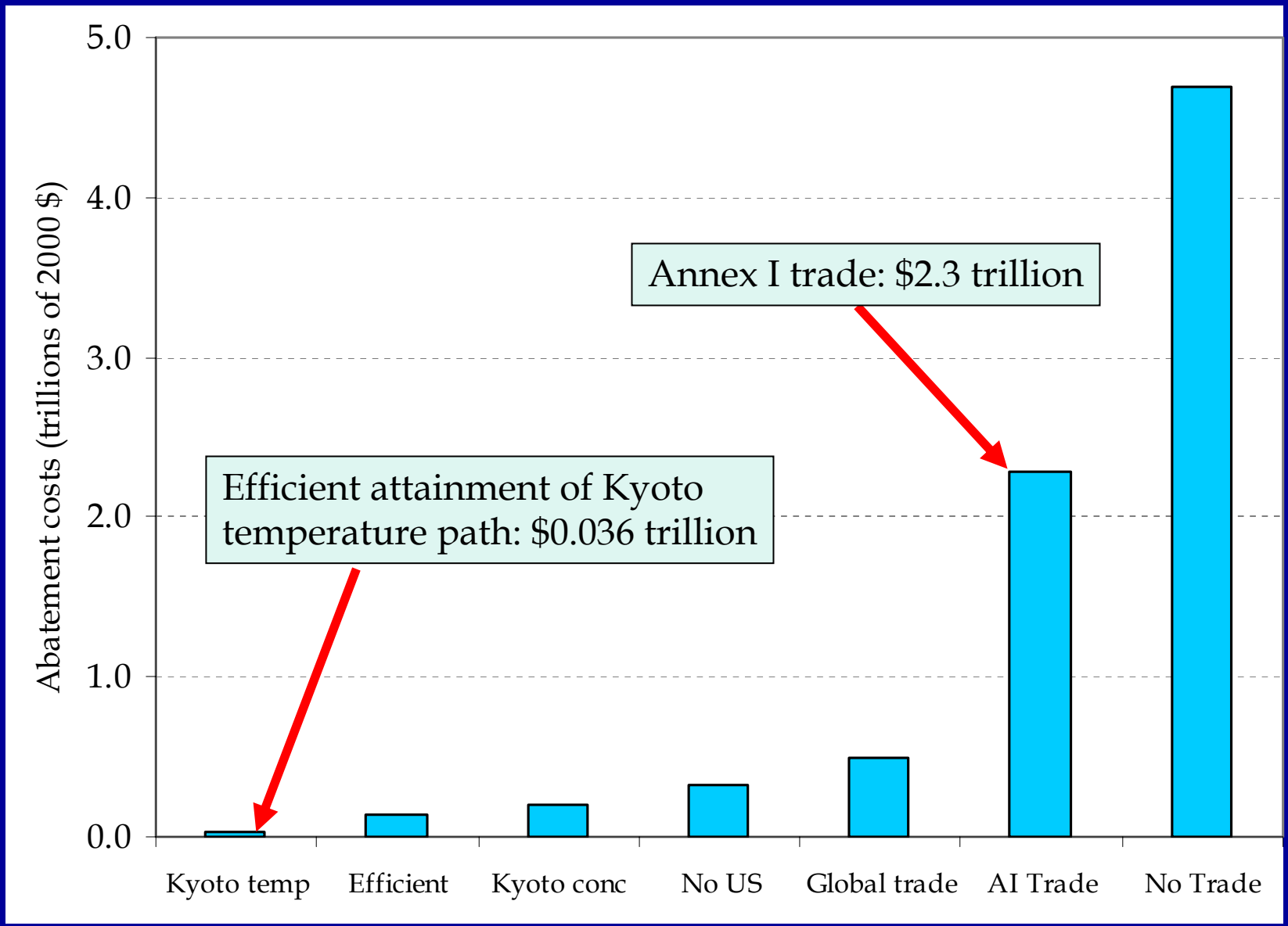
- Gradual climate change (standard approach)
  - Market sectors:
    - High-income countries: small impacts →
    - Low-income countries: mixed, possibly large impacts → to ↑
  - Non-market sectors (ecosystems, non-human elements): increasing concerns ↑
- Abrupt climate change (emerging science) ↑↑
  - Market sectors: highly uncertain: 2x to 10x GCC? ↑
  - Non-market sectors: "Dangerous"? ↑↑

(→↑↓ trend in results of analysis)

Attrition of Kyoto Protocol

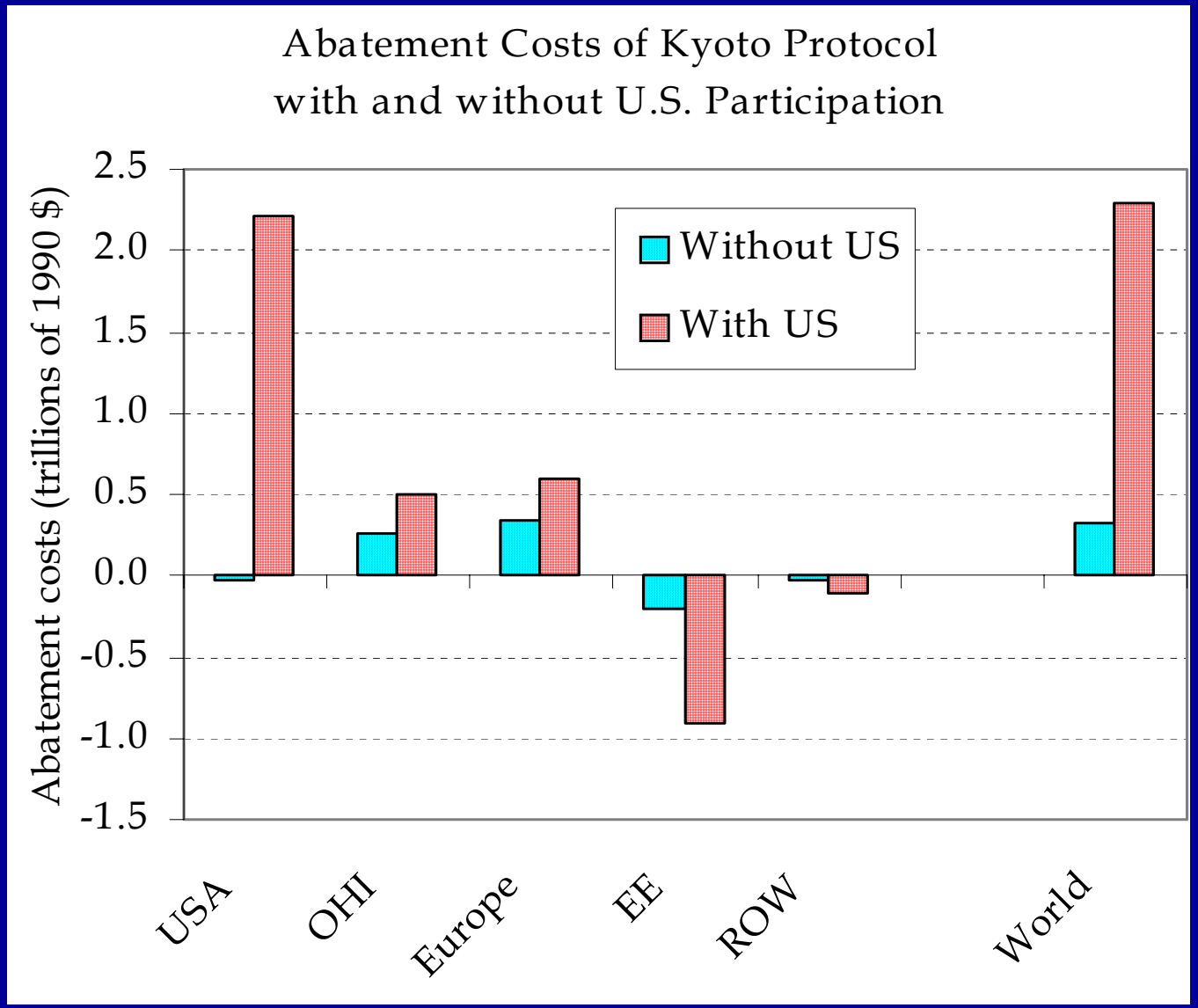


Abatement Costs for Kyoto Protocol ("Kyoto forever")



Source: W. Nordhaus, RICE model, *Science,* 2002, updated.

Winners, Losers, and Big Losers



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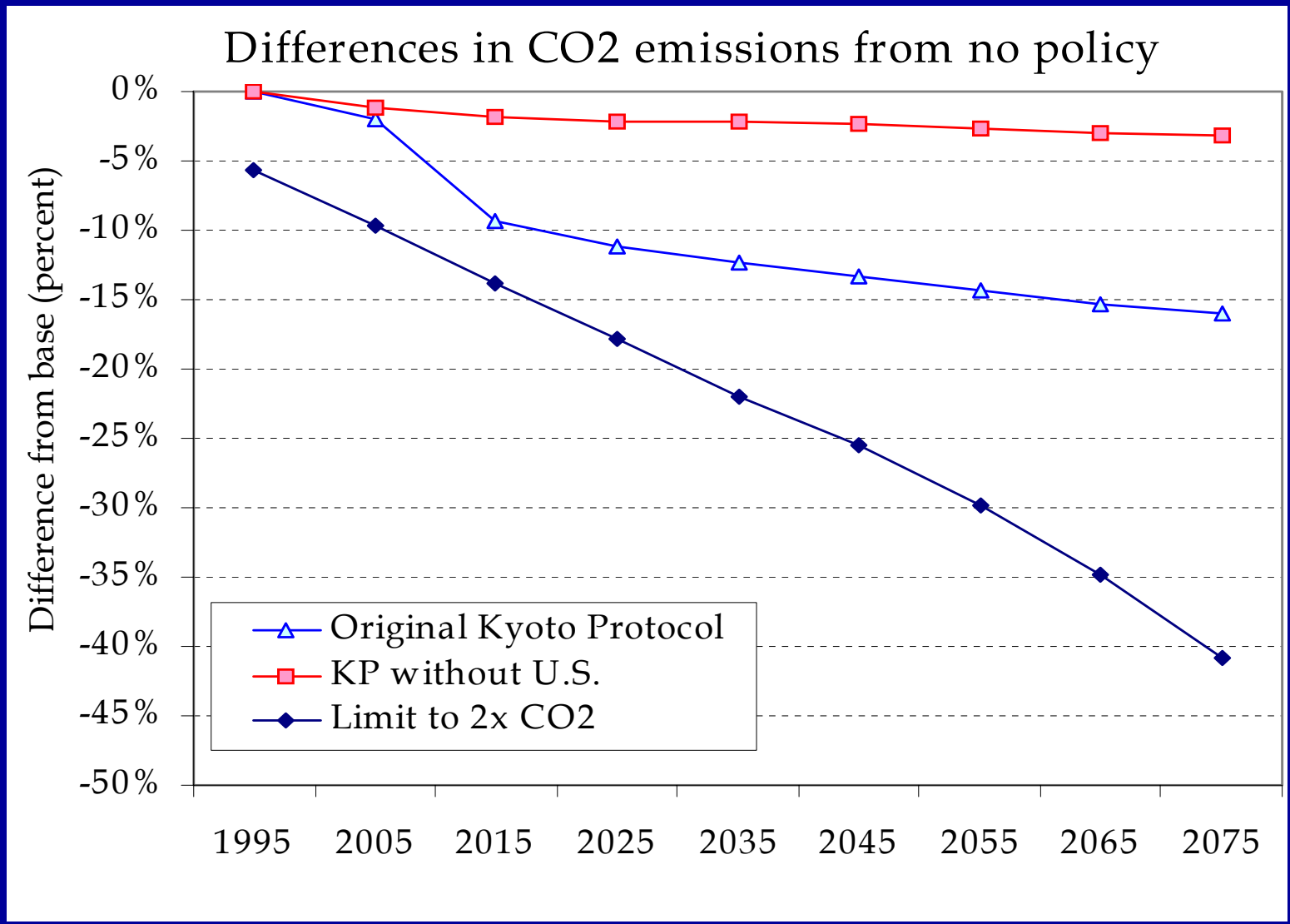
Emission Reductions Under KP Will Be Minimal



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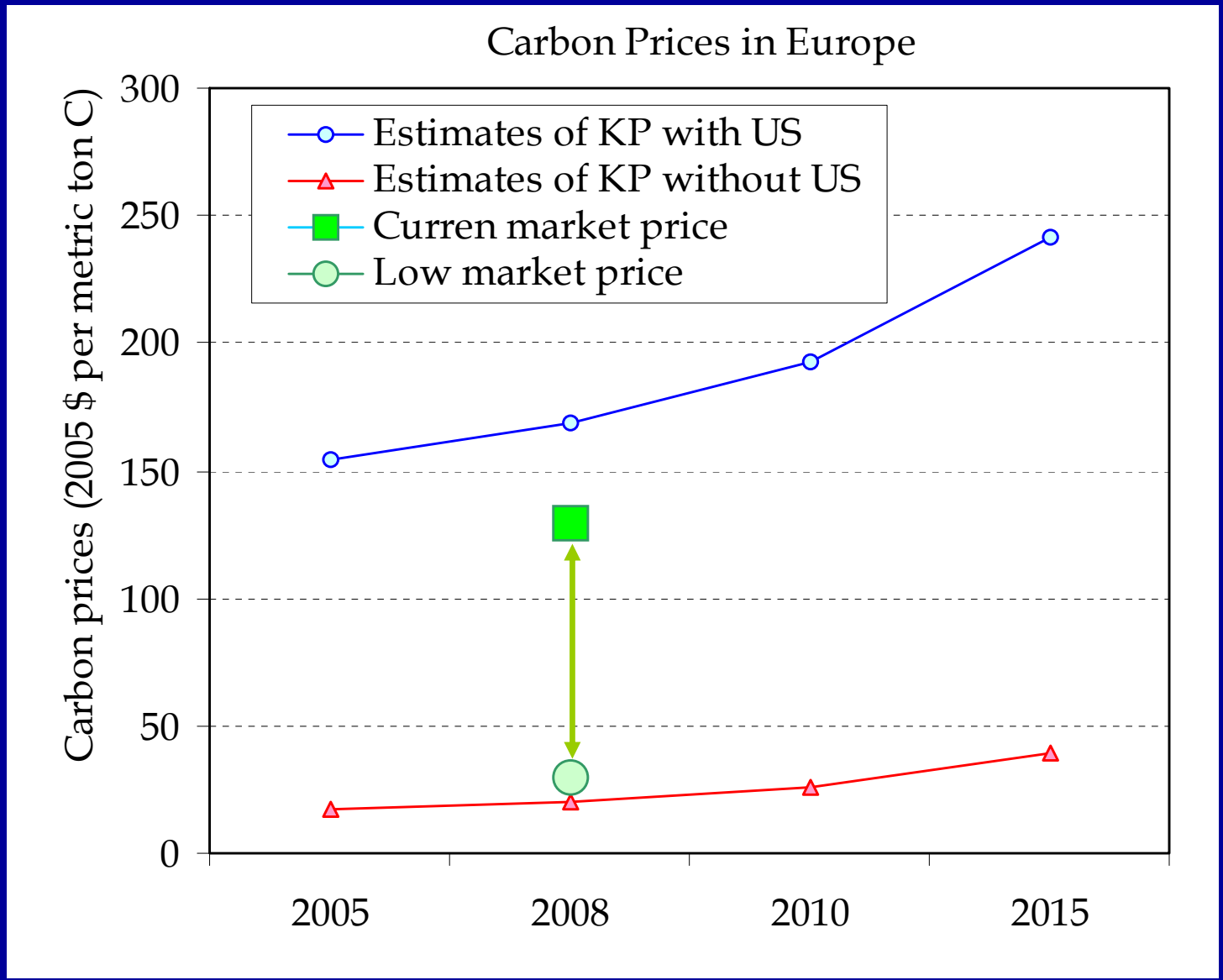
Carbon prices and earlier projections



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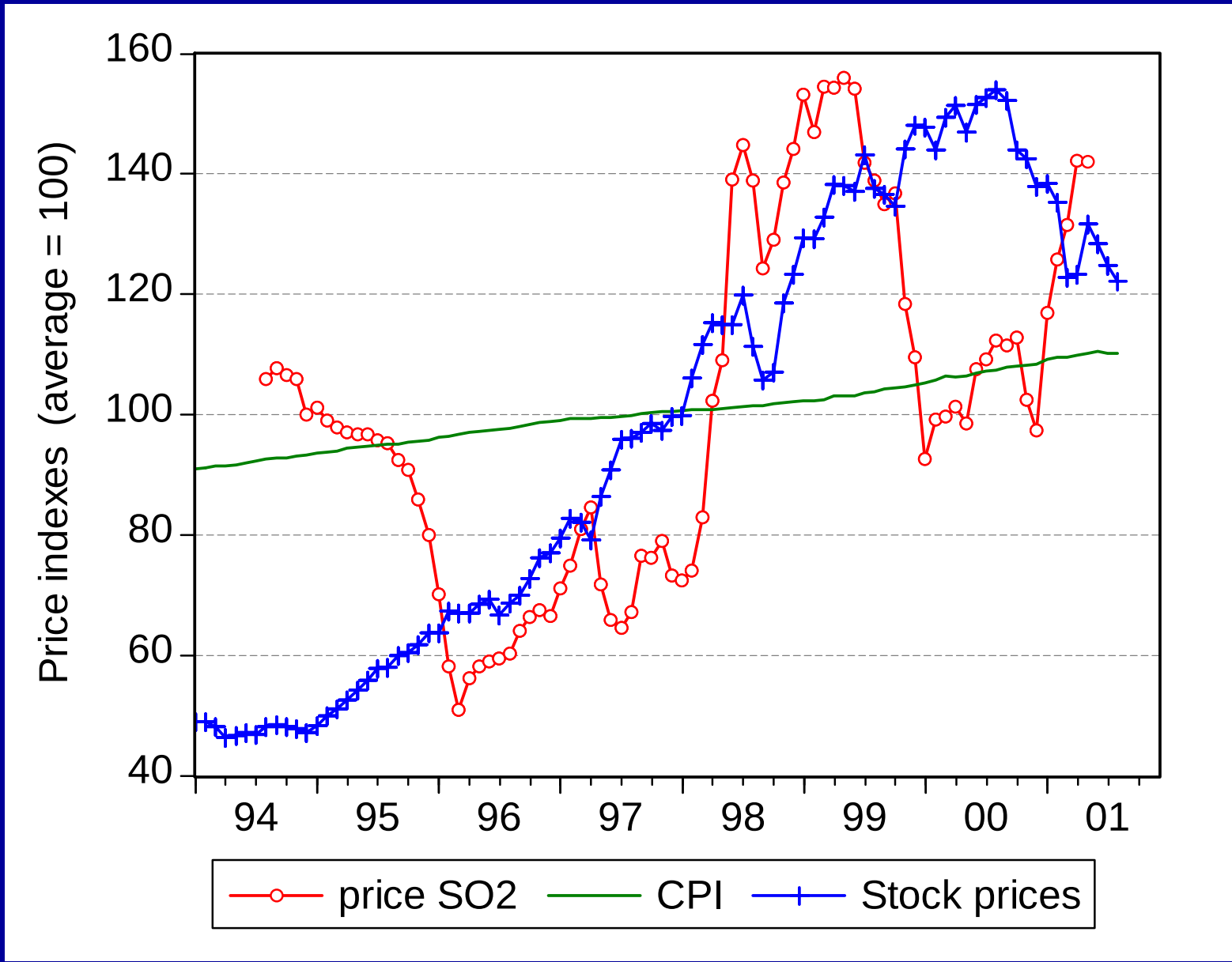
Does the Kyoto Protocol Have a Future?

- There is no connection between emissions targets and ultimate economic or environmental policy objectives.
- There is no mechanism to broaden country participation.
- There is no enforcement mechanism.
- Given elasticities, it is likely that carbon emissions rights will be very volatile (like oil prices).
- Allocating emissions rights is poor public finance.
- Given the nature of the externality, price-type controls are more efficient than quantity-type controls (the "Weitzman effect").
- Creating a new "green currency" is an invitation to corruption in developing countries and a pandemic of Enrons in high-income countries.

Prices of sulfur emissions permits are very volatile



Are there alternatives for the next round?

More effective might be "harmonized carbon tax."

- Under this approach, countries set domestic carbon taxes at uniform levels (e.g., $10 per ton).
- Alternatively, countries could comply with minimum/maximum tax.

How to make taxes more attractive politically?

- Link revenues to politically popular program such as health care or retirement.

US policies moving quickly nowhere

- McCain-Lieberman close to Kyoto mechanism, but with smaller reductions and strong ideological opposition.
- Interesting use of "civil penalties" instead of taxes/fees