

Building Flexibility into the Design and Choice of Climate Policy Instruments

Lawrence H. Goulder

Flexibility – the ability to adjust to new information and changing conditions – has a value

Three roads to flexibility:

1. “Deliberate” flexibility: Leaving policy makers’ hands free to alter to policy stringency
2. Building “automatic” flexibility in the design of specific policy instruments
3. Promoting flexibility in the production sphere

Key Message: “Navigating” is challenging because it requires delicately balancing the gains and losses associated with added flexibility

PART II: The Impacts of Climate Change on Growth and Development

Figure 6.5 a. Baseline-climate scenario, with market impacts and the risk of catastrophe.

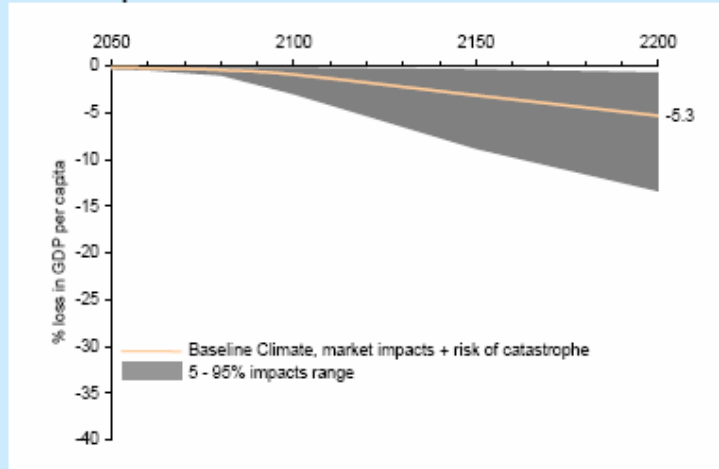


Figure 6.5b. High-climate scenario, with market impacts and the risk of catastrophe.

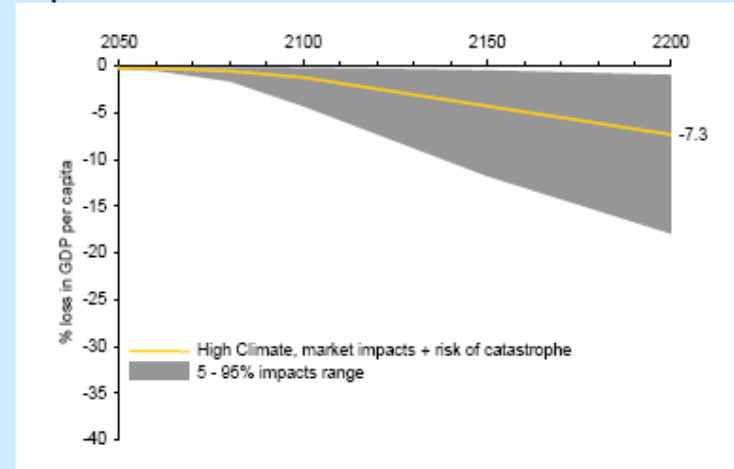


Figure 6.5c. High-climate scenario, with market impacts, the risk of catastrophe and non-market impacts.

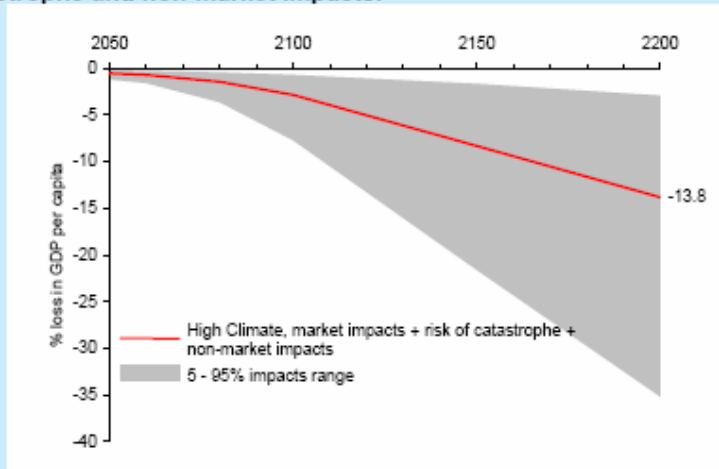


Figure 6.5d. Combined scenarios.

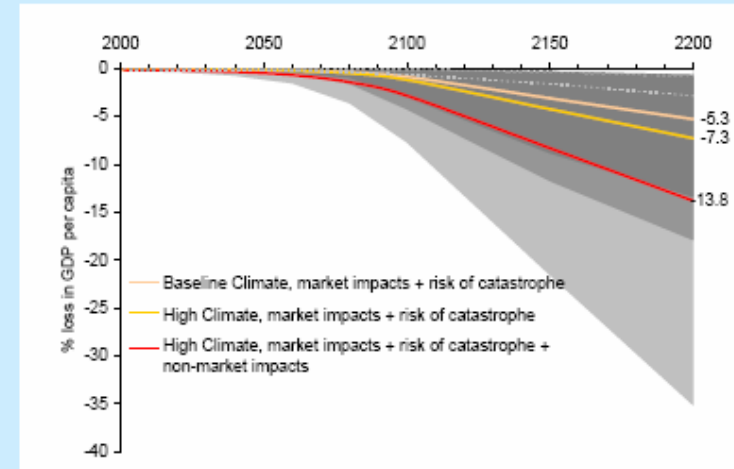
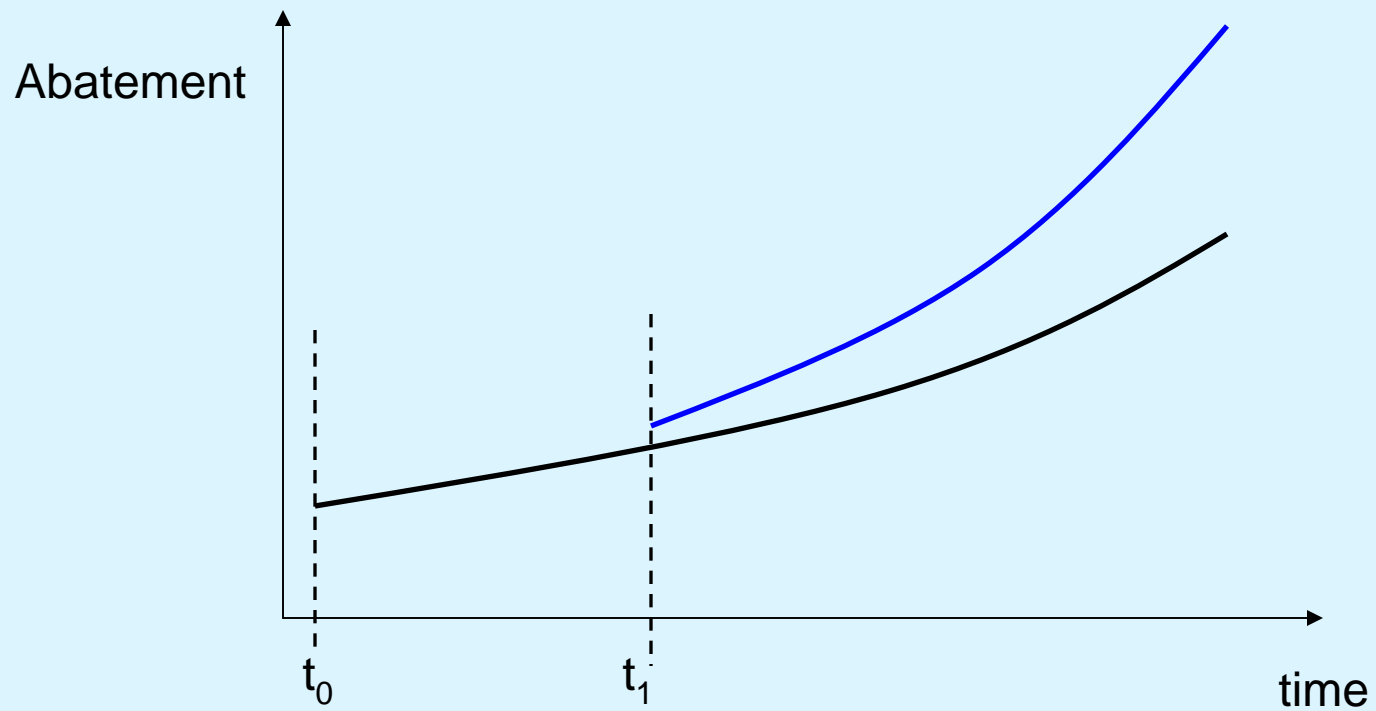


Figure 6.5a-d traces losses in income per capita due to climate change over the next 200 years, according to three of our main scenarios of climate change and economic impacts. The mean loss is shown in a colour matching the scenarios of Figure 6.4. The range of estimates from the 5th to the 95th percentile is shaded grey.

1. Flexibility in Policy Stringency



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This is promoted by:

a. shorter length of commitment period (shorter -> more flexible)

-- examples:

-- Los Angeles RECLAIM

-- Kyoto Protocol

-- tradeoff: private investors' desire for certainty (longer commitment period) vs. policy maker's desire for flexibility (shorter commitment period)

b. legislated escape clauses

-- example: Schwarzenegger and AB 32

Distinguish:

2020 Commitments

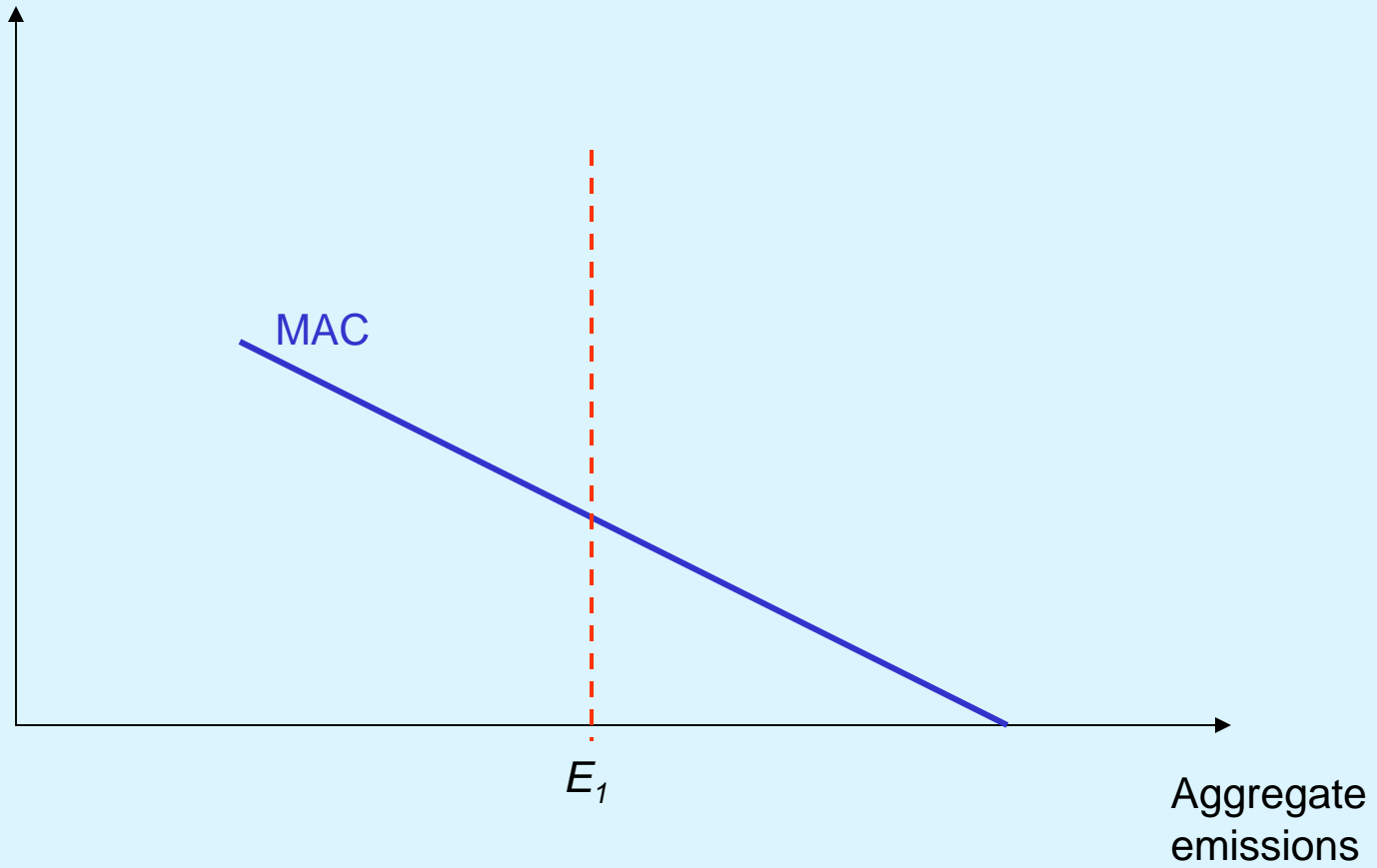
2050 Aspirations

2. Flexibility Built into the Selected Instrument

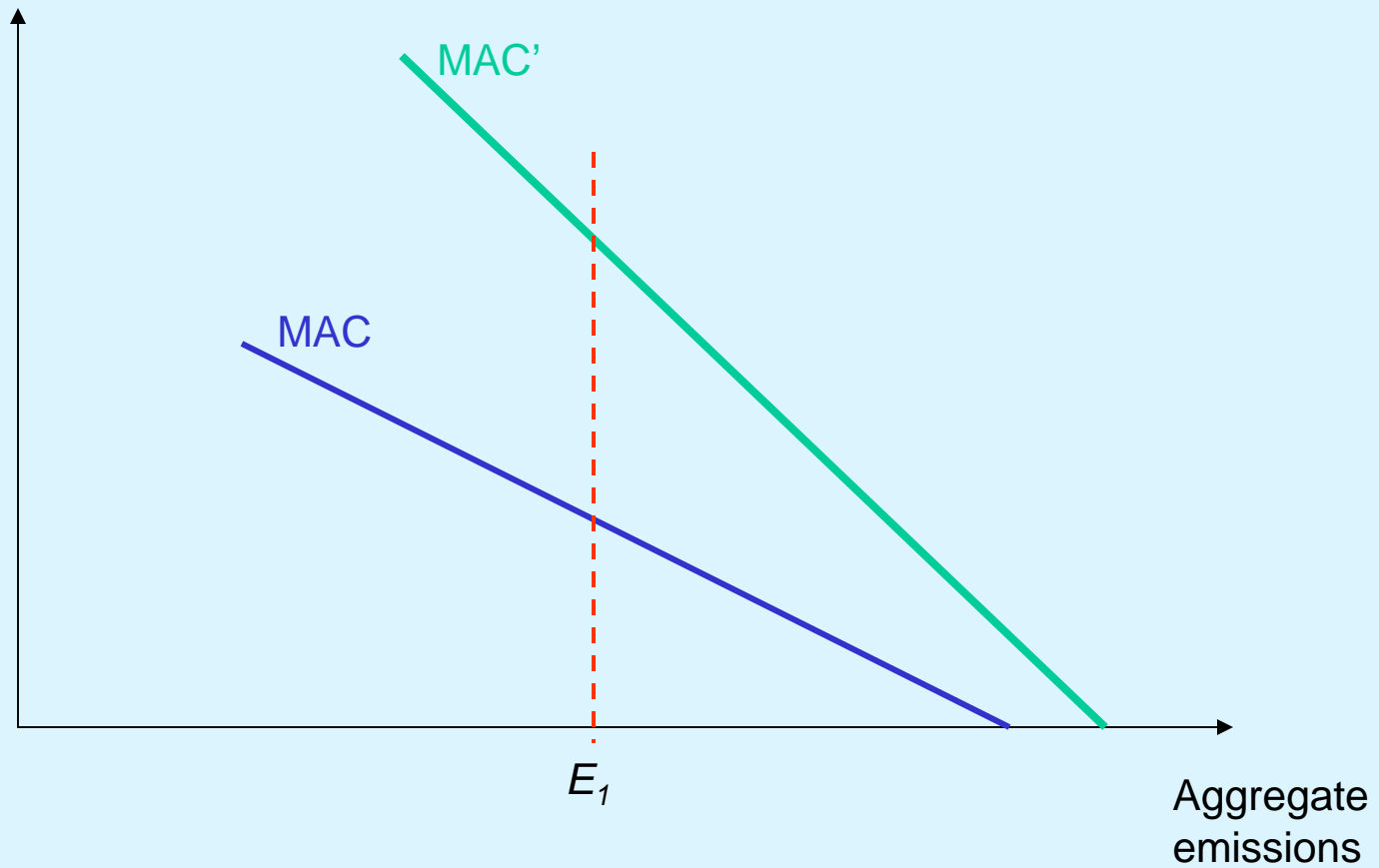
Examples under cap and trade:

- price ceiling (“safety valve”)

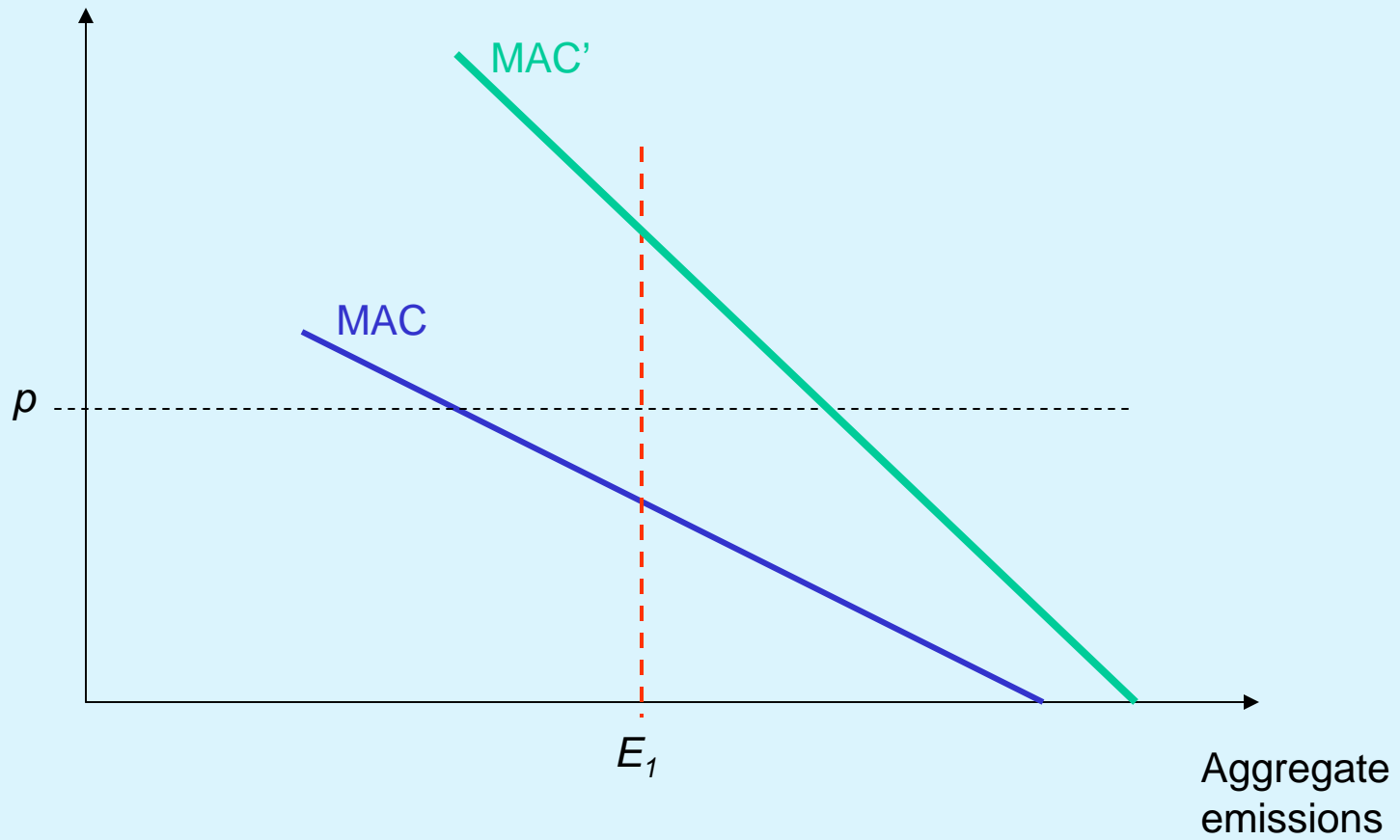
Safety Valve



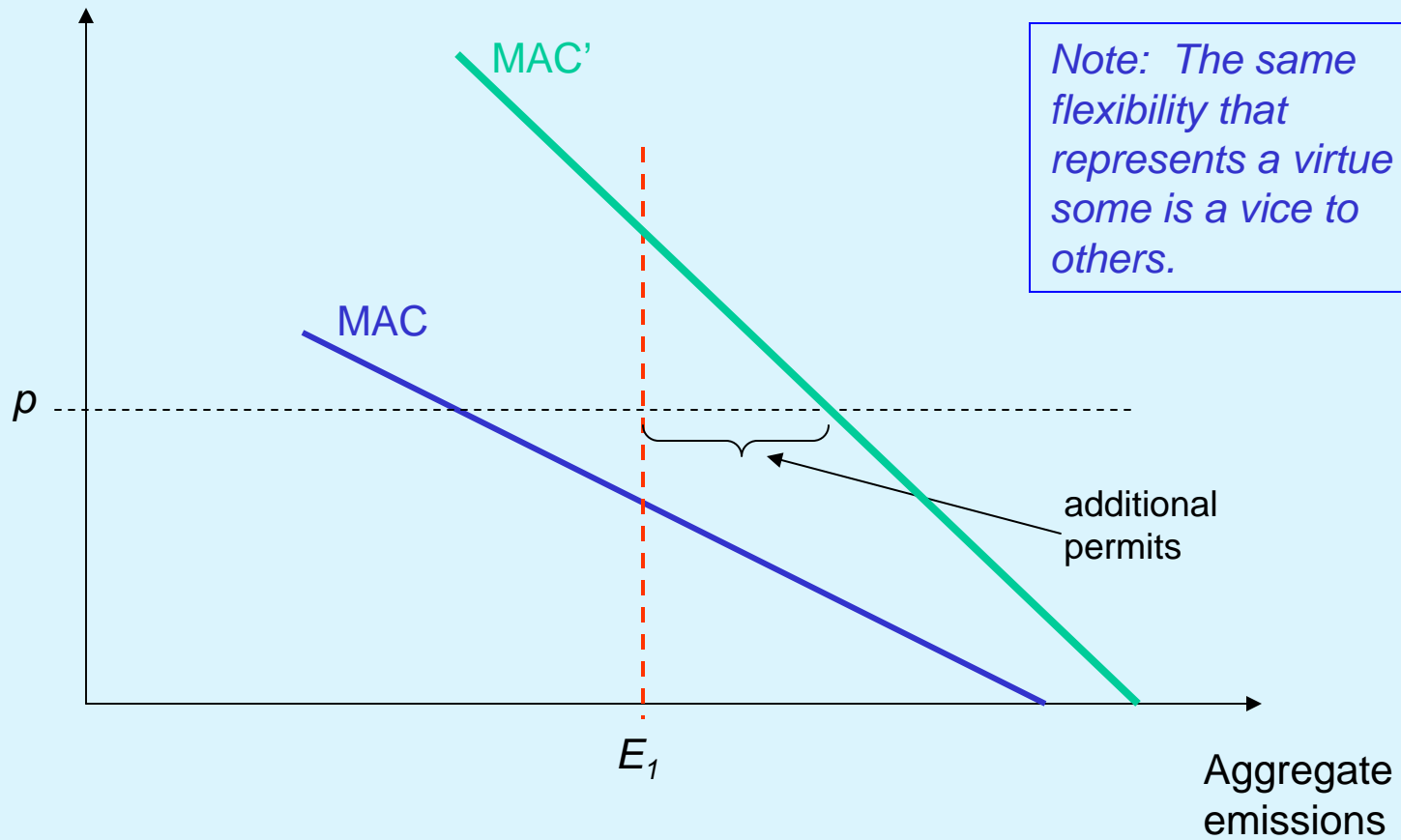
Safety Valve



Safety Valve



Safety Valve



2. Flexibility Built into the Instrument

Examples under cap and trade:

- price ceiling (“safety valve”)
- price floor
- auctioning vs. freely allocating allowances
- intensity target (emissions/GDP) rather than absolute target (emissions)

3. Flexibility in the Production Sector

Shorter-lived capital promotes such flexibility

- > more frequent turnover of capital stock
- > greater ability to respond to new information, such as:
 - speedier arrival of a new, low-carbon technology
 - scientific information that damages from CO₂ emissions greater than previously thought

Public-sector investments (such as infrastructure) should favor faster turnover, other things equal

What about private sector investments?

- if anything, private sector might bend too far in direction of short-lived capital (risk aversion, inability to pool risks)

Challenges to Public Policy

1. In promoting flexibility in policy stringency:
 - Striking a good balance between goals of (1) keeping policy makers' hands free and (2) providing clear, fixed policy commitments to the private sector
2. In building flexibility into policy instruments:
 - Determining what type of flexibility is most important (emissions flexibility or price flexibility?)
3. In promoting a flexible production sector:
 - Reconciling (1) the attractions of very long-lived capital with (2) the flexibility advantages of short-lived capital. (Private sector may be biased toward too much flexibility!)