

Efficient public adaptation to climate change

– An investigation of drivers and barriers
from a Public Choice perspective

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Outlook

1 Motivation

2 A Public Choice approach for studying barriers to efficient public adaptation

2.1 Efficiency in terms of extent

- a) *Descriptive analysis*
- b) *Normative analysis*
- c) *Positive analysis*

2.2 Efficiency in terms of structure

- a) *Descriptive analysis*
- b) *Normative analysis*
- c) *Positive analysis*

2.3 Efficiency in terms of organisation

- a) *Descriptive analysis*
- b) *Normative analysis*
- c) *Positive analysis*

3 Conclusions

1 Motivation

- Adaptation policy is at an early stage and about to pick up pace – many countries have put adaptation on the political agenda (PEER 2009).
- Need for scientific support – so far: strong normative focus of the economic science (Agrawala et al. 2011).
- Why positive science/Public Choice (application of economic theory to the study of politics)?
- **Self-interest-driven behaviour** as major source of barriers in any political field of action – particularly in adaptation policy:

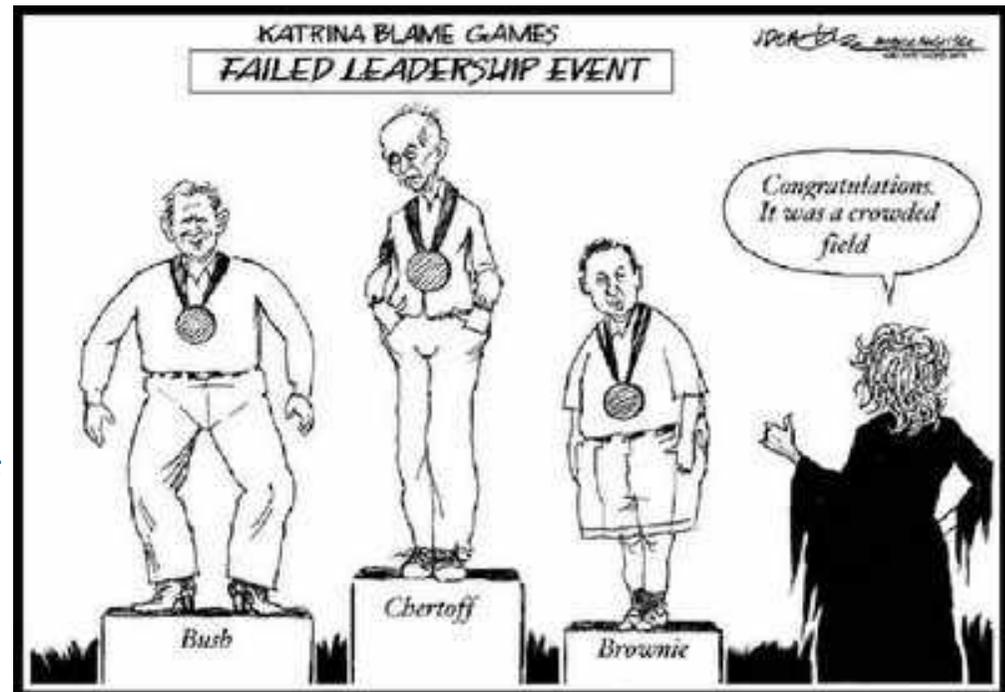
- No clear-cut success-metric and framing
- No clear-cut allocation of budget and responsibilities

Scope
for

- **Manipulation**
- **Exertion of influence**

1 Motivation

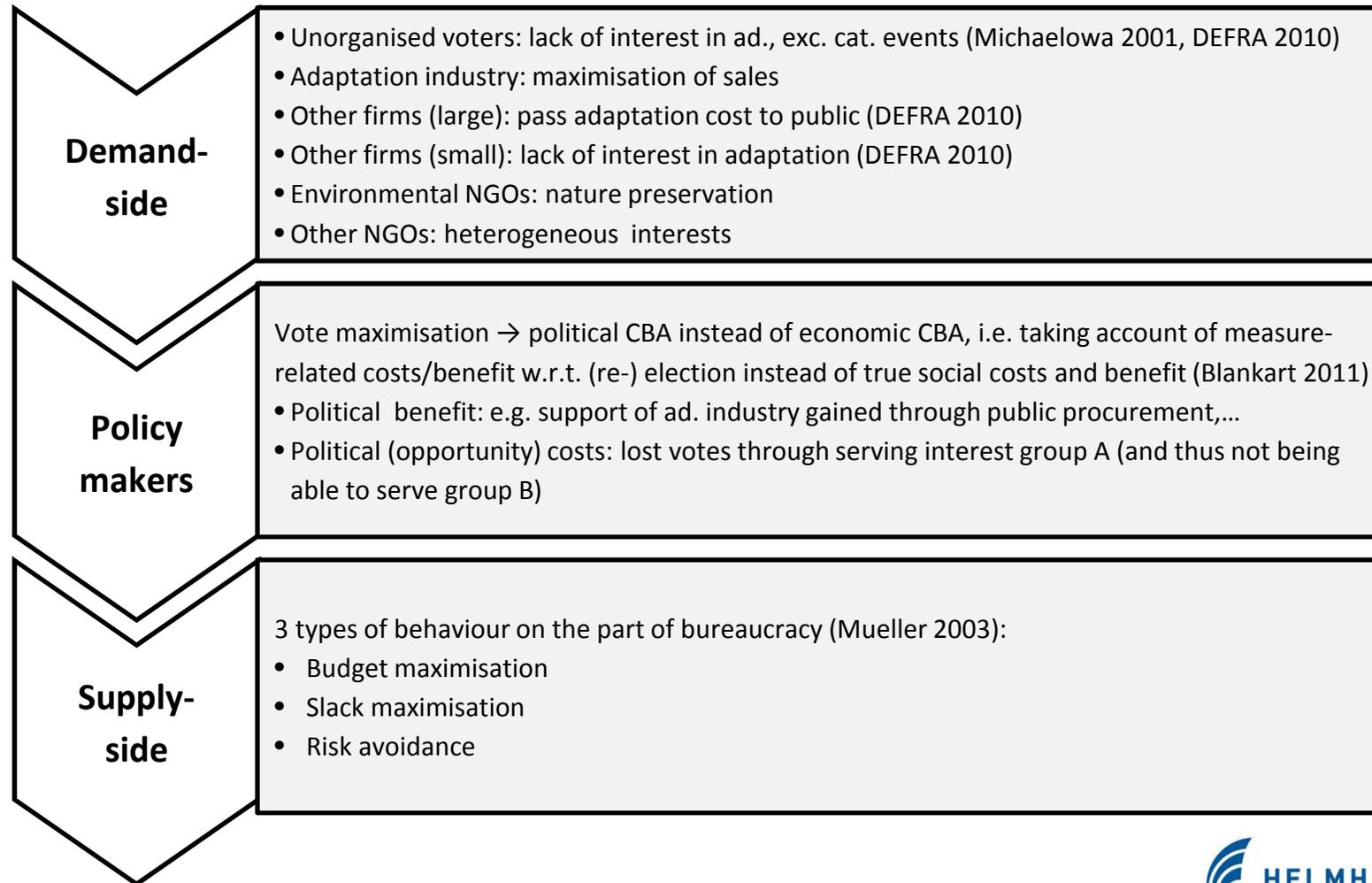
- Some slight empirical evidence: govt. failure in case of Hurricane Katrina, 2005 (“reactive public adaptation”)
- Sobel & Leeson (2006):
 - Risk avoidance, over cautiousness (type-two error)
 - Political manipulation of relief
 - Manipulation of information
 - Glory seeking
 - (other org. problems)



- Main goal of this paper: Providing a broad conceptual Public Choice framework in order to study barriers to efficient public adaptation for the case of representative democracy
 - Revealing basic barriers and raising consciousness
 - Making a rough estimate on the barriers' impacts
 - Creating a sound basis for further research

2 Public Choice approach and framework

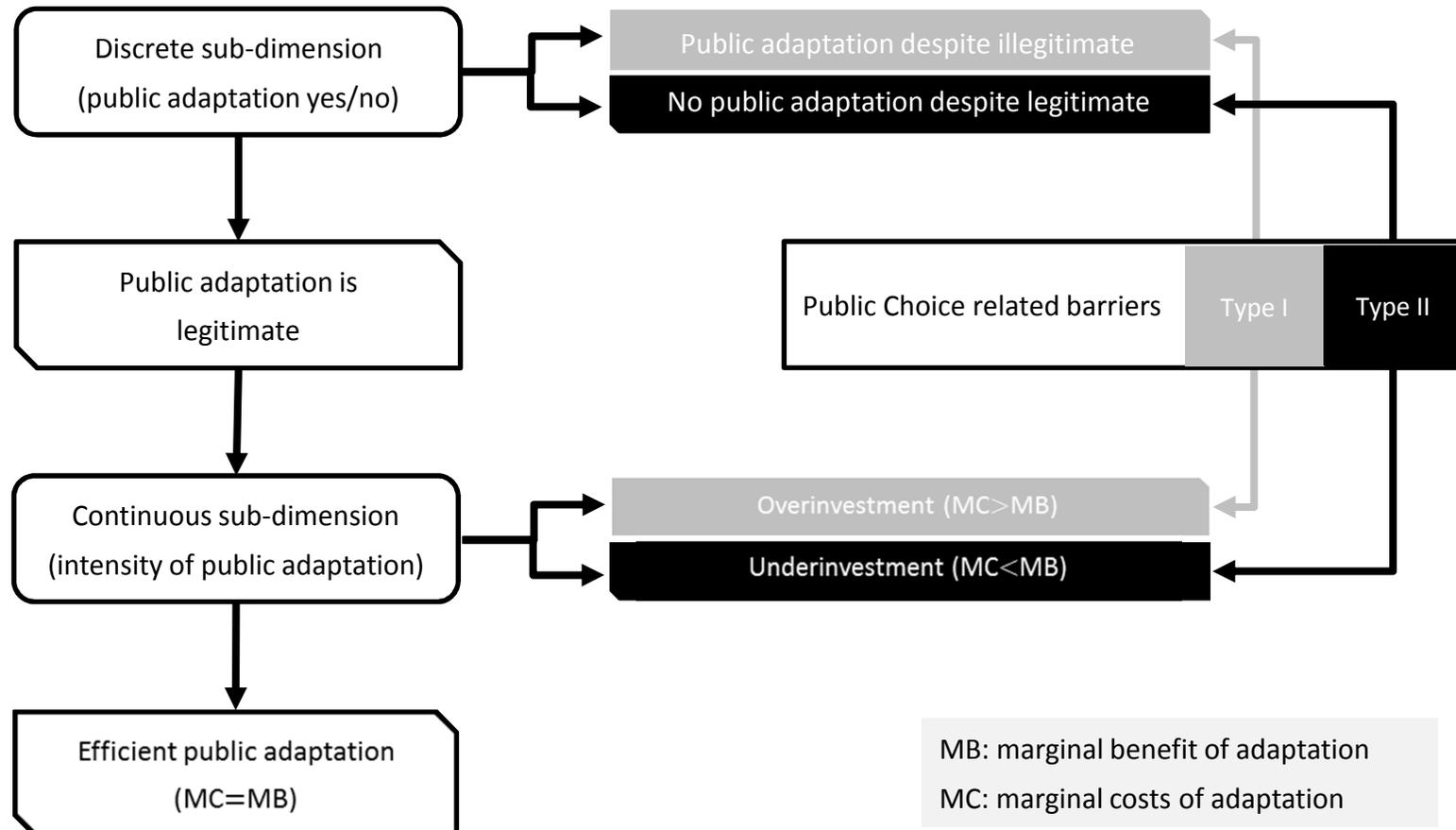
The 'market' of public adaptation – actor groups and basic self-interests
(mitigation is faded out for the sake of simplicity)



Impact on the 3 efficiency dimensions
(extent, structure, organisation)

2.1 Efficiency in terms of extent

a) Descriptive analysis

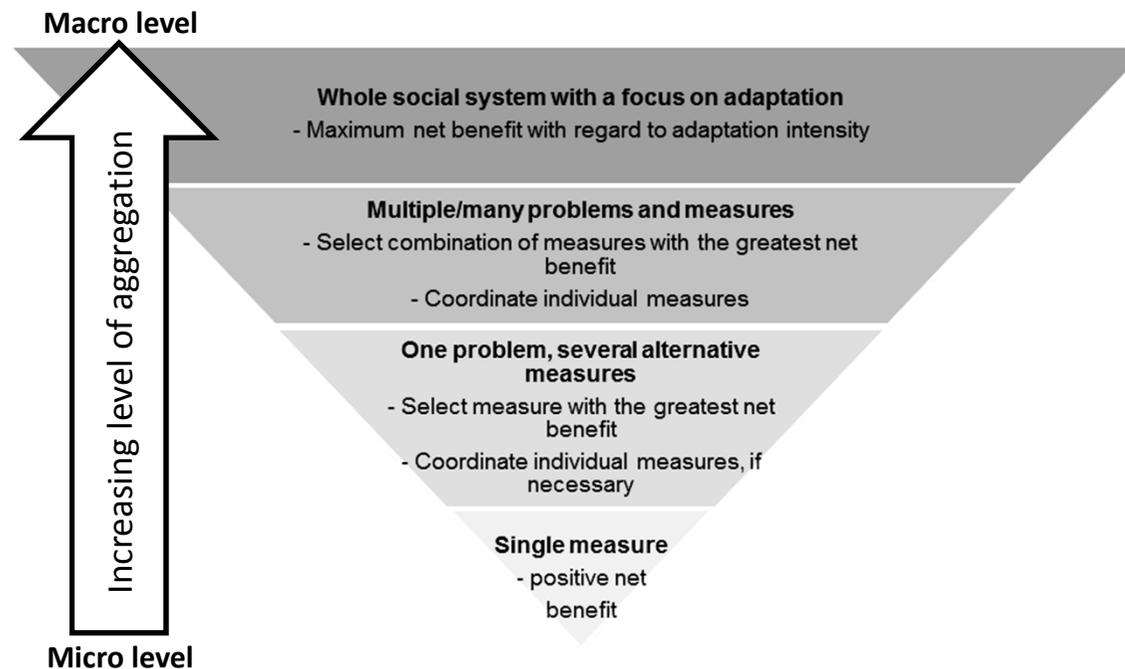


- [Special case: Extent of public emergency relief]

2.1 Efficiency in terms of extent

b) Normative analysis

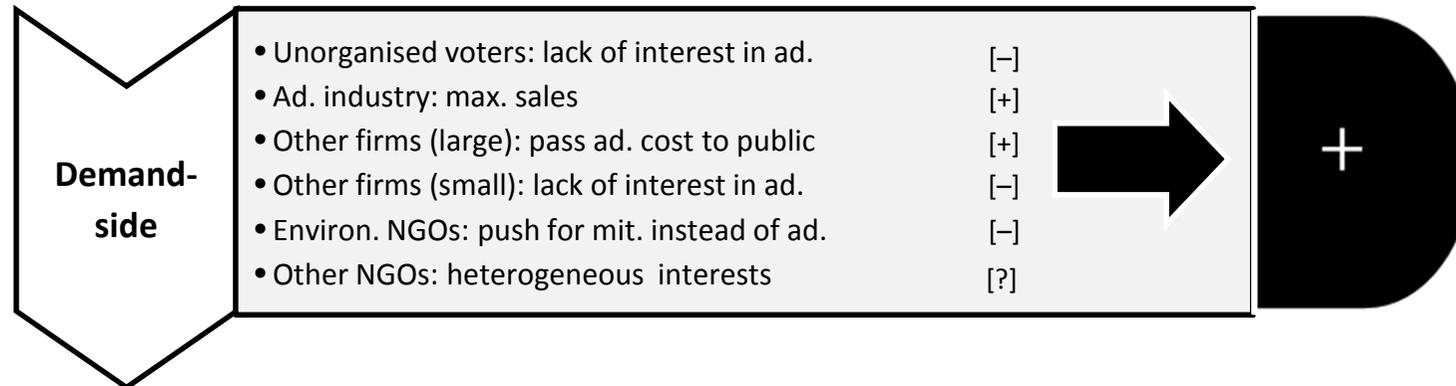
- **Discrete sub-dimension** (public vs. private adaptation): theory of market failure
- **Continuous sub-dimension**: maximise social net-benefit of adaptation → Precise problem depends on adaptation context/level:



- **Special case: Emergency relief** should be restricted to essential needs and be kept uncertain in order to provide sufficient incentives for private actors to cover insurance or engage in self-prevention (Raschky et al. 2012).

2.1 Efficiency in terms of extent

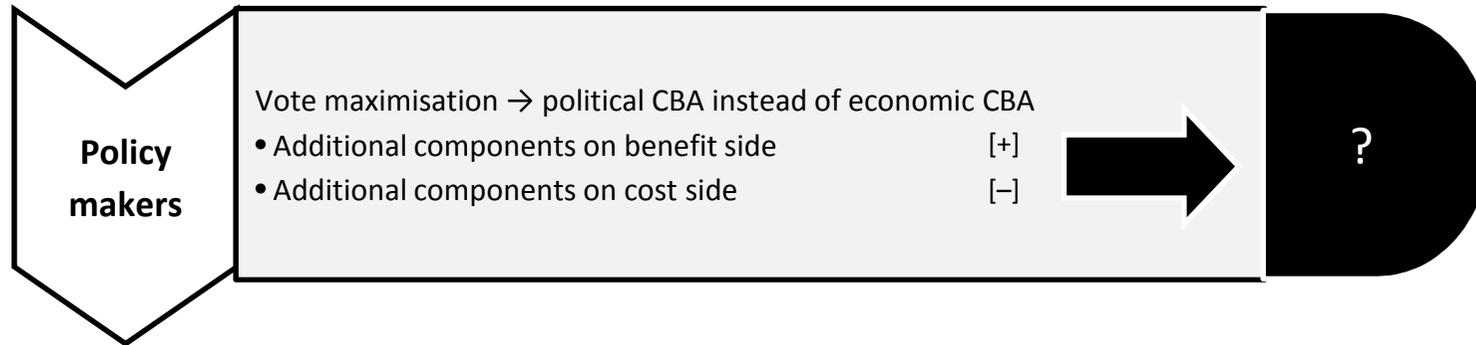
c) Positive analysis



- Organised groups exert influence through
 - Direct financial support for candidates/parties to fund informative or persuasive campaigns (Mueller and Stratmann 1994)
 - Lobbying, i.e. one-way transfer of information w.r.t. preferences or states of the world (Milgrom and Roberts 1985)
 - Which interest group is likely to prevail? → Olson (1971): “capability of getting organised” is strengthened through
 - Small group size
 - Strong financial basis
 - Clear goals
 - Homogeneous preferences
- Dominating influence of providers of ad. infrastructure and other large firms

2.1 Efficiency in terms of extent

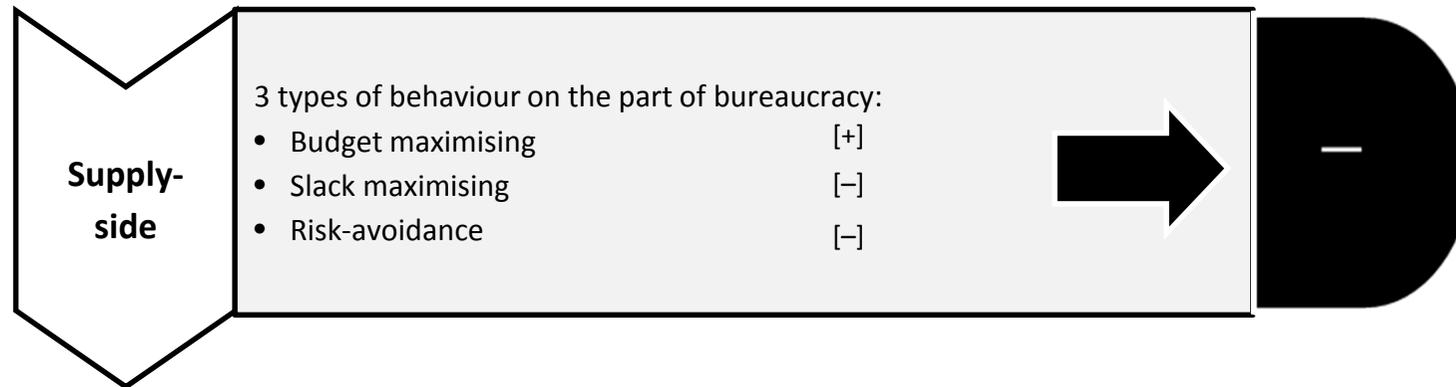
c) Positive analysis



- Clearly, political benefit components induce type I barriers, while political costs induce type II barriers.
- Aggregate distortion depends on nature of the project and the politicians' expectations about the project's influence on voting behaviour.

2.1 Efficiency in terms of extent

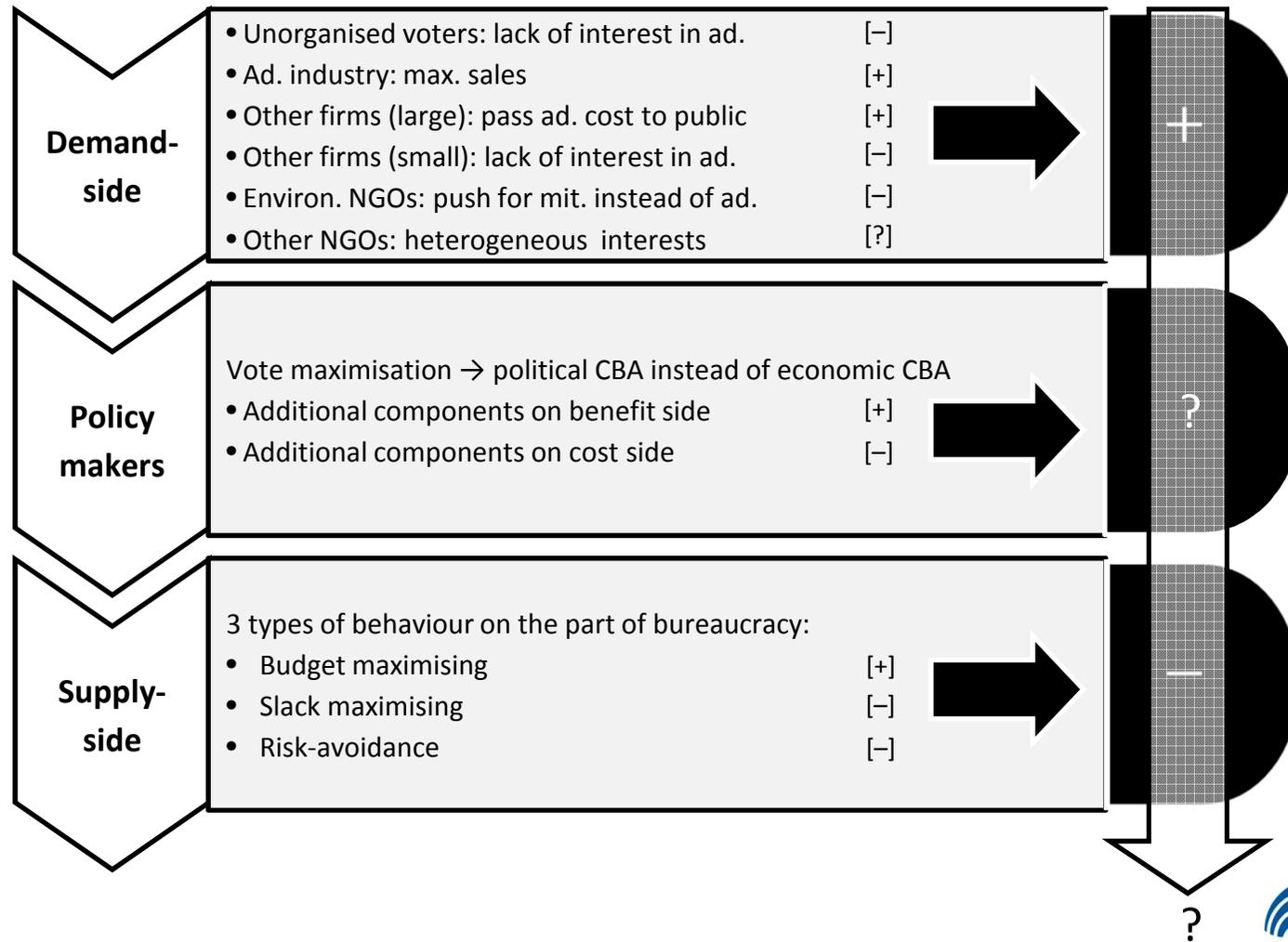
c) Positive analysis



- **Basic assumption** of bureaucracy theory (Niskanen 1971):
 - Bureau is monopolistic supplier
 - Its cost function is private information
 - Take-it-or-leave it (budget-) proposals to government
 - **Budget maximisation**: rent extraction by pushing through higher output levels
 - **Slack maximisation**: rent extraction by operating at increased production costs
 - **Risk-avoidance**: rejection of risky projects that would have been enforced by the government if perfect monitoring was possible without cost
- **Guess**: due to high uncertainty involved with adaptation projects, slack maximising and risk avoiding behaviour plays a dominant role.

2.1 Efficiency in terms of extent

c) Positive analysis



2.1 Efficiency in terms of extent

c) Positive analysis – Special case of emergency relief

Demand side:

- Strong call for relief, esp. when combined with intense reporting in the media.

Policy makers:

- Clear trend to give in to the public pressure (especially when elections are due).
- Strategic allocation of relief w.r.t. (re-election)
- Glory seeking hampers private relief

Supply side:

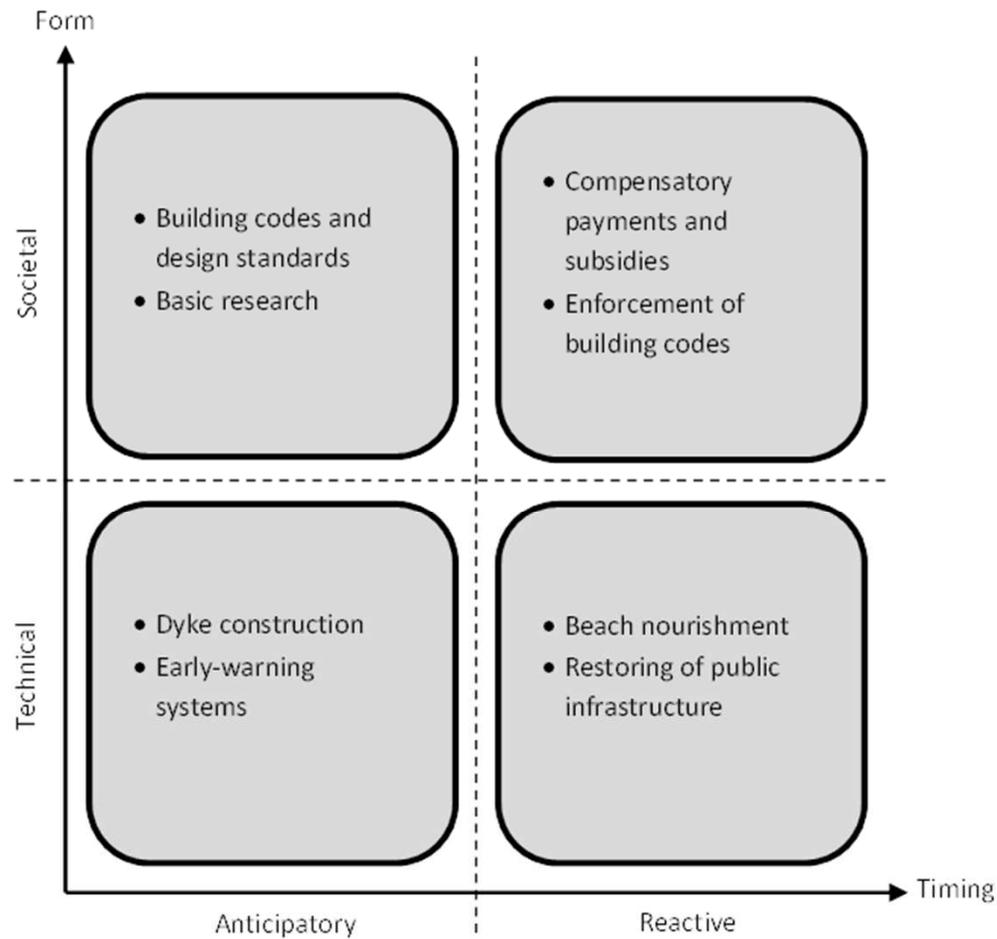
- Budget max. suggests overstating the need for public relief (e.g. through local authorities).
- Slack max. and risk avoidance may weaken this trend.

→ **Overall trend:**

- **Excess and misallocation of public relief.**
- **Relief schemes indeed are kept uncertain (Rascky et al. 2012), but possibly rather for facilitating flexible adjustments of relief w.r.t. the closeness of elections than for limiting crowding out.**

2.2 Efficiency in terms of structure

a) Descriptive analysis



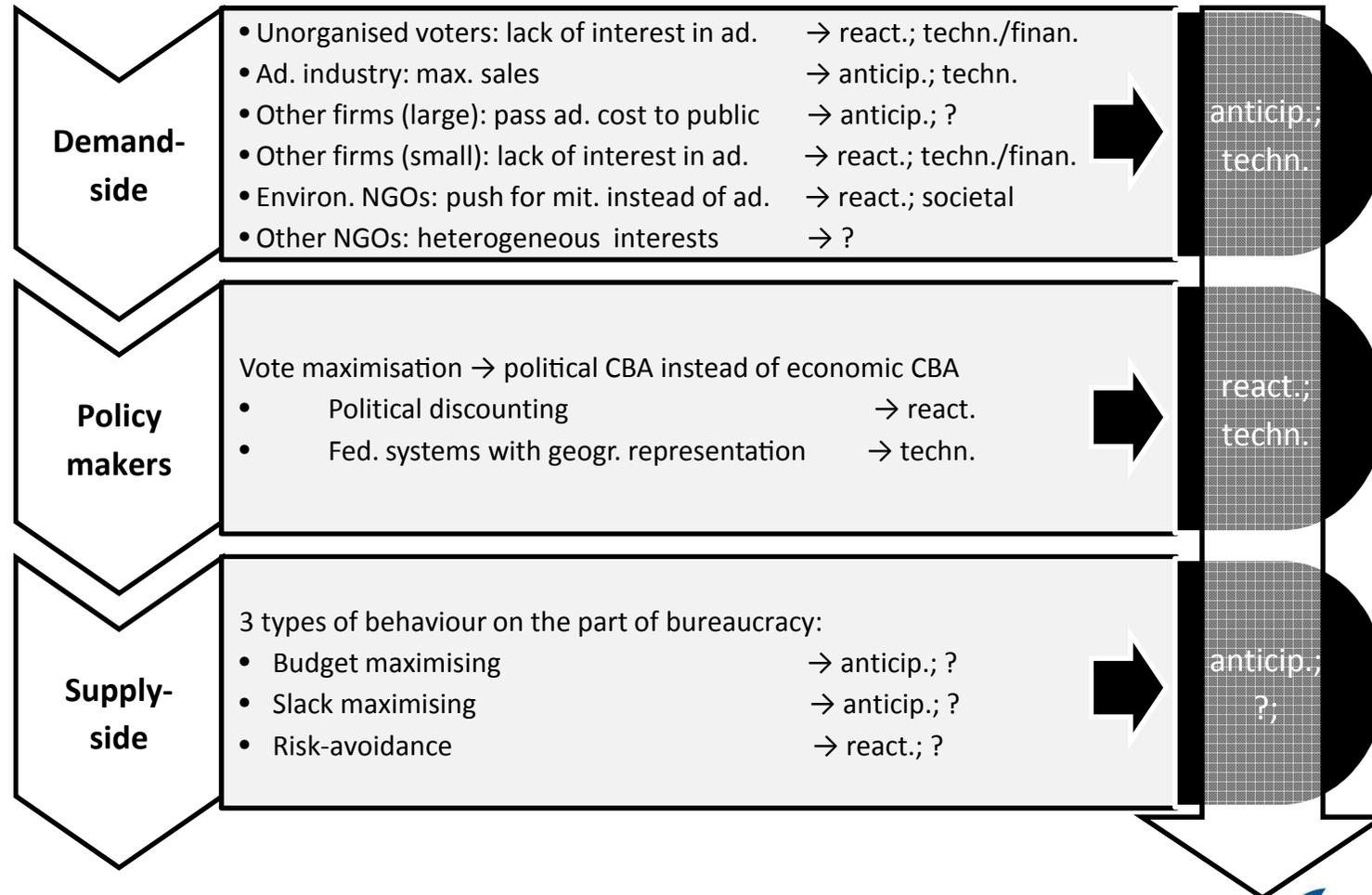
2.2 Efficiency in terms of structure

b) Normative analysis

- **Timing** (Fankhauser et al. 1999, Mendelsohn 2000)
 - Basic intertemporal trade-off: adaptation should be postponed as long as associated benefits (avoided investment costs) are greater than the associated costs (increased climate change damages).
 - “Balanced mix” of anticipatory (sectors with high capital intensity, irreversibilities) and reactive measures (low capital intensity).
- **Form**
 - No explicit recommendation; however, due to context-dependent and heterogeneous character of adaptation, a “balanced mix” of measures is required to address the needs across the different sectors.
 - Moreover, such a mix is also desirable within a sector due to increasing marginal costs/decreasing marginal returns of specific adaptation measures.

2.2 Efficiency in terms of structure

c) Positive analysis



Timing: ?(depending on pol. discount rate);

Form: techn.

2.3 Efficiency in terms of organisation

a) Descriptive analysis

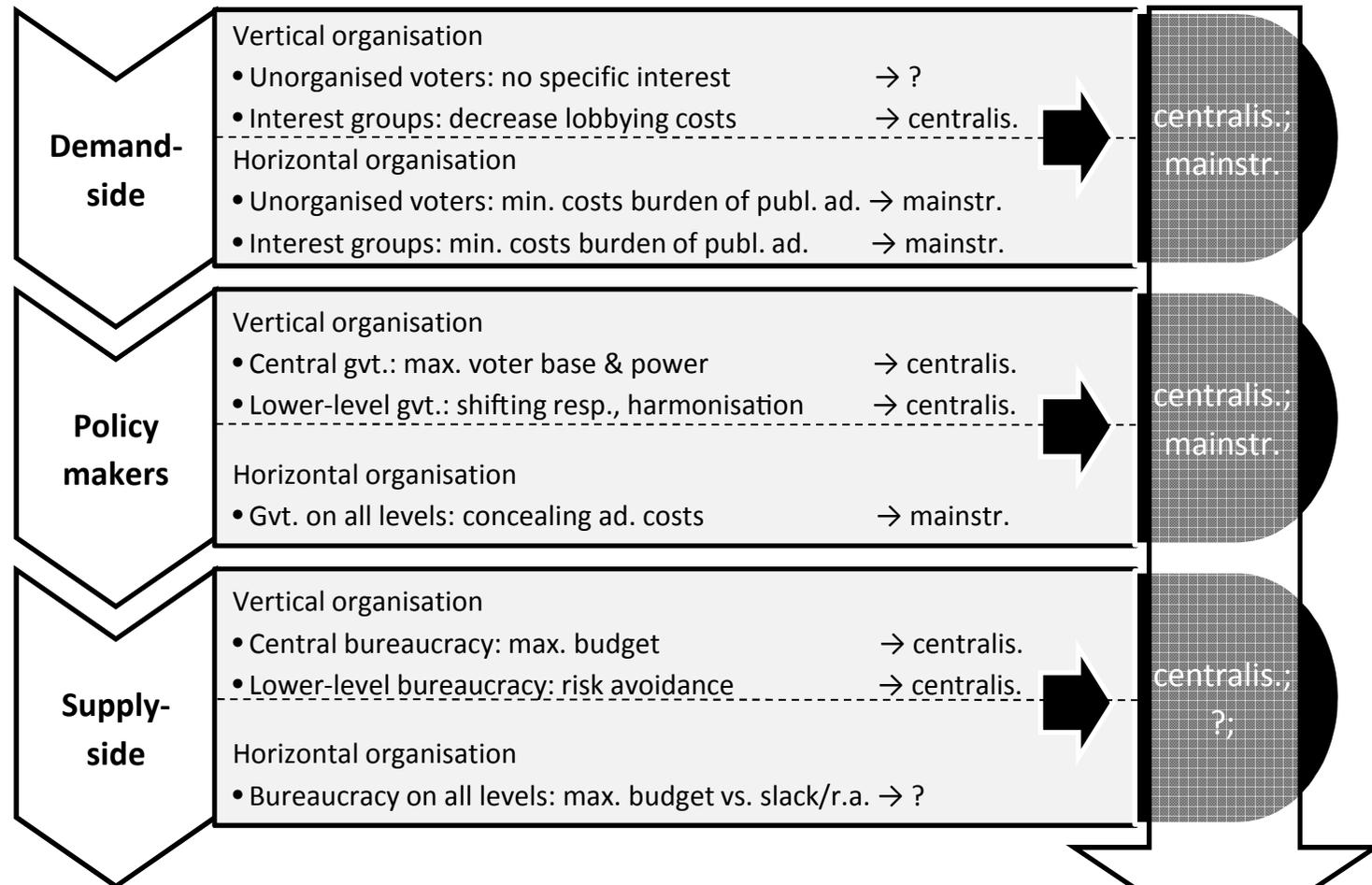
- **Vertical** organisation: Allocation of responsibilities and competences along the political levels (supranational, national, regional, local).
- **Horizontal** organisation: Variety of policy fields and respective actors that engage in planning and implementing adaptation measures.

b) Normative analysis

- **Vertical**: Theory of fiscal federalism (e.g. Oates 1999) → decentralisation favoured due to
 - informational advantage of local decision makers → appropriate decisions
 - promotion of interjurisdictional competition
- **Horizontal**: Adapt. is a complex issue which is linked to numerous policy fields → mainstreaming favoured (UNDP/UNEP 2011) since it
 - facilitates access to specific information of the various fields of action
 - facilitates the identification of synergies with existing policy measures and administrative processes

2.3 Efficiency in terms of organisation

c) Positive analysis



Vertical: centralis.
Horizontal: mainstr.

3 Conclusions

- Adaptation policy process picks up considerable speed → need for raising awareness for and identifying barriers to efficient public adaptation.
- **Self-interest driven behaviour as major source of barriers** due to several characteristics of adaptation and the surrounding policy framework (lack of success metric,...).
- Main impacts of barriers suggested by our general Public Choice framework:
 - **Extent:** ambiguous trend; emergency relief: excess and misallocation
 - **Structure:** bias toward technical measures (form); bias w.r.t. timing depends on political discount rate
 - **Organisation:** centralisation bias (vertical); mainstreaming recommendation is met (horizontal)
- However: Results have to be treated with caution due to general level of analysis → need for further research
 1. **Theoretical:** Analyse and clarify ambiguous influences on the adaptation outcome emerging from reverse incentives within or between actor groups.
 2. **Empirical:** Study of specific adaptation policy processes and contexts needed for deriving concrete policy recommendations.