there is a tendency for the «exploitation» of the great or large by the small in groups with common interests, because the small often have clear incentives to free-ride, when the probability is high that a certain «public» good or service is provided by the larger ones.[15] The proposition of Olson holds true for countries, for groups and for individuals. In the latter case, an operationalization of size seems difficult, although there are some workable economic proxies for the «size» of an individual, such as wealth, influence or weights in a political body in the context of voting.

2.2.2.2 Size in relative terms

An alternative way of defining size, and therefore smallness, is available for the individual level, since Olson's notion does not appear very suitable in the individual context. Again, it is possible to analogously apply this definition, which we will refer to as size in relative terms, on the group or country level. According to Xu (1999) size is defined with the aid of the benefit one gains from something. The smaller individual, accordingly, benefits less from something, say, the consumption of a good or service, than the larger. Formalizing this definition, we get

$$\alpha_i S > \alpha_j S, \text{ whenever } \alpha_i > \alpha_j \qquad (1)$$

where S is the benefit and $\alpha_i S$ is the share of the benefit of individual i. Xu denotes i as the larger individual and j as the smaller, strictly according to their share of the benefit or utility. Note that, contrary to the definition of size in international economics, the small is always non-negligible here. A proper example of the definition of size in relative terms applied to countries might be the provision of a global public good. Size, then, can be measured according to the benefits of different countries derived from the public good. Vanuatu, e.g., is generally assumed to benefit much more from international cooperation against global warming (a global public good) than Austria; hence, Vanuatu would be larger than Austria in this respect.

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15 Tietzel and Müller (1998), building on Olson and Zeckhauser (1966) as well as on Rapoport et al. (1976), show the game theoretical rationale of Olson's findings.