

# Collective Dynamic Choice: The Necessity of Time Inconsistency

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December 29, 2010

ABSTRACT. We examine collective decisions over streams of consumption. Individuals all consume the same stream and evaluate it according to time discounted and smooth utility functions. We show that if individuals differ in their time discount factors, the only way to aggregate their preferences while respecting unanimous preferences and time-consistency is by appointing a dictator, even when all agents have exactly the same instantaneous utility function. Therefore, heterogeneous groups of individuals or individual decision makers who balance several different temporal motives must be time inconsistent. Furthermore, we show that if preferences are aggregated in a utilitarian manner, they necessarily exhibit a specific form of time inconsistency: a present-bias, favoring short-term consumption and potentially reversing choices as decisions are pushed further into the future. Finally, we also show that if preferences are aggregated by voting, the resulting choices will necessarily be intransitive even when there are strong restrictions placed on the feasible consumption streams.

JEL Classification Numbers: D72, D71, D03, D11, E24

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<sup>‡</sup>We thank Nageeb Ali, James Andreoni, Kenneth Arrow, Mariagiovanna Baccara, Miguel Angel Ballester, Douglas Bernheim, Martin Browning, Christopher Chambers, Keith Ericson, Drew Fudenberg, Jerry Green, Andrew Hertzberg, Julian Jamison, Lauren Merrill, Massimo Morelli, Efe Ok, Antonio Rangel, Ariel Rubinstein, and Tomasz Strzalecki for useful discussions and suggestions. We gratefully acknowledge financial support from the National Science Foundation (SES 0551014 and SES 0961481) and the Gordon and Betty Moore Foundation.