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Credibility and endogenous societal discounting

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Abstract

We consider a dynamic moral hazard economy inhabited by a planner and a population of privately informed agents. We assume that the planner and the agents share the same discount factor, but that the planner cannot commit. We show that optimal allocations in such settings solve the problems of *committed* planners who discount the future *less heavily* than agents. Thus, we provide micro-foundations for dynamic moral hazard models that assume a societal discount factor in excess of the private one. We extend the analysis to allocations that are *reconsideration-proof* in the sense of Kocherlakota [Kocherlakota, N., 1996. Reconsideration-proofness: A refinement for infinite horizon time inconsistency. Games and Economic Behavior 15, 33–54]. We show that these allocations solve the choice problem of a committed planner with a unit discount factor.

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1. Introduction

A large literature has explored the implications of dynamic moral hazard for inequality and insurance. One class of models considered assumes long-lived, risk-averse agents who experience privately observed shocks to their tastes, endowments or productivities. A benevolent planner provides insurance to these agents via mechanisms that give incentives for the truthful revelation of information. These models have been widely applied to analyses of optimal social insurance and taxation.

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Until recently, virtually all such models made two assumptions. The first was that the planner shared the same discount factor as the agents, the second that the planner could commit to implementing future allocations. Under these assumptions and some standard restrictions on shocks and preferences,[1] optimal social insurance arrangements exhibit a dramatic property. They imply severe long run inequality, with almost all agents eventually absorbed by a minimal utility, immiserating state.

Three recent papers, Farhi and Werning (FW) (2005), Phelan (2005) and Sleet and Yeltekin (SY) (2005a), have since departed from the equal discounting assumption. They suppose a planner or societal discount factor in excess of the agents' and show that this modification profoundly alters the optimal social insurance arrangement. Under mild conditions, there now exist optimal arrangements that imply ergodic processes for agent utilities and consumption. The immiseration result is overturned. Long run inequality is much less severe and these arrangements exhibit social mobility with, in the language of Phelan (2005), an absence of caste systems: the poor eventually become rich, the rich poor.

In this paper, we provide micro-foundations for the excess societal discounting supposed by FW, Phelan (2005) and SY.[2] In contrast to these contributions, we retain equal discounting, but drop the assumption of planner commitment. We then show that optimal allocations in such settings *solve the choice problems of planners who can commit, but who use perturbed discounting schemes*. These schemes discount the future less heavily than those of agents. We assume *neither* commitment *nor* differential discounting across planners and agents, but obtain allocations that solve problems in which both are present. In our model, high planner or societal discount factors are an equilibrium phenomenon, rather than an assumption.

Removal of the planner commitment assumption is of interest in its own right, independent of the connection with planner discounting. When both commitment and equal discounting are assumed, as in much of the existing literature, the immiseration result implies that the benevolent planner commits to her own eventual destitution. Thus, the optimal allocations obtained in the existing literature place extremely strong demands on the planner's (and more, generally, society's) ability to commit. It is natural to relax this ability.

Our analysis proceeds by blending the dynamic contracting concepts described above with notions from the literature on sustainable macroeconomic policies.[3] We assume a relatively simple environment in which agents receive privately observed taste shocks that affect their desire to

[1] See Phelan (1998).

[2] FW and Phelan (2005) provide an alternative normative rationale for this assumption, based on intergenerational considerations. See our discussion of the Rawlsian planner in Section 4.1.

[3] The literature on sustainable macroeconomic plans considers policymaking by governments that cannot commit, see for example, Chari and Kehoe (1990, 1993). Governments are modeled as being socially benevolent and as having access to a restricted set of tax mechanisms. Our modeling of a planner that cannot commit is in similar spirit, although our planner operates a mechanism constrained by incentive-compatibility considerations.

Bisin and Rampini (2005) also incorporate a lack of planner commitment into a dynamic moral hazard model. In contrast to us, they allow agents to undertake intertemporal trades that are hidden from the planner. On the other hand, Bisin and Rampini only consider finite horizon examples and explicitly rule out the reputational forces that are central to this paper. Dynamic optimal taxation in Mirrleesian environment is considered by Berliant and Ledyard (2005) and, in an early classic, by Roberts (1984). Although, enriching the environment in other ways relative to us, both of these papers also omit reputational considerations. Acemoğlu et al. (2005) do introduce reputation into a model with non-benevolent planner who cannot commit. See Remark 3 for some discussion of their paper.