Decentralized redistribution in a laboratory federation

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ABSTRACT

The idea of laboratory federalism provides a strong argument in favor of fiscal decentralization. It views autonomous jurisdictions in a federation as laboratories where new policies can be tested at low risk for the entire system. If successful, these policies will spread out by imitation; otherwise, they will be discarded. Studying this idea in a dynamic setting of fiscal competition, we show that, due to externalities between jurisdictions, policies that appear successful and are therefore mimicked do not necessarily enhance welfare, and vice versa. Specifically, in the classical framework of decentralized, rich-to-poor income redistribution with labor mobility the long-run outcome entails a complete breakdown of redistribution with zero subsidies to the poor everywhere.

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1. Introduction

On top of various other benefits, fiscal federalism is often credited as a laboratory or discovery procedure for good public policies (Kollman et al., 2000; Oates, 1999; Salmon, 1987). In a federation, jurisdictions can experiment with new and innovative policies. When failing, these policies can be discarded without great damage to the entire system; when successful, however, they will be copied elsewhere and eventually spread across the system. This Hayekian process of imitating successful policies will, so it is hoped, converge towards efficient outcomes. The notion of laboratory federalism is thought to be particularly suitable for social welfare policies (Inman and Rubinfeld, 1997).

This paper casts doubts on the hypothesis that laboratory federalism, viewed as a process of policy diffusion based on the imitation of policies that have been successful for some jurisdictions, has a universally beneficial nature. In a model of a multi-jurisdictional federation where redistribution from rich to mobile poor is decentrally run by jurisdictions, we show that mimicking best-performing policies implies, in the long run, a complete breakdown of rich-to-poor redistribution.

We arrive at this result in the classical framework of decentralized redistribution by Wildasin (1991); 1994). Governments in an economically integrated area want to redistribute income from immobile rich to poor workers who are freely mobile. In a migration equilibrium, the poor's living standard will equalize across jurisdictions. With the aim of maximizing its social welfare, each jurisdiction pays subsidies to its poor residents, financed by taxes on the local rich. For this and related frameworks, the literature routinely studies one-shot games between jurisdictions and predicts that, due to positive interjurisdictional externalities, the resulting Nash equilibria involve too little redistribution.

Our paper applies this framework in a study of laboratory federalism. Governments engage in repeated interaction over time. Rather than playing best-response strategies, they observe which policies performed best in other, comparable jurisdictions in the past and then adopt these policies for themselves (imitate-the-best behavior).[2] Policy innovation occurs via occasional experimentation. When a policy experiment turns out to be successful in the sense that the experimenting jurisdiction fares better than comparable but non-experimenting ones, the latter jurisdictions will

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[2] To make comparisons across jurisdictions straightforward and uncontroversial, we assume that each jurisdiction has at least one (but possibly more than one) "twin" jurisdiction that is identical in policy preferences and production technology; comparisons are only made among identical jurisdictions. Our treatment of regional asymmetries is akin to the modeling of an asymmetric oligopoly in Tanaka (2001).

adopt the new policy; otherwise the experiment fails and will eventually be discarded.

Our main observation is that the dynamic process with imitate-the-best behavior and occasional policy experimentation drives the system towards ever lower subsidies to the poor: decentralized redistribution eventually breaks down (Proposition 2). Policy experiments that cut back subsidies to the poor will be mimicked by other, comparable jurisdictions, while experiments with higher subsidies will be discarded as unsuccessful.

The intuition is as follows. In a migration equilibrium, the poor's consumption level equalizes across jurisdictions (technically, it is a public good for the federation). If, by experimenting with a new policy, a jurisdiction raises or lowers the poor's consumption level, this will, via free mobility, affect all jurisdictions in the same way. Consequently, when it comes to comparing policy performances across jurisdictions, the impact of subsidies on the poor's consumption level is irrelevant (since identical everywhere). More generous jurisdictions differ from less generous ones, however, in their costs of redistribution: higher subsidies mean higher taxes on the local rich and, thus, lower consumption for the net contributors to the redistribution system. An increase in its subsidies to the poor therefore puts a jurisdiction in a relative worse position in terms of the costs of redistribution without offering any relative benefit in terms of the poor's consumption. Hence, increases in subsidies turn out to be unsuccessful policy experiments and will eventually be discarded. Conversely, reductions of subsidies are successful experiments and will be mimicked: their (negative) effect on the poor's consumption afflicts the entire federation and, thus, does not matter for performance comparisons across jurisdictions, but the lower costs of redistribution enhance the relative performance in the jurisdictions that cut back subsidies. In sum, unilateral increases in subsidies do not succeed in the imitation process while cutbacks tend to spread across the entire federation. In this way, the dynamics of laboratory federalism has fatal consequences, eventually triggering a complete breakdown of redistribution.

The imitation-cum-experimentation dynamics in our model captures many aspects of laboratory federalism. It involves learning from others, the dissemination of policies that perform well in relative terms, and the possibility of innovation. Moreover, unlike playing best-replies, it does not require that governments fully understand the mechanics of the federation and its economic structure; it suffices that they observe policies and payoffs. This reflects that the laboratory feature of federal systems is particularly relevant and appealing when knowledge about the functioning of the economy is limited.

Technically, we borrow from the literature on stochastic evolutionary learning (see e.g. Young, 1993; Vega-Redondo, 1997; Ellison, 2000). The predicted long-term outcomes of stochastic imitative dynamics are so called stochastically stable states. They are those states at which the system of jurisdictions spends most of the time. The literature has established a close connection between these long-term outcomes of imitation-cum-experimentation dynamics and so-called globally stable strategies (GSS) of the underlying static, one-shot game. In particular, if a GSS exists in the static game, then it corresponds to the unique stochastically stable state of the imitation-cum-experimentation dynamics (Alós-Ferrer and Ania, 2005, Proposition 4).

To prepare our dynamic analysis, we therefore first study global stability in the static game (i.e., in the framework of Wildasin (1991). Generally, a strategy is globally stable if any group of players choosing another strategy is always worse off than the non-deviators. Once adopted, a GSS cannot be upset by experimentation, neither at the small nor at the large scale. In particular, it is also robust against single deviations and, thus, constitutes a so-called evolutionarily stable strategy. With finitely many players, an evolutionarily stable strategy (and, by consequence, a GSS) is not necessarily a Nash equilibrium of the static game, but it corresponds to a Nash equilibrium of a suitably defined game where players maximize *relative* instead of absolute payoffs; i.e., with the aim of getting as far ahead of others as possible.

Our Proposition 1 shows that in the static decentralized redistribution scenario à la Wildasin (1991), a zero subsidy (i.e., no redistribution at all) is the unique GSS for every jurisdiction. The intuition is similar as outlined before: by cutting back its subsidy, a jurisdiction always improves its *relative* position with respect to others. As the poor's consumption level is common to all jurisdictions, changes thereof do not affect the relative performance of any jurisdiction. Gains in relative payoffs can only be achieved if the income of the local rich increases – which happens when subsidies are cut back. This generates a downward pressure on subsidies. Likewise, in a situation with zero subsidies everywhere, any deviating jurisdiction or group of jurisdictions that pays positive subsidies to its poor will end up worse off, relative to others.

In terms of social welfare, the predicted breakdown of decentralized redistribution in a laboratory federation is worse than the underprovision of redistribution in the Nash equilibrium à la Wildasin (1991).[3] While working through different channels, the efficiency failure in both scenarios has a common root, namely the fact that the poor's consumption level is the same in the entire federation (its public-good property). Subsidies to the poor being suboptimally low in a Nash equilibrium of the redistribution game reflects the standard underweighting of the benefits to others in the decentralized provision of public goods. Subsidies to the poor going extinct in the framework of an imitation and learning process reflects the fact that the provision level of a public good is irrelevant for performance comparisons among its users.

Our paper is theoretical, and one might wonder about its empirical relevance. Studies, mainly from the US, indeed indicate that mimicking behavior is present in the area of welfare policy in fiscal federations (Revelli, 2002; 2006; Saavedra, 2000); or (Brueckner, 2000). There is also evidence that relative performance concerns drive imitative behavior (see, e.g., Revelli and Tovmo (2007)). While there is no direct evidence that imitation leads to a complete break down of the welfare state, decentralized redistribution seems to trigger "races to the bottom": governments, out of the fear to become welfare magnets, underbid each other in the transfers to the poor; see, e.g., Dahlberg and Edmark (2008) for Sweden, Fiva and Rattsø (2006) for Norway, or Bailey and Rom (2004) and Figlio et al. (1999) for the US. Interestingly, the latter study reports asymmetric responses to changes in the benefit levels of other jurisdictions; benefit cuts are much more likely to be followed than increases. This is in line with the pattern that our model predicts for imitation dynamics.

Also for policy areas other than redistribution, this kind of "race to the bottom" is well documented in fiscal federations (see the survey by Costa-Font et al., 2014). In line with our prediction, this can go as far as a full elimination of taxes, as it happened to the bequest tax in some areas of the US, Switzerland, or in South-East Asia and Australia (see Brülhart and Parchet, 2014). The behavioral causes underlying the decline in tax rates – ranging from best replies with strategic complements to coordinated actions, or imitative behavior – remain, however, disputed and are difficult to discern empirically. Interestingly, it appears that standard tax competition alone cannot account for extreme cases such as the extinction of the death tax: tax base mobility and, thus, interjurisdictional externalities are too small empirically (Brülhart and Parchet, 2014). By contrast, imitation models like the one

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[3] In Wildasin (1991), a complete breakdown might arise if the number of jurisdictions is very large. Our frameworks predicts a breakdown for any number of jurisdictions.