



Heterogeneous preferences and in-kind redistribution: Theory and evidence



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ABSTRACT

This paper examines the impact of social heterogeneity on in-kind redistribution. We contribute to the previous literature in two ways: we consider (i) the provision of several public goods and (ii) agents different not only in income, but also in their preferences over the various goods provided by the public sector. In this setting, both the distribution and size of goods provision depend on the heterogeneity of preferences. Our main result is that preference heterogeneity tends to decrease in-kind redistribution, while income inequality tends to increase it. An empirical investigation based on United States Census Bureau data confirms these theoretical findings.

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1. Introduction

The amount and the types of public goods provided in modern societies depend on a collective choice attempting to aggregate individual preferences. The preferred level of redistribution is in general considered to vary across individuals due to mere differences in income, the poor desiring more progressive tax schemes than the rich. If one extends the notion of redistribution to the provision of various public goods,¹ preferred allocations may also vary due to differences in preferences. Such differences may be due to age (young couples are more in favor of public education, while the elderly are more in favor of the provision of public health services), but also to heterogeneity in education, ethnicity, employment status, etc. (Alesina and Giuliano, 2010).

The present contribution aims at analyzing public goods provision in the presence of both heterogeneous incomes and preferences. Individual preferences are formed over (i) private consumption, i.e. net income; (ii) quantity and (iii) nature of public goods, whose provision is financed by taxation.

The basic intuition behind our setting is that, although general support for redistribution is higher for the individuals with income lower than the mean, all the individuals, independently of their income levels, are less inclined to support

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¹ Following most of the literature on this topic, all along the paper we refer to public goods as both pure public goods and publicly provided private goods (see, among others, Alesina et al., 1999).

taxation if they anticipate that part of the public budget is going to be spent on goods and services which are not among their preferred ones. If one considers that fractionalization in a society implies a higher heterogeneity in preferences, then the support for taxation and public provision is likely to be lower in societies with higher levels of fractionalization.

In more unequal society, poorer individuals (usually assumed to be the majority of the population) desire a higher degree of redistribution (see [Borck, 2007](#) for a survey of models of voting on redistribution). Standard theories on cash redistribution state that support for redistribution decreases with income. If the median voter is able to determine the level of redistribution, then it is increasing with inequality, defined as the distance between mean and median income ([Meltzer and Richard, 1981](#)).² When redistribution is made in kind, an alternative result, the Director's law ([Stigler, 1970](#)), can be obtained. This result, reprized by [Epple and Romano \(1996\)](#), is that when the middle class benefits from the public provision of goods more than both richer and poorer classes, the rich and the poor may agree on a lower level of in-kind redistribution.

On the one hand, a vast, mostly empirical literature examines the role of income inequality or ethnic and linguistic differences in determining the extent of income redistribution or the provision of public goods. The general findings common to those contributions are (i) a negative correlation across countries, or municipalities, between ethno-linguistic (or/and religious) diversity and indicators of public goods provision and (ii) a tendency for individuals to increase their support for welfare spending if a larger fraction of welfare recipients in their area belongs to their ethno-linguistic group ([Alesina et al., 1999](#); [Luttmer, 2001](#); [Alesina and la Ferrara, 2005](#); [Banerjee et al., 2005](#); [Gugerty and Miguel, 2005](#); [Habyarimana et al., 2007](#); [Desmet et al., 2009](#); [Alesina and Zhuravskaya, 2011](#)).

On the other hand, the theoretical literature has extended the classical framework of majority voting over public goods provision by considering multiple dimensions in either the policy space (e.g. the set of public goods) or the space of voters' characteristics (e.g. income and preferences). These contributions consider either the choice of the quantity of a public good ([Alesina and Spalore, 1997](#)) or the "type" of this good (location and/or proportion of the budget to be allocated to a specific good, [Bolton and Roland, 1997](#)) or, as in this paper, both aspects ([Alesina et al., 1999](#); [Gregorini, 2009](#)). In some settings, voters differ only in their income ([Bolton and Roland, 1997](#)), only in their preferences ([Alesina et al., 1999](#)) or, as in the present contribution, in both ([Fernandez and Levy, 2008](#); [Gregorini, 2009](#)).³ More recently, [De Donder et al. \(2012b\)](#) generalize this setting by considering (i) both the type (i.e. location) and the size of a public good, with (ii) voters differing both in their income and in their preferences. In particular, under lump sum taxation, they reproduce the benchmark results of [Alesina et al. \(1999\)](#), where individuals are located on a line and vote sequentially, first on the size, and second on the location of the public good. In both contributions, at equilibrium the median location is chosen to place the good and the equilibrium size of the good is determined by the agent whose distance from the equilibrium location is median. With proportional taxation, instead, they obtain a lower public good level than this benchmark, if they allow the correlation between income and location to be positive, although not perfect.

This paper departs from the approach of [Alesina et al. \(1999\)](#) and [De Donder et al. \(2012b\)](#) by including several relevant refinements among those suggested by recent theoretical contributions reviewed above: (i) income heterogeneity; (ii) a proportional tax system; and (iii) multiple public goods to be produced at the same time and whose structure does not impose strong assumptions such as an ordering on a uni-dimensional space. Finally, individuals loss functions, measured by the distance between individual preference and the type of goods actually provided by the government, are explicitly modeled allowing to derive a closed-form solution to the model. We show that these two types of heterogeneity affect the total provision of public goods through the level of taxation. At equilibrium, the total provision of public goods depends on the distance between individuals' preferences. In particular, we show that more fragmented societies generate lower public budgets, for any given income distribution, while income inequality tends to increase it, for any given level of fractionalization.

We test these results using United States Census Bureau data. The main advantage of this dataset is that it is possible to generate a panel of 750 observations (50 states over 15 years). Exploiting this panel structure with state fixed effect allows us to analyze units with a high level of heterogeneity, but within the same federal constitution. In order to measure the provision of public goods, we compute net expenditures of every state. The heterogeneity in the population is captured by distance in individuals' socio-economic characteristics and by income inequality measures.⁴ With these variables, we are able to test our main theoretical predictions. We provide several robustness checks of our results by considering different assumptions on the timing of the political process and on the indices used to measure inequality and social distance, and by addressing reverse causality and selective migration issues.

The remainder of this paper is organized as follows. We introduce the basic theoretical setting of our model of public good provision in a heterogeneous society in the next section and the main theoretical results are derived in [Section 3](#). [Section 4](#) presents the dataset and variables used in our empirical exercise. In [Section 5](#) the methods and the results of the empirical part are presented. [Section 6](#) concludes.

² This assuming that the distribution of income is right-skewed, i.e. median income lower than the average income. The opposite would be true otherwise.

³ Both cited contribution are not directly comparable to our contribution as they only consider two classes of income (rich and poor) and they also differ in the political process they analyze, considering, instead of majority voting, the formation of parties and the existence of a social planner, respectively.

⁴ Refer to [Section 4](#) for a description of the variables and the methods used to proxy individuals' heterogeneity.

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