Limits to redistribution in a democracy: a survey

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Abstract

The median voter theorem suggests that a majority vote over a linear tax-cum-transfer scheme results in egalitarianism if the median of the income distribution is poorer than the average. However, although most real-world income distributions are markedly skewed to the right, radical redistribution is rather an exception than the norm. In this paper we review the theoretical arguments that explain limited redistribution as an outcome of the political process. The contributions are classified into two categories, according to whether it is the properties of the political process that prevent the poor from politically implementing their will, or whether it is in the self-interest of the poor to refrain from radical redistribution.
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1. Introduction

Most distributions of income are skewed to the right, which implies that a majority of individuals earns an income that is strictly lower than the mean.[1] While the early literature on distribution theory sought to explain this skewness property, later contributions dealt with its political implications: in a standard one-person-one-vote framework, a poor majority should be expected to implement a large degree of redistribution by imposing high (explicit or implicit) taxes, and by spending the proceeds on public goods or directly

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[1] Throughout this survey, we focus on influences that determine the redistribution of *income*. However, most arguments that we discuss also apply to the redistribution of *wealth*.

transferring the tax proceeds to themselves. However, observed fiscal constitutions do not approach the extreme case of permitting complete redistribution. In this paper we review theoretical approaches that have been developed to explain the apparent limitations to redistribution.[2]

Throughout this paper we focus on democratic societies where the poor majority is—at least formally—endowed with comprehensive political rights. Moreover, we abstract from arguments that stress exogenous preferences for justice or fairness to explain the apparent tolerance for inequality.[3] While we acknowledge that these considerations can play a significant role in policy formation,[4] we concentrate on arguments that explain why the majority in a society composed of *selfish* individuals tolerates inequality that is not to its advantage.

Our survey starts from the following established 'benchmark' model, which serves as the principal theoretical justification for large-scale redistribution: the distribution of income is taken to be exogenous. A majority vote takes place over a linear income tax t, the proceeds of which are to be distributed equally among the total population. All members of the population participate in this vote and possess an identical indirect utility function U that is strictly increasing in post-tax income, including transfers. For a given mean income $\bar{y}$, utility of actor i with pre-tax income y_i therefore reads

$$V^i(t) = U((1 - t)y_i + t\bar{y}).\tag{1}$$

All individuals with income below $\bar{y}$ prefer far-reaching redistribution whereas agents whose incomes are above the mean would choose a tax rate as low as possible.[5] Since preferences over t are single-peaked, the median income recipient is politically decisive (Black, 1948). For a pre-tax distribution skewed to the right, full expropriation is therefore the unique Condorcet winner, i.e. the policy proposal that beats all other alternatives in a pair-wise comparison. We shall consider how this basic framework has to be modified in order to explain the moderate extent of redistribution that actually takes place.[6]

The arguments we present are classified into two broad categories: first, a majority vote on a linear tax-cum-transfer scheme may not be a good description of how the extent of redistribution is determined. Section 2 follows this line of argument and describes various deviations from the political process assumed above that prevent extensive redistribution from rich to poor. Section 3 takes the majority-voting framework and the policy space as given and inquires why it may be in the self-interest of the poor to choose a moderate degree of redistributive taxation.

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[2] While our study concentrates on the forces that *limit* the extent of redistribution, more general discussions of the political economy of redistribution and taxation are provided by Hettich and Winer (1997), Boadway and Keen (2000), Drazen (2000), Persson and Tabellini (2000) as well as Hillman (2003).

[3] Agents may, for instance, believe that people with superior abilities or more effort receive their just rewards. These and related arguments are discussed by Putterman (1997).

[4] Evidence supporting this view is found by Corneo and Grüner (2002).

[5] For a more extensive discussion, see Hillman (2003, Chapter 6).

[6] A recent empirical study conducted by Milanovic (2000) reports that, while more unequal societies tend to be characterized by greater income transfers to the poor, the median voter is usually not among the beneficiaries of such transfers. This finding per se is, however, not sufficient to reject the benchmark model since he or she may well benefit disproportionately from public expenditures on goods and services (see Stigler, 1970).

2. Why median income may not matter

The belief that it is not the poor majority, but the rich minority that controls the political process is wide spread. The goal of this section is to make this notion more specific in order to explain why the largest transfers do not necessarily accrue to the majority of poor agents. At first, we remain within the framework of a direct democracy where the residents assemble to directly choose the tax scheme. In a second subsection, we focus on representative democracies where candidates compete for electoral support.

2.1. Direct democracy

2.1.1. Limited participation

In our basic framework, the median voter is politically decisive, and since all agents are assumed to participate in the election, the median voter and the median of the income distribution coincide, bringing about full redistribution. However, due to costs of voting or voter indifference, the voter turnout in reality is far below 100%. If an agent's incentive to vote is negatively correlated with his income—a conjecture supported by the empirical studies of Conway (1985) and Edsall (1984)—the *politically decisive* voter may be in a larger quantile of the income distribution, and the poor, while forming a majority in society, do not form a majority at the polls. As a consequence, the equilibrium tax rate may be lower than the tax preferred by the agent with median income.

2.1.2. A richer policy space

In our benchmark model, the policy space is one-dimensional since individuals are confined to vote on a linear tax-cum-transfer scheme and the government is subject to a balanced-budget constraint. Of course, matters become more involved once we allow for a richer set of redistributive policies. Since, in this case, the vote is over the whole post-tax distribution of income, the policy space is multi-dimensional, and a Condorcet winner does no longer exist, that is, any majority coalition can be defeated by the formation of some other coalition (see Hillman, 2003, Chapter 3). In particular, there exist policies that beat an equalization of incomes under majority voting.

Even if the set of schemes to be voted upon is restricted to eliminate instability arising from cyclical majorities, there may be proposals that defeat egalitarianism in a majority vote. If, for instance, the middle class can be compensated in some way for a renunciation of large-scale redistribution, there will be a strict majority in the population—comprising the middle and the upper class—that rejects full redistribution. Breyer and Ursprung (1998) explore constitutional regulations that allow for such a compensation of the middle class. The designs they focus on are such that the middle class feels at least as comfortable as under egalitarianism, whereas, owing to incomplete expropriation, the rich are strictly better off. Their result can be illustrated in the following example. Assume there are three persons with exogenous incomes $y_1 < y_2 < y_3$ so that $y_2 < 1/3 \sum_{i=1,2,3} y_i = \bar{y}$. The individuals can choose between a proportional tax rate of 1 (or 100%) with the revenues divided equally among the residents and a scheme where only individual 3 is taxed at the rate $t = (\bar{y} - y_2)/y_3$ and person 2 receives the proceeds as an individual transfer, thus having post-tax income equal to the average. Individuals 2 and 3 prefer this tax-cum-transfer

scheme to complete equalization: while individual 2 is indifferent between the two alternatives, since they yield the same post-tax income, individual 3 is strictly better off without transfers to individual 1. By transferring part of their income to the middle class, the rich thus bribe members of the middle class to reject a leveling of incomes.[7]

2.2. Representative democracy

The discussion in the previous section has shown that the basic model of a direct democracy no longer implies an equalization of incomes if not all members of society participate in the election or if a broader set of tax schemes is at stake. In this subsection, we focus on an institutional framework where political decisions are made through elected representatives. We first consider the case where voters are perfectly informed about candidates' platforms and where candidates can credibly commit to their announced policies. After that, we discuss a setting where voters' 'rational ignorance' shifts de facto political power from the electorate to interest groups.

2.2.1. Electoral competition

Suppose that the electorate votes over two parties. The winner, once in office, implements the linear tax-cum-transfer scheme announced at the time of the election. Both parties know the distribution of income and choose their party programs in order to maximize the probability of winning the election. If the median of the income distribution is below the average, both political parties propose a program that promises full redistribution. This is just the Hotelling (1929) minimum differentiation property, also applied to party competition by Downs (1957). The outcome in a representative democracy therefore corresponds to the results in a direct democracy where voting is in a one-dimensional issue space.

However, parties may have exogenous preferences over other policy issues, and the goal to realize different policy objectives may prevent them from implementing extreme redistribution. This is demonstrated in a paper by Roemer (1998) who presents a model in which two parties compete on a two-dimensional issue space: the extent of redistribution and some noneconomic issue, say religion. There is a left-wing party representing anti-clerical poor constituents and a right-wing party in favor of pro-clerical rich agents. Both maximize the expected utility of a representative constituent, i.e. they are 'non-Downsian' and choose a platform that is both close to their preferred policy and implies a reasonable probability of winning the election. Roemer shows that in this setup the (anti-clerical) left-wing party may temper its redistributive ambitions in order to attract anti-clerical rich supporters.[8]

Politicians may also refrain from radical redistribution if they are Downsian maximizers of political support, while voters may have ideological preferences that make them prefer a particular party. In this case, candidates do not choose policies to please

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[7] Of course, the middle class could simply form a majority of the electorate and could benefit themselves at the expense of the rich and the poor. A transfer of resources to the middle class conforms with Director's law, which claims that redistribution through public spending occurs from the tails to the middle of the distribution (Stigler, 1970). Consistently, the evidence (see Milanovic, 2000) is that redistribution towards the middle takes place rather through benefits from spending on public goods than through income transfers.

[8] Necessary for this result is that religious views in the population are not independent of the initial distribution of income.

loyal adherents, but to gain support by voters that have no ideological affinity and make their choice solely dependent on the utility that they derive from an announced redistributive policy. In the context of probabilistic voting models, Coughlin (1986) as well as Dixit and Londregan (1996) show that the existence of party loyalty can imply an equilibrium redistribution scheme where the wealthy, instead of paying high taxes, receive the largest transfer payments. The reason is that parties are tailoring their announced redistributive policies to court 'swing' voters—those with the most wavering party preferences. Dixit and Londregan (1996) stress that this effect may dominate the fact that, ceteris paribus, transfers have a larger impact on voting probabilities of the poor since marginal utility is larger at low levels of income. They also demonstrate that group size need not matter in this context: while small groups only have few votes to offer, they are cheap to buy since modest aggregate transfers yield large per capita payments. The opposite is true for large social groups: they provide many votes, but large concessions are required to generate perceptible per capita transfers. Hence, the greater number of the relatively poor does not necessarily imply that they have a greater impact on political outcomes.

2.2.2. Interest groups

In the models that we have discussed so far, voters were perfectly informed about party platforms, and candidates could credibly commit to announced policies. As a result, the extent of redistribution was determined by the distribution of individual characteristics in the population. If we drop the assumptions of perfect information and credible commitment and replace them by the notion of voters' 'rational ignorance' (Downs, 1957), a politician's decisions need no longer reflect the preferences of the majority. Instead, de facto political power is moved to interest groups who influence candidates' platforms and election probabilities through campaign contributions and spend resources on lobbying incumbent governments. While the politicians' goal may still be to maximize the likelihood of being (re)elected, the focus of analysis has to shift from the distribution of characteristics within the electorate to the influences that determine the impact of interest group activity.[9]

The idea that the success of interest groups in affecting policies depends on the amount of resources—time or money—they are willing to spend is captured by the *political support function*—introduced by Peltzman (1976) in the context of regulation and Hillman (1982) in the context of international trade policy—and the *influence function*, introduced by Becker (1983).[10] The resources spent by a particular interest

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[9] Note that we do not share the notion, expressed, for example, in Persson and Tabellini (2000), that the relevance of interest group models is confined to the analysis of *special interest* politics, which determine the size of narrowly targeted programs with low social costs. Instead, we believe that voters' rational ignorance leaves room for interest group activism even if more fundamental distributional issues are at stake.

[10] While the political support function formalizes the politicians' trade-off between obtaining voter and special interest support by assuming that particular interests as well as social welfare enter into the incumbent government's objective function, the influence function is used to relate policy outcomes to the strategic interaction between interest groups. Austen-Smith (1997) as well as Grossman and Helpman (2001) survey theoretical approaches to modeling lobbying activity. Potters and Sloof (1996) provide an excellent survey of the empirical evidence.

group may depend on its size and on group members' average income. In fact, Rosenstone and Hansen (1993) find that poor and less educated persons have a lower propensity to engage in canvassing and spending time on party meetings, which supports the notion that the rich are a more powerful interest group since they can afford to devote more resources to lobbying.

Olson (1965) as well as Peltzman (1976) pointed out how larger group size can be a disadvantage when seeking political support. While Olson referred to free-rider problems that are easier to overcome in small groups, Peltzman argued that small groups can offer larger per capita gains and thus can better mobilize their members by providing better incentives. Moreover, "since an increase in the number of persons taxed reduces the tax required on each person to obtain a given revenue and thereby reduces the marginal (and total) deadweight cost of taxation" (Becker, 1983, p. 384), interest groups that success-fully raise subsidies tend to be small relative to the number of taxpayers.[11] Applied to our original question about the limits to redistribution, this suggests that a poor majority does not impose radical redistribution on the rich because the latter have an advantage in exerting political power and thus greater influence on tax policies and other redistribu-tional measures. Put differently, it is precisely *because* the poor are a majority and decisions are made subject to the influence of interest groups under representative democracy that only limited redistribution is observed.

2.3. Remarks

This section has noted that the existence of a poor majority does not imply radical redistribution if we deviate from a setting where a linear tax-cum-transfer scheme is determined by a majority vote among a perfectly informed population. It is quite natural to ask why the poor, who appear to be the losers of the institutional framework characterizing democratic societies, do not resort to outright violence or insurrection to enforce a redistribution of incomes (see Grossman, 1995). If one allows for the possibility that the poor majority enacts its will by nonconstitutional means, i.e. an 'insurrection', one needs to explain why insurrections are rather rare events. Olson's (1965) logic of collective action applies here, too, and the majority of disadvantaged individuals may fail to overcome the free-rider problem.[12] Moreover, violent redistrib-ution usually entails an economic breakdown during the subsequent periods, which may also affect those who gain from redistribution in the short run, and the losses resulting from this kind of social unrest have to be traded off against the immediate gains. Finally, if a rich minority controls the political process under an existing political and economic order but faces the possibility of nonconstitutional redistribution, it may implement moderately redistributive policies in order to reduce the likelihood of an insurrection. This is proposed by Grossman (1994, 1995), who shows that a voluntary redistribution of income can persuade the poor not to engage in appropriation of

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[11] Note, however, that there are circumstances when group size does not matter (see, for instance, Ursprung, 1990).

[12] Possible explanations why poor agents may risk their lives and participate in revolts although their participation does not alter the probability of success of the rebellion are surveyed in Taylor (1988).

resources.[13] In the same spirit, Falkinger (1999) demonstrates that the poor may threaten to disturb the productive process in order to achieve a more favorable secondary distribution.

So far, we have considered the limits to redistribution in a static context. Epple and Riordan (1987) as well as Artale and Grüner (2000) use the idea that repeated interaction may give rise to cooperative behavior. In their papers, voting takes place repeatedly, and a consensus to restrict the set of possible policy outcomes to moderate policies, i.e. proposals that "...do not discriminate against single groups in favor of all others" (Artale and Grüner, 2000, p. 21), is supported by agents playing trigger strategies. Hence, in a dynamic voting context, moderate redistribution may result from agents' (credible) threats to punish any part of society that deviates from such an implicit "understanding" (Epple and Riordan, 1987, p. 43).

3. A rational reluctance to redistribute

We now adopt the political setting of the benchmark model, that is, we consider direct democracy where the decision about a linear tax takes place in a majority vote, and where there are no costs of voting.[14] The income distribution is skewed to the right, hence, median income is below the economy average. The person with median income is the median voter. If we denote median income by $\tilde{y}$, the equilibrium tax rate t maximizes $\tilde{V}(t) = U((1 - t)\tilde{y} + t\bar{y})$. $\tilde{V}(t)$ is maximized at $t = 1$ if $\tilde{y} < \bar{y}$. In the following, we show that this boundary solution need no longer apply when the basic framework is modified.

3.1. Tax base effects

The benchmark result that a majority vote results in radical redistribution if the median voter is relatively poor is based on the assumption that agents' behavior and thus average income do not respond to changes in the level of taxation. In reality, however, taxing incomes reduces agents' incentives to supply effort or factors of production and thus generates deadweight losses. We incorporate this trade-off between equality and efficiency into the benchmark model by assuming that taxation affects the primary distribution, most importantly, by reducing average income.[15] In this case, the median voter's goal is to maximize

$$\tilde{V}(t) = U((1 - t)\tilde{y} + t\bar{y}(t)). \tag{2}$$

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[13] A similar argument applies to the situation of a nondemocratic country ruled by autocratic political elites. In principle, the rich elite can redistribute political rights or property to avoid social unrest. An extension of the political rights of the poor may be preferred by the wealthy since an extended franchise can also serve as a commitment to future redistribution (Acemoglu and Robinson, 2000). Tullock (1987) offers a general discussion of nondemocratic regimes.

[14] Note that, with attention limited to linear schemes, most of the models we discuss imply the complete absence of redistribution while *some* redistribution might occur if nonlinear policies were considered as well.

[15] See Okun (1975) for an early contribution that stressed the importance of the 'big trade-off' between equality and efficiency in shaping agents' distributional preferences.

Of course, if $\bar{y}$ decreases in t, the optimal tax rate may no longer be equal to 1.[16] The reason is that if factor supplies are elastic, increasing the tax rate reduces factor rewards and distorts the factor supply decision. The reduction of the tax base goes hand in hand with less revenue from taxation if the elasticity of supply exceeds unity.

The classical contribution that focuses on this effect is Meltzer and Richard (1981). In their paper, labor supply is endogenous and individuals differ in their innate productivities. They show that even the least productive person does not want to implement a unity tax rate since no other agents would work, thus driving the tax base to zero. The implications of this model are twofold: first, no matter who the politically decisive voter is, a tax rate of unity will never be chosen; second, the more productive the decisive voter is, the lower is his optimal tax rate, since his or her personal loss is increasing in innate productivity.

Even if an individual's labor supply elasticity is low, the tax rate can affect average income if there is international mobility of labor and capital. A model where agents who oppose the tax policy in their jurisdiction can simply leave and move their labor supply to another country is set out in Epple and Romer (1991).[17] The extent of domestic income redistribution can also affect the number of immigrants, who are attracted by domestic welfare benefits provided to the poor (see, for instance, Hansen, 2003). Under such circumstances, the extent of redistribution desired by the median voter is reduced when poor immigrants benefit from redistribution. Hence, in a direct democracy, radical redistribution may be unattractive since it distorts economic behavior and potentially reduces the tax base—be it due to a reduction of individual labor supplies, emigration, capital flight, or immigration.

3.2. Effects based on the endogeneity of the secondary distribution

Even if taxation does not alter the tax base, complete redistribution may be unattractive to the politically decisive voter since the shape of the secondary distribution has important consequences for the social hierarchy and for the distribution of economic opportunities. This argument is formalized, assuming that the utility of the politically decisive individual not only depends on his or her post-tax income, but also on some other variable H that itself is influenced by the post-tax income hierarchy. The utility of the politically decisive agent thus reads

$$\tilde{V}(t) = U((1-t)\tilde{y} + t\bar{y}) + H(t). \tag{3}$$

If $H(t)$ decreases in t, it is possible that, despite $\tilde{y} < \bar{y}$, leveling incomes is not optimal for the politically decisive agent. In the following, we present various examples that explain why this might be the case. The differences are only in the interpretation of $H(t)$.

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[16] To simplify matters, we assume here and in the following that the decisive agent and his or her income do not change when t varies.

[17] Of course, the same argument holds for the location of capital if there are no impediments to international capital mobility. See, for example, Persson and Tabellini (1992). Cremer et al. (1996) survey the literature on factor mobility and taxation.

3.2.1. Social status

One reason why the post-tax distribution may matter is that it is crucial for agents' social ranking. In this case, leveling incomes may be unattractive if people derive utility from a discernible social hierarchy, and H measures the extent to which agents are distinguishable. Corneo and Grüner (2000) make this argument by assuming that social attributes are positively correlated with economic success, and that the company of richer agents provides higher social status. Since an agent's income is not directly observable, observed consumption has to be used to infer an individual's social attributes. While leveling incomes brings gains to agents with incomes below the average, it also reduces the informational value of observed consumption. For this reason, radical redistribution may be unattractive for the politically decisive voter.

3.2.2. Capital market imperfections and trickle-down effects

Apart from defining social status, the post-tax distribution is important if it influences agents' investment opportunities in a world of imperfect capital markets. Moral hazard and adverse selection limit the availability of external finance, which may prevent agents with low incomes from realizing profitable investment projects—be it an investment in education, the start-up of a new firm, or research and development activities. If redistribution enables the politically decisive agent to undertake investments he or she could not have made with primary income, $H(t)$ is increasing in t, which enhances the attractiveness of a high tax rate. However, redistribution may also reduce average income to a level where *no* member of society is able to invest. This point, which would be reflected by $H(t)$ decreasing in t, is emphasized by Perotti (1993), who describes an economy where (human capital) investments are associated with fixed costs that have to be financed by agents' initial incomes. The important property of his model is that the aggregate level of human capital has a positive effect on *all* agents' incomes.[18] Due to this external effect, the politically decisive agent may want to provide other individuals with the opportunity to accumulate human capital, although his or her own primary income does not allow him or her to invest. Hence, agents may tolerate the concentration of income in the hands of a few persons since they anticipate that the economic success of the wealthy will eventually *trickle down* to them.

3.2.3. Subsidies to education

As Perotti (1993) emphasizes, the argument just described fits poor countries where the average individual cannot invest in human capital and an equalization of investment chances diminishes aggregate investment activity. However, the argument does not apply to rich societies where average income is high enough for redistribution to open up investment opportunities for the poor. It thus remains to be explained why, under such circumstances, the relatively poor do not redistribute investment opportunities by redis-

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[18] Nelson and Phelps (1966), for instance, argued that a country's stock of human capital determines its ability to generate new technologies. In this sense, individual human capital investments advance innovative activities that benefit the whole society. Empirical evidence concerning this view is discussed by Aghion and Howitt (1998) and Topel (1999).

tributing resources. Applied to human capital accumulation, this amounts to answering the question why the poor do not implement a comprehensive subsidization of education, and why we observe that, in most countries, parents' incomes have a strong effect on children's educational attainments.[19]

One reason why higher education is biased towards the wealthy may be that the politically decisive voter benefits from a persistent inequality of opportunities and therefore has an interest in limiting educational subsidies. Fernandez and Rogerson (1995) emphasize this possibility by presenting a model in which voters decide about public subsidies to higher education. Their crucial assumption is that, unless subsidies cover most costs of education, the poor who are unable to finance the necessary private expenses are practically excluded from receiving the subsidy. Since the *entire* population is taxed, a partial subsidization of education therefore amounts to a transfer from the poor to the rich, and the middle class therefore has an incentive to align with the upper class in limiting the volume of subsidies. Hence, Fernandez and Rogerson (1995) assert that the political process does not equalize educational opportunities. Note that, as in Perotti (1993), the existence of capital market imperfections is crucial for this result and that the extent of redistribution depends on whether the politically decisive voter is credit-constrained or not.

A related point explaining the persistence of uneven educational opportunities is made by Zink (2001). Enabling people who would otherwise be confined to unskilled work to enroll in university can alter the return on education. Suppose that, in the absence of government intervention, restrictions of higher education are associated with excess supply of unskilled labor. In that case, credit constraints drive a wedge between the skilled wage net of schooling costs and the unskilled wage, providing those who are able to acquire education with a rent. Hence, if credit constraints are not binding for members of the politically decisive middle class, they may hesitate to extend subsidies since they value the protection of their *skill premium* more than the immediate gains from a comprehensive subsidization of education.

3.2.4. Income-dependent propensities to save

The above effects were based on the notion that the amount of post-tax resources is crucial for investment opportunities. A more equal secondary distribution may influence aggregate investment even if there are no capital market imperfections. In particular, if the rich have a higher average propensity to save, as is assumed in standard Keynesian macroeconomic models, aggregate savings are increasing in the degree of inequality (in the sense of second-order stochastic dominance). If the growth rate of incomes depends on aggregate savings, redistribution may therefore reduce agents' future income, and they have to trade off the direct gains from redistribution against the reduction of growth. As a result, the politically decisive voter may reject radical redistribution although his or her current income is below the average.

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[19] See, for instance, Haveman and Wolfe (1995) for a survey of several American studies on intergenerational mobility, and Ermisch and Francesconi (2001) for recent British evidence.

3.3. Persistent redistribution

In the preceding sections, the politically decisive agent weighed immediate gains from redistribution against future losses that resulted from reduced trickle-down effects, a foregone skill premium, or lower aggregate growth. An intertemporal trade-off is also crucial for the following arguments, which are based on the notion that policies cannot be changed frequently so that the extent of redistribution chosen today persists into the future. Persistence of redistribution has two important implications that we shall discuss in turn: first, if individuals have a prospect of upward mobility, it may be rational to abstain from taxation today in order to avoid the possibility of being harmed in the future. Second, persistent redistribution drives down future post-tax returns to investment and thus incentives to invest today. Since aggregate investment determines the future capital stock which, in turn, affects both labor productivity and the tax base, a higher tax rate may lower agents' utilities.

3.3.1. The prospect-of-upward-mobility (POUM) hypothesis

The role of expectations about the future in determining agents' attitudes towards redistribution was emphasized by Hirschman (1973) in his classical paper on the 'tunnel effect'. As Hirschman suggested, optimistic expectations about future income prospects may make agents tolerate current inequality. For this argument to be compatible with rational behavior, one has to assume that redistribution is persistent: if redistributive policies were constantly subject to change, expectations about the future would not matter for agents' current preferences, and the present distribution would completely determine the political equilibrium. On the other hand, expectations about the future play a role if redistribution cannot be reversed easily.[20]

This argument can be formalized in the following way. Agents live for two periods. The common tax rate is set at the beginning of the first period when the politically decisive agent knows his or her first-period income and forms expectations about his or her future income position. The tax rate t is chosen to maximize

$$\tilde{V}(t) = U((1-t)\tilde{y}_1 + t\bar{y}_1) + \beta \int U((1-t)y_2 + t\bar{y}_2)\mathrm{d}F(y_2|\tilde{y}_1) \tag{4}$$

where $F(y_2|\tilde{y}_1)$ is the probability distribution of second-period income given that an agent initially earns $\tilde{y}_1$, and β is the subjective discount factor. Moreover, the aggregate distribution of income across the population is taken to be in a *steady state* and thus constant over time so that average income remains unaltered.[21] However, even if the cross-

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[20] Empirical support for Hirschman's 'tunnel effect' is found by Ravallion and Lokshin (2000) who explore the attitude towards government redistribution in Russia in the 1990s. Their results show that whether an agent favors redistribution is not only determined by his or her position in the current income distribution: for example, rich persons who expect their incomes to decrease in the future prefer a more equal society. Similarly, Alesina and La Ferrara (2001) report that both personal experience of intergenerational mobility and the overall extent of mobility in society decrease preferred redistribution.

[21] This assumption rules out distortions of the tax base arising from taxation and allows us to solely focus on the effects of social mobility.

sectional distribution is time-invariant, an agent's position within the distribution may be subject to changes.[22]

If first-period income exerts no influence on agents' income prospects for the second period, then the conditional second-period income distribution must equal the economy-wide distribution for all persons. Under risk aversion, the median of the first-period income distribution chooses $t = 1$ since he or she benefits from transfers in period 1 and can insure against idiosyncratic income risk in period 2. Hence, if the decision over t is taken behind a complete veil of ignorance, the possibility of social mobility does not alter the basic result of full redistribution. Based on this observation, Putterman (1997) rejects the notion that upward mobility may have a tempering effect on redistribution.

However, if the veil of ignorance is incomplete, the chance to be rich in the future can moderate the redistributive ambitions of the current median voter. More specifically, although the current median voter is poor, the tax rate that maximizes Eq. (4) may be lower than 1 if he or she expects to move up the income hierarchy and receive income above the average. Benabou and Ok (2001) show that this is the case if the transition function linking current income and expected future income is increasing, but concave. The reason why concavity of the transition function is required can be illustrated in a simplified deterministic example. Suppose there is a right-skewed initial distribution of income in period 1 and there is a vote over the rate at which incomes in periods 1 and 2 are to be taxed. Income is assumed to evolve according to a strictly increasing and concave transition function f, i.e. a person with y_1 receives $y_2 = f(y_1)$. Monotonicity of f implies that the agent with median income $\tilde{y}_1$ in period 1 is politically decisive. Moreover, Jensen's inequality guarantees that the individual who earns average income $\bar{y}_1$ in period 1 is *richer* than the average in period 2. If $\tilde{y}_1$ is smaller than, but close to $\bar{y}_1$, and if f is sufficiently concave, then $f(\tilde{y}_1)$ will exceed $\bar{y}_2$. In this case, utility of the first-period median voter reads

$$\tilde{V}(t) = U((1 - t)\tilde{y}_1 + t\bar{y}_1) + U((1 - t)f(\tilde{y}_1) + t\bar{y}_2). \tag{5}$$

While the first term is increasing in t, the second term decreases in t since $f(\tilde{y}_1)$ is above $\bar{y}_2$, and the tax rate maximizing Eq. (5) can well be below unity.[23]

Our example presupposed that the median voter of the second-period distribution, $f(\tilde{y}_1)$ is richer than the corresponding average voter with certainty, which, of course, contradicts the empirical evidence. However, the above reasoning also applies if there is uncertainty about the development of incomes: concavity of *expected* income as a function of current income may induce the current median voter to reject radical redistribution, even if, in both periods, the *realized* income distributions are skewed to the right. In this case, the median voter rationally expects to be hurt by redistribution in the future and thus rejects equalizing economic outcomes today.

The POUM hypothesis, while being theoretically appealing, is not uncontroversial from an empirical point of view. On the one hand, examination of recent US data shows that

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[22] Such a pattern may emerge because agents' incomes change over their life cycle while the demographic composition of the population remains constant.

[23] Cervellati (2002) presents a model in which the concavity of the transition function is determined by the level of productive government expenditure.

"the POUM effect is probably dominated by the demand for social insurance" (Benabou and Ok, 2001, p. 447). Hence, when predicting their future income position on the basis of observed transition probabilities, agents with a reasonable degree of risk aversion value the fact of being insured against downward mobility higher than keeping the prospect of upward mobility. Moreover, Danziger and Ursprung (2001) question whether the POUM hypothesis can explain the order-preserving redistributive policies that are observed.[24] They emphasize that combining the POUM model with realistic transition probabilities yields an optimal taxation policy, which, unlike counterparts in reality, is *not* order-preserving.

A caveat is in order here, however, before one misjudges the significance of the POUM hypothesis on grounds of this criticism. Benabou and Ok (2001) as well as Danziger and Ursprung (2001) assume that, while an agent's income position may be subject to change, the transition probabilities themselves are not affected by the tax rate. However, if future incomes depend on agents' investment decisions, and if persistent redistribution affects these decisions, the transition probability in Eq. (4) depends on the tax rate, which can be captured by adding a subindex t to the transition probability: $F_t(y_2|\tilde{y}_1)$. Establishing a unity tax rate, for instance, effectively abolishes the meritocratic reward system, and the distribution of future pre-tax incomes is therefore no longer independent of current redistribution.[25] Hence, to assess the role of prospects of upward mobility in forming agents' preferences over redistribution, one has to take into account how different tax schemes affect the transition probabilities. This is far more demanding than inquiring into how the median income position changes for given transitions, and it is work yet to be done.[26]

The extent of upward mobility is closely related to the functioning of credit markets. If there are constraints to borrowing, the ability to realize profitable investments—such as education or setting up a firm—depends on agents' initial endowments, and inequality therefore implies unequal chances of economic success. A politically decisive agent who faces a binding borrowing constraint hardly expects to improve on his or her economic position and is likely to promote an equalization of economic outcomes. If, on the other hand, the agent can set up high-yield projects, while agents at the bottom of the income distribution are constrained, the agent is willing to tolerate disparities in order not to share future income with the poor—even at the expense of not expropriating those ranking above in the income hierarchy.[27] Hence, crucial for the median voter's attitude towards egalitarianism is how he or she is affected by the credit constraint.

The preceding discussion has pointed out that people may rationally oppose redistribution if they believe in the possibility of social mobility. Otherwise, initially poor

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[24] A tax-cum-transfer scheme is order-preserving if the mapping which assigns a post-tax income to pre-tax incomes is increasing.

[25] Harms and Zink (2000) show that the latter argument may induce a majority of poor voters to oppose full redistribution although current median income is below the average: in order to keep the option to become rich in the future, they reject equalization in the current period.

[26] Note that, as emphasized by Krusell et al. (1997), such a setup requires explicitly taking account of the interaction between agents' investment decisions and policy preferences.

[27] Harms and Zink (in press) show that this kind of reluctance to redistribute is compatible with a persistently right-skewed income distribution if there is idiosyncratic risk.

individuals expect to remain so forever, and in the absence of incentive considerations they are better off in a more equal society. Piketty (1995) emphasizes the role of learning about social mobility in determining people's attitude towards redistribution. He assumes that agents' beliefs about whether birth or individual effort is decisive for economic success are determined by past family experience. As a consequence, agents whose ancestors experienced social mobility believe that they may move up the social ladder themselves, and societies with a tradition of social mobility should therefore be characterized by a higher tolerance for inequality.[28]

3.3.2. Dynamic incentive effects

Even if the poor do not believe that they will have opportunities to increase their incomes in the future, persistent redistribution may lower their utility if the evolution of the capital stock is driven by agents' investment decisions. Taxation in the future lowers the post-tax return to investment and gives rise to a disincentive to invest. This may be harmful for two reasons. First, since current investment determines the future capital stock, a *dynamic tax base effect* may induce agents to oppose substantial redistribution (Persson and Tabellini, 1994). Second, if future productivity depends on aggregate investment today, and if t negatively affects investment activity, this may limit agents' preferred extent of redistribution. Denoting productivity by $A(t)$ with A decreasing in t, the utility of the politically decisive agent can be written as

$$\tilde{V}(t) = U((1-t)\tilde{y}_1 + t\bar{y}_1) + \beta U((1-t)A(t)\tilde{y}_2 + tA(t)\bar{y}_2). \tag{6}$$

The optimal value of t may now be lower than one even if $\tilde{y}_1 < \bar{y}_1$ and $\tilde{y}_2 < \bar{y}_2$, and the negative relation between A and t may therefore induce poor agents to tolerate some inequality. In Alesina and Rodrik (1994), such a mechanism inhibits massive taxation of capital: although the median voter recognizes that his or her capital ownership is below the population average and therefore supports a capital tax above the growth-maximizing level, the median voter nevertheless refrains from deterring all investments since, in the long run, this would lower the capital stock and thus his or her wage income.

3.4. Remarks

This section has indicated that tolerating disparities may be a rational strategy for the relatively poor if preferences are aggregated in a majority vote. Three aspects of the arguments we have surveyed appear particularly noteworthy. First, in most societies, both economic *outcomes* and economic *opportunities* are distributed quite unequally. Tolerating both sorts of inequality can be rational from the point of view of the politically decisive agent.

Second, by influencing individuals' behavior, redistribution affects an economy's demand and supply structure and thereby market outcomes. As a consequence, the immediate gains from tax-financed transfers may be dominated by the induced effects on the equilibrium allocation.

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[28] For empirical support of this argument, see Corneo and Grüner (2002).

Third, the role of capital market imperfections in determining agents' attitude towards redistribution is ambiguous. On the one hand, limited access to capital markets can obstruct upward mobility, which diminishes the danger of being harmed by persistent taxation in the future. This effect tends to increase the redistributive ambitions of the currently poor.[29] On the other hand, an unequal distribution may be tolerated by the poor in order to allow at least some agents to finance investment projects and to set off a trickle-down process that will eventually benefit everybody. Moreover, capital market imperfections may generate rents that would disappear if redistributive transfers replaced the missing capital markets. If the politically decisive agent is among the winners of limited access to the capital market, a majority in society opposes far-reaching redistribution. Hence, on theoretical grounds, it is not evident whether capital market imperfections lower or increase the demand for redistribution. This is a question left for empirical investigations.

4. Summary and conclusion

In this paper we have reviewed the political-economic arguments concerning why the observed extent of redistribution is limited although most real-world income distributions are markedly skewed to the right.

We began by pointing out that the largest group in society does not necessarily have the greatest impact on redistributive policies. For one thing, forming a majority in society is not equivalent to having a majority at the time of the vote if voting turnouts depend on agents' incomes. Moreover, if there is party loyalty among voters, candidates may choose a moderate redistributive platform in order to increase the likelihood of achieving other objectives, or in order to court rich swing voters. Finally, the 'logic of collective action' suggests that under representative democracy smaller groups can be more effective politically.

The arguments surveyed in Section 3 indicated reasons why a poor majority may refrain from implementing substantial redistribution even if it dominates the political process. This section first focused on the trade-off between equality and efficiency, that is, the redistributional disincentives that eventually affect the primary distribution and reduce the potential size of transfers. We also discussed why the politically decisive agent, despite being poor relative to the average, may be interested in a secondary distribution characterized by some inequality. This may be the case because inequality is a prerequisite for acquiring social status, because agents hope to benefit from trickle-down effects, because they are reluctant to lose their skill premium, or because they know that the marginal propensity to save increases in a person's income. Finally, we focused on the role of persistent redistribution and the prospect of upward mobility: if today's policy cannot be easily reversed and if the politically decisive voter expects to earn an income greater than the average in the future, there may be a preference for modest redistribution although an individual's current income is low.

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[29] Benabou (2000) stresses that the incentive to redistribute may be even stronger if there are ex ante efficiency gains from redistribution. This may result in a U-shaped relationship between inequality and redistribution, and it may give rise to multiple steady-state combinations of redistribution and inequality.

It is important to note that, in many of our examples, limited redistribution results from the fact that a society's middle class chooses to align with the rich. This may be the case if the rich 'bribe' the middle class by offering its members a weakly preferable redistributive scheme, or because inequality allows the middle class to gain social prestige. Moreover, politically decisive members of the middle class may reject radical redistribution in order to maintain their skill premium or because they do not want to share the fruits of their future success with the poor.

Finally, the two strands of literature considered in Sections 2 and 3 can account for limited redistribution, but have different implications from a constitutional point of view. If the political process is biased towards the rich, implying that the will of the poor majority is ignored, then changes of the constitutional framework may have dramatic effects on the extent of redistribution. On the other hand, if it is in the self-interest of the poor to tolerate some inequality, then *any* constitutional design will involve persistent income disparities among agents. In this case, a lack of redistribution is a property inherent in capitalist societies, regardless of the particular design of the political system.

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