

Still a Director's Law?

On the Political Economy of Income Redistribution

by

LARS P. FELD

University of Heidelberg

and

JAN SCHNELLENBACH

University of Heidelberg

Abstract

By drawing on the median voter model, George Stigler (1970) provided a theoretical basis for the alleged empirical regularity found by Aaron Director that income redistribution runs from the poor and the rich to the middle classes. The median voter model is however only applicable to describe modern representative democracies under relatively strong and unrealistic assumptions, which makes alternative equilibria of income redistribution equally plausible. In this paper, we survey the theoretical and empirical literature on the political economy of income redistribution with a particular focus on the more recent results from the comparative political economics literature. The comparisons between presidential and parliamentary democracies, majoritarian and proportional representation systems, direct and representative democracy or federalism and Unitarianism are the most important distinctions to be looked at. In addition, we analyze the impact of these different institutions on income redistribution econometrically by drawing on three different data sets. In contrast to the largest part of the comparative political economics literature, we do however not measure income redistribution by particular spending programs or redistributive taxation, but instead by Gini coefficients which allow to focus on the income redistribution *achieved* by the state.

Keywords: Income redistribution, Gini coefficients, comparative political economics .

JEL Classification: D7, D78, I30, H75, H11

This Version, June 2007. – This research report has been commissioned by the Institut de Recherche en Economie et Fiscalité (IREF), Université Aix-Marseille. We gratefully acknowledge the financial support of IREF.

Mailing Address: Prof. Dr. Lars P. Feld
University of Heidelberg
Alfred-Weber-Institut
Grabengasse 14
D-69117 Heidelberg
Germany
lars.feld@awi.uni-heidelberg.de

1. Introduction

George Stigler, in an influential paper on income redistribution, states an observation attributed to Aaron Director as follows: “*Public expenditures are made for the primary benefit of the middle classes, and financed with taxes which are borne in considerable part by the poor and the rich.*” (STIGLER 1970, p.1) As Stigler notes, this relationship, which will henceforth be referred to as Director’s Law, was found by Director through inductive reasoning, based upon empirically observed public spending decisions. Stigler, on the other hand, sets out to lay a theoretical foundation for Director’s Law, and the core of his argument is that the middle income classes dominate political processes under democratic decision-making. Obviously, this argument of middle class domination is related to a wealth of earlier contributions, notably those concerned with the median voter theorem, which point in the same direction. Also, a number of later contributions following Stigler have made more refined arguments regarding the influence of general and special interests on political outcomes, as well as regarding the impact of political institutions.

We discuss the relevant aspects of the literature in this paper. Section 2 briefly sums up the argument made by Stigler himself, and surveys the relationship to earlier contributions to the theory of democratic choice. In Section 3, the outcomes expected on the grounds of alternative theoretical frameworks, e.g. probabilistic voting, are discussed. Section 4 reviews the literature on the impact of political institutions on income redistribution by focusing on the distinctions, meanwhile familiar in the comparative political economics literature, between presidential and parliamentarianism, plurality rule and proportional representation, direct and representative democracy as well as federalism and Unitarianism. From thereon, we will take a closer look at the data ourselves. A descriptive overview is given in Section 5, and an econometric analysis to test predictions from Section 4 is undertaken in Section 6 using two cross country data set and data from Switzerland. Finally, Section 7 concludes.

2. Director’s Law and the dominance of the middle classes

2.1 Stigler’s perspective on Director’s Law

First of all, it is important to note that Director’s Law does not focus on explicit schemes of income redistribution, such as social welfare programs, but on the distributive effects of the budget as a whole. If, for example, the tax system was very progressive and a large chunk of public funds was spent on public goods preferred by the middle classes, but less so by high

income earners, then Director's Law would be supported by the evidence. Every governmental activity has some redistributive effects (ARANSON and ORDESHOOK 1981), and their sum needs to be considered in evaluating whether Director's Law holds in the real world or not. Stigler enumerates a number of publicly provided goods or transfers which he presumes to be targeted primarily at middle-income households. Among them are obvious suspects, such as tax exemptions granted for educational purposes, and the provision of schools and universities from which a middle-class offspring is significantly more likely to graduate compared to one of a lower income household. But Stigler argues that middle-class targeting also underlies less suspicious spending categories, such as police forces. The poor, in contrast to the middle classes, have not too much property to be protected, and the rich would principally be able to provide for private protection of their property themselves – in fact, this is what they usually do even with a public enforcement of property rights in place. Even a regulatory measure such as a minimum wage law can be interpreted as an attempt to protect earners of reasonable incomes from the potential competition of low-income earners.

On the theoretical side, Stigler sketches a fragmentary model in which voters form minimum winning coalitions, and are sorted along a one-dimensional scale according to their income. It is, of course, by no means obvious that this should be the case in real-world collective decision-making. It is easy to conceive of, e.g., differing regional interests that interfere with or even supplant conflicts of interest that exist between households with different incomes. Stigler argues, however, that over the long run of recent centuries, technological progress has made it easier to administer income taxes, and has also led to the emergence of a host of new expenditure programs that can be targeted to specific income groups. Thus, according to Stigler, other sources of political conflict such as regional interests may have been dominant in the past, but conflict between different income levels is dominant today. If this is indeed the case, then, in order to theoretically corroborate Director's Law, it is necessary to show that the middle classes will always (or at least under very general conditions) be part of the minimum winning coalition.

Generally, under the assumptions discussed here, application of the median voter theorem would not be sufficient to reach this conclusion. We have a multi-dimensional political issue to decide, with decisions on the tax system and on multiple spending programs being made simultaneously, and the assumption that voters' ideal points are distributed in the policy space such that a multi-dimensional median voter equilibrium exists would be rather strong (DAVIS, DE GROOT and HINICH 1972). Stigler, therefore, chooses a different approach. He ventures to

show that, to extend a given coalition, it is always rational to include an additional poorer rather than another richer household, simply because adding a poorer household sustains the opportunity to fiscally exploit the richer household. The rationally assembled minimum winning coalition would therefore always contain the median household and all poorer households. A more precise statement of Director's Law according to George J. Stigler would thus point out that, in the modern age where taxes and spending can be targeted to specific income groups, middle-class *and* poor households form a coalition to fiscally exploit higher income households. In other words, the theoretical framework constructed by Stigler is not completely congruent with Director's Law as it was stated at the outset.

2.2 The median voter approach to redistributive politics

If the conditions for a median voter equilibrium hold, either in direct-democratic decision-making (BLACK 1948) or in a representative-democratic framework (DOWNS 1957), then the prediction made by Director's Law appears to be hardly surprising, at least on first sight. If the distribution of market incomes is not too skewed either to the left or to the right, we can expect the median voter to be a member of a medium stratum in terms of income, although some deviation of the median income from the average income is of course very likely. Contrary to Stigler's framework, organizing transfers towards the middle classes is not a matter of coalition formation in this class of models. Rather, the enforcement of the median voter position is the only attainable Nash equilibrium because either any alternative policy proposal will lose a pair-wise vote against the median voter's position (direct democracy) or any representative making an electoral promise that deviates from the median voter's preferences will be faced with a zero chance of winning the election (representative democracy). But which policy exactly does the median voter want to see implemented?

In a pioneering paper on the distributive effects of majority rule, ROMER (1975) analyses voting on a linear income tax schedule. With a given public budget constraint, the decision on the tax rate simultaneously determines the value of a lump-sum parameter which may, if a negative value for this parameter results, establish a negative income tax. If a negative income tax is put into place, this is particularly beneficial for individuals with low ability and corresponding low market incomes. For some feasible parameter values, they will pull out of the labor market completely and dwell on transfer payments. With a decision solely to be made on the value of the tax rate, and the assumption of single-peaked preferences, the model can be analyzed by looking at the median voter equilibrium. Romer shows that if the skill level and the resulting market income of the median voter are sufficiently high, then the lowest possible tax

rate will be chosen. This results in a positive lump-sum parameter (i.e., the absence of a negative income tax) and a regressive income tax system. If, on the other hand, the median voter's market income is below the average, then an increasing skewness of the income distribution will increase his taste for redistribution. For a similar problem, ROBERTS (1977) shows that results along the lines of Romer are robust even under more general conditions which need not include single-peaked preferences.

MELTZER and RICHARD (1981) have produced one of the most influential median voter analyses of redistributive government. Aimed at explaining the seemingly perpetual growth of government, they suspect that income redistribution is the prime motive driving this trend. The set-up of the model is elegant and simple: A proportional income tax with a uniform tax rate is levied on all incomes generated in a model economy. The revenue is used to distribute identical lump-sum transfers to all individuals, regardless of their personal market incomes. Obviously, the demand of the median voter for redistribution increases with the distance between the average and her own market income. As in the models of Romer and Roberts, income redistribution increases whenever the distribution of market incomes becomes more skewed towards high-income earners, provided that the median income is below the mean income. Meltzer and Richard argue that a continuous extension of the franchise to less and less productive individuals through history has induced an increasing demand for redistributive policies: Today's median voter earns a relatively lower market income (compared to average income) than median voters decades or centuries ago.

There are a number of problems associated with the Meltzer-Richard model, in particular the question of how an extension of the franchise can be explained within the framework of the model, since it would always conflict with the interests of the median voter in the *status quo ante*.¹ But these problems are only of minor importance with regard to Director's Law. More interesting is the fact that the Meltzer-Richard model predicts a redistribution either from the relatively rich to the relatively poor (if the median voter is sufficiently poor), or no redistribution at all (if she earns a market income above the mean). In this respect, the result is consistent with Stigler's hypothesized fiscal exploitation of the rich by a coalition of the middle classes with the poor. It is, however, not consistent with the prediction of the more strictly phrased Director's Law, which expects a redistribution from the rich *and* from the poor to the benefit of the middle classes. The Romer-Roberts models on the other hand also predict a

¹ See MUELLER (2003), Chap. 21 for a discussion of open questions in Meltzer-Richard and related models.

redistribution from the poor to the median voter through a regressive tax system if the median voter is sufficiently productive.

The danger of regressive budgets is aggravated if, on the expenditure side of the budget, the supplied goods have more or less peculiar characteristics. For example, FERNANDEZ and ROGERSON (1995) discuss the case of a government subsidy which can be thought of as a subsidy for investing in human capital through secondary education. The subsidy is only awarded to those who indeed make such an investment, and it does not cover the full costs of doing so. Relatively poor individuals, confronted with imperfect borrowing markets, may lack access to secondary education even taking the subsidy into account. Fernandez and Rogerson show that at least some majority voting equilibria are characterized by a regressive overall budget.

It is, thus, possible to replicate the general conclusions of Director's Law within the framework of a median voter model, i.e. when the policy space is reduced to one dimension and the only choice to be made is that of a uniform tax rate in a linear income schedule, under the restriction that enough revenue to finance a given budget needs to be generated. Moreover, the Romer-Roberts models provide additional predictive power by informing us that the direction of income redistribution will depend on the relative income position of the median voter: The wealthier the middle classes (who, by assumption, include the median voter), the larger will be the burden that is put upon the poor. Furthermore, the models also inform us on the limits of income redistribution. Tax base effects, in particular resulting from a reduction of labor supply with increasing tax rates, prevent a median voter with less than average market income to choose extremely high or even confiscatory tax rates. Further tax base effects of attempted excessive taxation can be easily conceived of, such as out-migration of heavily taxed individuals (e.g. EPPLÉ and ROMER 1991) or tax evasion (e.g. SCHNELLENBACH 2006).²

There is an important empirical caveat to these results, which has its roots in the construction of median voter models in general: a possibly differential rate of political participation across different income levels. If such an uneven and asymmetrical distribution of participation rates in the voting process occurs, then this will move the equilibrium away from the original median voter's preferences. To be more precise, the median voter will not coincide with the median citizen. Indeed, some empirical evidence suggests a positive relationship between income

² BORCK (2006) discusses a model with both tax evasion and voting in which this baseline result even reverses. He shows that under fairly plausible assumptions, the middle classes will carry the bulk of the burden of the budget, with the rich evading taxes, the poor benefiting from targeted transfers and the middle classes paying taxes and not benefiting to a large degree from transfer payments.

and the individual probability to vote.³ If this is the case, the decisive voter will be characterized by a higher income than the median citizen, which ought to be associated with a lesser amount of income redistribution towards the middle classes from the upper end of the income distribution, and maybe even a regressive overall budget. BÉNABOU (2000) has discussed this problem by calibrating a median voter model with data for political participation by income percentile in the United States, and he found that the pivotal voter is clearly characterized by a significantly higher income than the median citizen.

As EPPLE and ROMANO (1996) show, public provision of private goods may work in the other direction. Suppose a private good with a normal, positive income elasticity of demand is publicly supplied. Suppose further that for some, relatively high threshold income it becomes less costly for an individual to privately buy this good, rather than to pay for it through an income tax system. In this case, political demand for the good will simply be truncated at this threshold income level: It rises with income until this point, and is zero thereafter. This, however, necessarily also implies that the quantity of the good demanded in the majority voting equilibrium is below that preferred by the individual earning the median income. There is, in this sense, a coalition of low and high income earners against the middle classes, which, by itself, would flat-out contradict Director's Law. BORCK (2007) surveys a number of other models for other types of expenditure with similar properties, such as public pension systems, that also yield "ends against the middle" distributional results. These considerations cast serious doubts on Director's Law for a number of important publicly provided goods that usually account for a large portion of the budget in developed countries. In combination with the voter participation effect, on the other hand, the net effect on the place of the decisive voter in the income distribution might eventually more or less cancel out.

2.3 Redistribution in models with multi-dimensional policy spaces

The mechanisms of redistribution discussed in the median voter models are necessarily crude, simply because the modeling technique with its requirement of uni-dimensional policy issues prevents the introduction of complex policies such as a non-linear income tax or multiple, targeted spending programs. HARMS and ZINK (2003), drawing on an argument proposed by BREYER and URSPRUNG (1998), provide a simple example of how a non-linear tax might change the picture. Let a society be comprised of three individuals earning incomes $y_1 < y_2 < y_3$, with an y_2 that is strictly smaller than the mean income y_M . In this case, there exists a simple non-linear income tax schedule which leaves Individual 1 and Individual 2 untaxed, and im-

³ See e.g. FREY (1971), CONWAY (1985), NAGEL (1987) as well as ROSENSTONE and HANSEN (1993).

poses a tax rate $t=(y_M-y_2)/y_3$ upon the wealthy individual's income. The entire tax revenue is used to finance a transfer y_M-y_2 towards Individual 2, which makes her exactly indifferent between the non-linear tax and an alternative budget proposal consisting of a linear income tax with $t=100\%$ and equal per-capita-transfers to all individuals. Individual 3, on the other hand, strictly prefers the non-linear income tax, since it leaves her with a strictly higher disposable income. The introduction of a simple non-linear tax thus helps the relatively wealthy individuals to lure the middle classes into a collusive arrangement at the expense of the poor. In fact, if we look at the overall budget, the bottom-line of this simple example is very much in the spirit of Director's Law: We have a progressive tax which burdens the wealthy individual, and we have a transfer scheme on the expenditure side that entirely benefits the middle classes, rather than the poor. Overall, the budget clearly is regressive if we compare Individual 1 and 2, and progressive from Individual 2 to 3.

Obviously, this is a very simple non-linear tax schedule, and it is only claimed that it always wins a vote against a linear income tax with equal redistribution, but *not* that it is a universal Condorcet winner. In fact, such a universal Condorcet winner will generally not exist in models with deterministic voting and multi-dimensional policy spaces. In some recent works of John E. Roemer and coauthors (e.g. ROEMER and LEE 2006, ROEMER and VAN DER STRAETEN 2006), it is argued that racist sentiments may be dominant over concerns for redistribution.⁴ Two mechanisms are presumed to be at work here: There is a direct effect, which results from the fact that, if low income correlates strongly with particular ethnic origins, wealthier majorities may be reluctant to redistribute towards groups with which they believe to have little in common, culturally and otherwise. But Roemer also hypothesizes that there is an indirect effect, resulting from the fact that right-wing, race-conscious parties often also advocate low income redistribution in general – which leads voters in whose political preference ordering the former issue is lexicographically superior to the latter to support such parties, even if they would otherwise benefit from larger scales of redistribution.

While one can certainly argue against Roemer's points in detail – modern extremist right-wing parties tend to bundle social populism and a demand for more, rather than less redistribution with racist positions – his arguments nevertheless illustrate the theoretical troubles that are associated with discussing redistribution in multi-dimensional policy spaces. There is a multitude of principally conceivable equilibria, each characterized by different implications for redistributive policies. The epistemic point of departure for a theorist in such a framework

⁴ See also ALESINA et al. (2001) for a similar argument.

often consists of an empirically diagnosed state of affairs which is to be explained, rather than the formulation of general, predictive statements. In Roemer's case, the empirical diagnosis was a surprisingly low scale of redistributive politics to the benefit of low income groups (which is in line with Director's Law), and the explanations range from the racism-related argument discussed above, to a dominant role of other ideological or even religious issues over distributional problems in the multi-dimensional political arena (ROEMER 1998).

BOHN and STUART (2003) choose a different strategy to avoid the indeterminacy and instability inherent in politico-economic models with multi-dimensional issues. Instead of imposing a dominant issue on the political process, they model the decision on a non-linear income tax schedule in a citizen-candidate framework. These models rest on the central tenet that candidates for political office cannot commit to any policy other than the one that maximizes their personal utility (see ALESINA 1988, OSBORNE and SLIVINSKI 1996 or BESLEY and COATE 1997 for pioneering works in this respect). Bohn and Stuart let the individuals in their model differ only in productivity, and they establish that the candidate with the median productivity is a Condorcet winner. The winning candidate establishes a non-linear tax schedule with a kink, and possibly even negative marginal tax rates, near his own income level and positive marginal tax rates everywhere else – which again is an intuitively plausible result that is perfectly in line with Director's Law, provided the actual distribution of productivities is such that the individual with median productivity is indeed a representative of the middle classes.

Essentially, the discussion of the different approaches in this subsection has shown that, even when the complication of a multi-dimensional issue space is introduced, results in the spirit of Director's Law can be obtained as equilibrium outcomes. The methodological problem is, however, that the necessary assumptions become much more arbitrary and less general, as our examples have illustrated.

3. Beyond pure self-interest and spatial-deterministic voting: How do individuals decide on income redistribution?

The models that we have discussed so far have in common that they rely on purely self-interested and perfectly informed individual decision-makers in the political sphere. These, however, both appear to be rather questionable assumptions, given the peculiar incentives for individual deliberation in collective decision-making. Therefore, we will discuss the implications of making weaker assumptions regarding self-interest and the level of individual information regarding the political process.

Germany. These shares, however, account for *all* spending on transfers and social policy programs. Targeted transfers directed only towards the poor are, in turn, a more or less small part (depending on country) of these overall social expenditures. Put differently, targeted social spending towards the poor does account for significant shares of government spending in developed countries, but they play a far from dominant role. It is therefore worthwhile to remind ourselves, at this point, of Stigler’s emphasis that in order to empirically test for Director’s Law, we must look at the incidence of the entire budget, with a large portion of spending being assigned to public goods and transfer programs which may, after all, benefit the middle classes more than anyone else.

Table 1: Overall Share of Expenditure on Social Transfers (incl. in Kind) from Total Government Expenditure in 2004

Country	
Austria	48.40%
Belgium	46.78%
Canada	25.30%
Czech Republic	39.88%
Denmark	33.45%
Finland	37.37%
France	43.61%
Germany	56.51%
Greece	34.51%
Hungary	34.62%
Iceland	19.05%
Ireland	31.65%
Italy	41.16%
Netherlands	42.38%
Norway	37.21%
Poland	42.31%
Portugal	36.98%
Slovak Republic	33.59%
Spain	36.74%
Sweden	36.75%
Switzerland	35.39% (2003)
United Kingdom	30.73%
United States of America	32.90%

Source: OECD (2006), National Accounts of OECD Countries: Detailed Tables 1993/2004, Volume II, OECD, Paris 2006.

3.2 *Probabilistic voting and redistribution*

The second problem that we have to discuss in this section with regard to voting decisions on redistribution is the problem of relatively or even completely uninformed voters. The econom-

ics of voting needs to cope with several fundamental problems. One is the difficulty to explain why individuals vote at all, given that an individual is almost certainly not decisive for the outcome. The other, and for us more interesting, issue is that of rational ignorance. Even if some sense of civic duty leads us towards the ballot on election day – which usually involves rather low opportunity costs – we would need to invest much more time and effort into gathering knowledge on candidates, programs and issues to make prudent, well-informed decisions.

The modeling approach of probabilistic voting is an instrument to deal with rationally under-informed voters. With probabilistic voting, voters react with a certain positive probability if candidates change their positions on political issues. The fact that this probability is less than unity can be intuitively interpreted as reflecting the fact that individual voters receive this signal with a probability less than unity, and might as well ignore it. A different interpretation is that individuals are attached to a certain candidate or party, e.g. because of ideological sympathies or a personal affinity, and will therefore not punish her with certainty for deviating from their ideal positions on political issues. A welcome side-effect of probabilistic voting models is that, somewhat paradoxically, they allow for the identification of stable equilibria even in multi-dimensional issue spaces, where deterministic voting implies instability (see COUGHLIN 1992 for a survey of the approach).

LINDBECK and WEIBULL (1987) apply this approach to redistributive politics. While earlier models, such as COX and MCCUBBINS (1986), suggested that political candidates (or parties) will tailor their programs according to the wishes of their core support groups, Lindbeck and Weibull proposed a different result: Electoral platforms are framed such that they appeal to groups of swing voters. The result of Cox and McCubbins supports the partisan model of politics, where governments composed of leftist parties will reliably regulate markets and redistribute to the poor and low-income earners, while right-wing governments enforce supply side policies, low taxes and only a small magnitude of income redistribution. The Lindbeck and Weibull model, on the other hand, leads us to expect sophisticated pork-barrel politics, although the type of pork-barreling differs from the classical approach (see e.g. WEINGAST et al. 1981). There, pork-barreling takes place after the election, in parliament or in committees, where representatives need to organize a minimum winning coalition through log-rolling of their individual special interests. In the Lindbeck-Weibull model, on the other hand, pork-barreling takes place *ex ante*. Candidates anticipate the reaction of voter groups towards suitable campaign promises, and court those who are expected to react particularly strong.

This implies a step away from the general interest politics that was most important to our discussion so far. The median voter models in Section 2, for example, centered around general tax and transfer schemes with no or little room for discrimination between different groups of voters. Here, in contrast, targeting of transfers, public goods and taxes towards particular groups of voters is at the centre of the theoretical models – special interest politics enters the stage. With regard to Director’s Law, this immediately raises the question how homogeneous and how mobile in political terms the middle classes are, relative to other income groups. It is not likely that there is a general answer to this; rather, it is an empirical question which will yield different answers for different societies. Curiously, STIGLER (1970) himself has assumed that political participation increases with income. If the rich are also a politically mobile group, and homogeneous enough to exhibit common individual reactions to changes in electoral platforms, then this would, in the current framework, lead to the prediction that the rich ought to be better represented than the middle class. On the other hand, the sheer size of a group of ideologically unattached middle class voters vis-à-vis the group of high income earners may be a sufficient reason for candidates to shape their platforms more according to the preferences of middle income earners. Or the middle class may be splintered into heterogeneous and politically immobile ideological subcultures, which would imply a rather small degree of political impact for them. Without detailed knowledge about actual political configurations in real-world economies, it becomes difficult to make predictions regarding the validity of Director’s Law.

Another important application of probabilistic voting models to the problem of redistribution is the model by DIXIT and LONDREGAN (1998). They extend the theoretical framework sketched above in two ways: (i) The assumption is made that parties or candidates do not only care for being elected, but also care for the ideological position they take, and (ii) the ideological position of individuals does include a value judgment on the problem of income redistribution. There are two extreme social welfare functions, one (right-wing) function that cares only about efficiency and not at all about distribution, and one (left-wing) that cares only about distributional equality and not at all about efficiency. Every party and voter is assumed to maximize some weighted sum of these two extreme social welfare functions. Groups of voters are defined according to their income status, and every group is assumed to be heterogeneous, but nevertheless identifiable according to ideological characteristics: Lower income groups are characterized by more left-wing individuals, and the share of right-wing individuals rises with income. The result, which Dixit and Londregan admit to depend on the specific functional forms chosen in their model, is that tax policy is used mainly to achieve ideological

purposes. This leads to general income taxes with uniform marginal tax rates, and with the right wing party tending towards offering a lower marginal tax rate than the left wing party. Pork-barreling on the other hand is conducted only on the expenditure side of the budget.

The Dixit-Londregan model includes a plausible line of arguments that can help to corroborate Director's Law: The economic interests of the rich and the poor are closely entangled with their ideologies. The level of private consumption of the poor depends to a large degree on them receiving transfers, and the level of private consumption of the rich depends to a large degree on a policy that is associated with small efficiency losses. Both rich and poor are therefore, on average, very reluctant to vote for a party that takes an ideological stance opposing their private interests. The middle classes are politically much more mobile between the left and the right party, and therefore will benefit from electoral platforms being framed in their interests. A plausible equilibrium is thus one with a uniform income tax and spending programs that are largely to the benefit of the middle classes – which is in accordance with Stigler's phrasing of Director's Law.

Again, some cautioning remarks are in order. Probabilistic voting models that focus on the revenue side of the budget come to rather different conclusions regarding the tax system and predict a much more fragmented income tax schedule, complete with a pork barrel of targeted tax deductions to the benefit of small, politically mobile groups of voters (see e.g. HETTICH and WINER 1999). As so often, the result that corroborates Director's Law relies on a set of plausible, but by no means necessary assumptions, and models with other plausible assumptions yield different predictions. This leads us to the question whether some more unambiguous theoretical results can be reached if the institutional framework of decisions on income redistribution is more explicitly included in the theoretical analysis.

4. Political institutions and decisions on income redistribution

4.1 Direct versus representative democracy

In Section 2, in the discussion of the median voter approach to redistributive politics, we have briefly hinted at the fact that under a restrictive set of assumptions, both direct and representative democracy are characterized by the median voter's bliss point as the only feasible political equilibrium. Under these assumptions, direct democracy and Downsian party competition are equivalent. Under less restrictive assumptions, however, there are reasons to expect significant differences between the two systems. An important aspect is the issue of political

control; both the median voter model as well as the probabilistic voting models discussed in Section 3 assume perfect commitment of representatives to an electoral platform once it is announced. This is obviously not warranted by empirical observations: That elected representatives deviate from electoral promises is the rule, not the exception. Political contracts between voters and representatives are necessarily incomplete (LAFFONT 1999), and they cannot be enforced by an impartial third party that could act as a referee (BRENNAN and BUCHANAN 1980, DIXIT 1996, SCHNELLENBACH 2004).

Generally, it can thus be argued that instruments of direct democracy, in particular the referendum, but also the initiative, narrow the leeway for deviations from the median voter position (see POMMEREHNE 1978, GERBER 1999, FELD and KIRCHGÄSSNER 2001, MATSUSAKA 2004).⁷ This is straightforward in a uni-dimensional policy space, where for some degree of deviation from the median voter's bliss points, the benefit of a referendum vis-à-vis the costs of organizing it will become sufficiently high. Thus, if we took the Romer-Roberts models as our analytical point of departure, we would be led to conclude that direct democracy works to reinforce Director's Law, where self-interested representatives deviate from the median voter equilibria, e.g. by setting aside some portion of tax revenue as rents for themselves. Matters are not that simple, however. BESLEY and COATE (2002) analyze the effects of the initiative in a multi-dimensional policy space. The initiative allows the break-up of implicit or explicit pork-barreling agreements by enforcing a popular vote on single issues where the gap to the median voter's bliss point is particularly large. If we thus took the Dixit-Londregan framework as our point of departure, then the introduction of the initiative as an additional instrument would actually cast some doubts on the robustness of the Director's Law result. Of course, as in the first example, the initiative might help correct deviations from electoral promises. But there is another channel of influence: The representative-democratic result in the Dixit-Londregan model is, as we have seen, characterized by expenditure decisions along the preferences of middle-income earners. But as we have seen in our discussion on the private provision of public goods, the median voter's bliss point is on some issues not identical with the bliss point of the median income earner. In these instances, enforcing the median voter's bliss point on selective issues through issue unbundling will actually move the economy away from the Director's Law equilibrium.

⁷ In the longer run and starting from a federal status quo, voters also may anticipate that a centralization of government activities will enable representatives to deviate more easily from the median voter's preferences. In this case, direct democratic institutions prevent centralization where it would be conducted by representatives (see FELD et al. 2007, SCHNELLENBACH et al. 2006).

A glance at some of the empirical studies concerned with the effect of direct democracy on fiscal policy is also instructive. Several studies for the US state level and for Swiss cantons indicate that public expenditures are lower where direct democratic instruments are available (e.g. MATSUSAKA 2004, FELD and MATSUSAKA 2003a). The spending categories that are primarily affected by this effect are welfare expenditures, but spending on categories which Stigler had identified as important for Director's Law – culture, education and police – is also negatively affected by direct democracy (SCHALTEGGER 2001, FELD, FISCHER and KIRCHGÄSSNER 2006)). A closer proximity of political outcomes to median voter bliss points can also be found in empirical studies (POMMEREHNE 1978, GERBER 1999). And finally, direct democracy appears to pressure governments into financing excludable public goods through user charges rather than general taxes (FELD and MATSUSAKA 2003b).

Taken together, these results appear to suggest that the funds available for redistributive politics are smaller under direct than under representative democracy. The increased pressure to finance state activity through user charges pushes fiscal policy into the direction of an adherence of the benefit principle, which by definition precludes redistribution – although a strict imposition of the benefit principle by charging LINDAHL prices can of course not be achieved in practice. FELD, FISCHER and KIRCHGÄSSNER (2006) however find for Swiss data that direct-democratic control only reduces the financial means that are invested into the process of income redistribution, while the degree of income equalization remains unchanged (see *Section 6* below). In other words, direct democracy appears to lead to a more efficient process of income redistribution, without having a significant negative impact on income equality in the secondary income distribution. The evidence regarding the effect of direct democracy on redistribution does therefore predominantly hint at efficiency gains and a reduction of rents that are accrued by representatives and bureaucrats. The overall effect from the perspective of Director's Law is on the contrary rather ambiguous thus far.

4.2 Presidential versus parliamentary democracy

There are fundamental differences between presidential and parliamentary democratic regimes. In the former, the president as head of the executive branch potentially faces a parliamentary majority that is composed of other parties than his own. He then lacks the instrument of a vote of confidence (see HUBER 1996), which in a parliamentary regime can be used to threaten the dissolution of parliament. Since reelections are associated with uncertainty about their future political career for many members of parliament, the head of the executive in a parliamentary regime, whose power rests on a majority supplied by his own party (or coali-

tion), often has additional bargaining power vis-à-vis the legislative branch. Seen from another perspective, the president in a presidential regime is exposed to additional checks and balances in comparison to his colleague from a parliamentary regime. There is another effect, which is of particular interest with respect to redistribution: In a presidential regime, at least in times of divided government or a *cohabitation*, the decision-making process needs to include a comparatively broader political base. It becomes much more difficult to target transfer schemes towards the supporters of one's own political party, because a compromise with an ideologically opposing majority in parliament needs to be engineered. A congressional veto can deny the president the power to establish such transfers (or any other spending programs).

PERSSON and TABELLINI (2000, chap. 10) present a model that attempts to capture the effects of legislative cohesion on policy. In their model on congressional decision-making in a presidential regime, they assume that representatives from different electoral districts are in charge of agenda-setting in committees on taxing and spending. First, congress decides on the level of taxation, then on the allocation of spending. Persson and Tabellini propose the result that the representative who is in charge of drafting a proposal for taxation will prefer the lowest admissible tax rate, because he anticipates that his colleague in charge of spending decisions will channel next to all of the spending into his own district. He can do so because the other representatives engage in a Bertrand competition – they will, in equilibrium, offer their approving vote for any diminutively small amount of public funds being spent in their district. The resulting allocation is therefore characterized by too low spending, but also by a minimized level of rents in government. Instead of speaking of *districts*, one could just as well assume that the different members of parliament are associated with different special interests to which they would like to allocate public funds.

In the parliamentary regime, in contrast, the decision on taxing is bundled with the decision on spending. Either a majority approves of the proposal, or a crisis of government is entered which may end with a dissolution of parliament and a loss of seats of current representatives. This incentive structure leads to an equilibrium with higher overall spending and higher taxes – which is efficient in this framework – but also with higher rents. A coalition that is stabilized by the threat of government crisis does not have the problem of spending being directed only to one district (or special interest), instead all coalition members can secure their share of spending. The downside of this institutional framework, apart from the high level of rents, is a fiscal exploitation of those who are not members of the stable minimum winning coalition.

The Persson-Tabellini approach can be criticized for putting a lot of emphasis on congress, while leaving the role of the president a bit out of the picture, although including his veto power would not qualitatively change the results too much. A more important point of criticism is that in the United States, congress is perceived to be plagued by pork-barreling and very open to influence by lobby groups, which is not accounted for in the model at all (see e.g. KROSZNER and STRATMANN 1998 for a recent model and evidence regarding the actual workings of congress). Presidential regimes are by far not as immune against these vices as the Persson-Tabellini approach suggests on first sight. Nevertheless, the empirical evidence clearly supports the hypothesis that the overall size of government is comparatively smaller in presidential regimes (PERSSON and TABELLINI 2003). The hypotheses that we should see less pork-barreling under presidential regimes is, on the other hand, only weakly supported. The sign found by Persson and Tabellini is in accordance with the hypotheses, but the effects are mostly insignificant.

The impact on redistributive politics of having a presidential regime may thus eventually be rather one of magnitude than of structure. Government shrinks, but it is still able to cater to special interest, and thus also to bundle expenditure proposals that fit the preferences of the middle classes, if the electoral incentives are such that this promises to be an election-winning strategy. This leads us to the next differentiation between formal political institutions: Does the electoral rule play a role for the outcome of redistributive policy?

4.3 Plurality rule versus proportional representation

A candidate running for office as a British Prime Minister is in the comfortable position of needing, at the extreme, only the support of about 25% of the electorate to win the election. Her party needs a majority of 50% plus one vote in 50% plus one electoral districts to secure a majority in parliament that is sufficient to elect the Prime Minister. This electoral rule has a number of further implications. According to Duverger's Law, the number of competing parties will in the long run converge to two. The reason is strategic voting; individual voters who do not want to waste their vote on a candidate who has no realistic chance to win will restrict their choice set to those candidates who have a reasonable probability of winning. Even while there are some counter-examples of successfully lasting third parties under plurality rule, such as the Liberal Democrats in Great Britain, the empirical evidence on the whole is rather impressively in support of Duverger's Law (see MUELLER 2003, chap. 13.5). This, in turn, generally excludes the need to form coalition governments.

From these considerations, it follows that plurality rule will produce relatively targeted expenditure schemes. It is possible to build a government upon comparatively narrow support in the electorate, and this makes spending on targeted transfers, or excludable imperfect public goods, more alluring than spending on pure, economy-wide public goods. Proportional representation on the other hand is usually associated with multi-party parliaments and the need to form coalition governments with more or less diverse interests. Furthermore, with a single, nation-wide election, a government needs to win the support of 50% plus one voter – it needs to rest on a wider basis than in the case of plurality rule. Consequently, a regime operating under proportional representation could be expected to produce broader expenditure programs, and in the case of income redistribution more general transfer schemes (PERSSON and TABELLINI 1999). A somewhat surprising prediction regarding the overall size of government, however, is that plurality rule will lead to a larger overall government, with the reason again being the opportunity to fiscally exploit those who are not members of the minimum winning coalition, and the minimum winning coalition being obviously smaller than in the case of proportional representation (PERSSON and TABELLINI 2000, chap. 8).

As far as this last theoretical prediction is concerned, the data suggest otherwise (ATKINSON et al. 1995, AUSTEN-SMITH 2000, PERSSON and TABELLINI 2003). Countries with proportional representation are characterized by significantly higher tax rates, and significantly less inequality in the secondary, post-tax income distribution. The prediction of more narrowly targeted schemes of income redistribution under plurality rule is, on the other hand, empirically well supported. For a panel of OECD countries since the 1960's, MILESI-FERRETI, PEROTTI and ROSTAGNO (2002) find that transfer payments are indeed strongly positively related to the degree of proportional representation. But what does this mean in detail with regard to Director's Law? It seems to be straightforward that the targeting of expenditures under plurality rule is to a large degree a geographical matter. Those pivotal electoral districts that can be won over with some targeted spending, e.g. for local infrastructure, receive an extra portion of public goods or transfers, while those districts that are hopelessly lost for the incumbent government receive nothing or are even fiscally exploited if such discrimination is possible. However, it is important to note that if the electoral districts are sufficiently small, there will also be differences regarding the average income levels of voters between districts, given that there is some degree of regional sorting of individuals according to their income levels. In that case, targeting expenditures geographically and targeting them along voters' incomes are two sides of the same coin. Plurality rule does then accommodate a fiscal policy along the lines of Director's Law, because it enables a government to rest upon a relatively narrow base of pre-

dominantly middle income districts, while paying disregard to predominantly poor or rich electoral districts. If there is pronounced regional sorting according to income, we can thus expect to observe Director's Law in a more strictly executed fashion under plurality rule than under proportional representation.

4.4 Unitary versus federally organized countries

In a perfect TIEBOUT (1956) equilibrium of local government, (decentralized) income redistribution is not possible. In such a model economy, there is a supply of a sufficient number of heterogeneous jurisdictions, such that each individual resides, together with other individuals who have similar preferences, in a jurisdiction that supplies exactly the quality and quantity of public goods that she prefers, and pays a lump-sum tax that is not higher than her willingness to pay. The benefit principle is enforced and more importantly she will make use of her exit option and thus avoid being taxed, if the government attempts to tax an individual with the purpose of income redistribution (i.e. without offering her additional public goods). STIGLER (1957) himself therefore argued that the task of income redistribution ought to be delegated to the central level, and not be attempted by sub-central level of government.

Nevertheless, we frequently empirically observe attempts of income redistribution through transfer payments on the sub-central level. An explanation for this is given by PAULY (1973), who takes up the thread left by HOCHMAN and RODGERS (1969) and assumes interdependent utility functions providing arguments for income redistribution as a local public good. As long as the populations of given jurisdictions are heterogeneous with respect to their incomes, rich individuals will be willing to consent to some targeted transfers to the poor. In the real world with a limited number of jurisdictions in supply, and with positive costs of mobility, this will usually be the case and perfect sorting as described by Tiebout will not be established. However, this type of redistribution conducted by sub-central governments will, akin to that proposed by Hochman and Rodgers, not resemble Director's Law type redistribution towards the middle classes.

If income redistribution does indeed take place on the sub-central level, one might nevertheless think of a mechanism that at least induces one characteristic of Director's Law, namely a regressive budget incidence at the threshold from low income to medium income earners. Jurisdictions have hardly any incentive to use their fiscal policy to attract low-income earners, who are often hampered by a tiny stock of human capital and exposed to a high risk of becoming unemployed, and thus net transfer recipients. If formal barriers to immigration are not

feasible, which is usually the case within a political union, sub-central governments might find it worthwhile to deter low-income earners by setting high marginal tax rates, providing only a modest welfare state and a low supply of other public goods that are typically preferred by this group of individuals. Reasonably well qualified middle income earners, who are net taxpayers, can in contrast be attracted with a relatively low tax burden, and a favorable supply of public goods. The same is of course true for high-income earners.

Still, in the presence of the exit option, it becomes more difficult and with rising degrees of mobility even next to impossible to redistribute *from* a group of highly mobile individuals towards less mobile individuals, and this is the case for the entire budget, not only for explicit transfer schemes. Since it is plausible to assume that mobility rises with income – an individual who earns only rent income can do so more or less independent of the location he resides in – we can expect that decentralization implies a modification of Director’s Law: If the middle classes are those who primarily benefit from government activity, then it becomes unlikely that welfare is transferred from both ends of the income distribution towards the middle. Rather, the main stream of redistribution ought to be observed from the low income earners towards the middle classes.

5. A first glance at the data

Given all these arguments with respect to the direction of income redistribution in a democracy and the effects of political economic forces or institutional differences on income redistribution, it becomes clear that empirical analyses are necessary to obtain an insight of what is actually going on. In a first step, it is useful to look at the activities of selected developed countries in monetary income redistribution. It is important to remind ourselves that this is far from showing the complete picture with regard to Director’s Law. We can see how far income redistribution reduces the inequality of the primary distribution of market incomes, but we can, for example, not directly observe the redistribution of utility that occurs through the supply of public good bundles that are more preferred by one income group than by the other.

The countries in *Table 2* are ordered by their redistributive effort (fourth column), which obviously differ to a large extent. While Belgium almost cuts its inequality in primary incomes by half through redistributive efforts, the United States of America reduce their primary inequality by less than a fourth. It is also striking that income redistribution in all countries relies mainly on transfers, rather than the tax system. This is in line with the Romer-Roberts median voter models discussed in Section 2, but in particular with the Dixit-Londregan model dis-

cussed in Section 3, which all predict rather general tax systems that contribute little to income redistribution. There is, however, also substantial variation on the revenue side, with Switzerland having the least overall progressiveness in its tax system, and Belgium exhibiting a particularly progressive tax system.

Table 2: Income Distribution and Redistribution according to Gini-Coefficients, Selected OECD Countries in 2000

Country	Gini coefficients			Redistribution from		Relative importance of transfer types		
	Market	Disposable	Difference	Taxes	Transfers	Pensions	Unemployment Benefits	Others
Belgium	0.465	0.242	0.223	0.062	0.161	0.107	0.023	0.030
Sweden	0.441	0.223	0.218	0.038	0.180	0.107	0.019	0.055
Netherlands	0.458	0.257	0.202	0.041	0.160	0.088	0.011	0.062
Finland	0.417	0.223	0.194	0.048	0.146	0.087	0.016	0.044
France	0.469	0.292	0.177	0.021	0.157	0.099	0.018	0.039
Denmark	0.412	0.245	0.167	0.036	0.131	0.055	0.024	0.052
Germany	0.421	0.254	0.167	0.047	0.119	0.089	0.006	0.024
UK	0.475	0.323	0.153	0.031	0.121	0.044	0.005	0.073
Norway	0.379	0.235	0.144	0.040	0.104	0.065	0.005	0.043
Australia	0.423	0.297	0.126	0.049	0.077	0.030	0.011	0.036
Canada	0.406	0.290	0.116	0.038	0.078	0.037	0.011	0.030
Switzerland	0.395	0.293	0.102	0.009	0.093	0.078	0.013	0.001
USA	0.447	0.345	0.102	0.046	0.056	0.033	0.002	0.021
<i>Mean</i>	<i>0.431</i>	<i>0.271</i>	<i>0.161</i>	<i>0.039</i>	<i>0.122</i>	<i>0.071</i>	<i>0.013</i>	<i>0.039</i>

Source: Luxembourg Income Study, 2004.

Looking at the relative importance of different transfer types, public pension systems apparently contribute a significant share to redistributive efforts in all countries. This is not a surprise: If, in a vote on the extent of a pay-as-you-go pension system, the median voter has already some part of his active working life behind him, the result to be expected is actually a sub-optimally high level of pensions, since the median voter does not take into account the full contributions that young workers need to pay during their active life (see BOADWAY and KEEN 2000). With all of the countries listed above financing their pensions at least in part through pay-as-you-go systems, a large weight of pensions in the redistribution of monetary incomes is to be expected.

Normally, the level of benefits an individual receives out of pay-as-you-go pension systems is linked to the level of his contributions during his active years. Similarly, unemployment benefits do usually rise with the market income an individual has earned when he was still employed. At the same time, these positive relationships are normally capped at some upper bound, where the transfers do not rise any further with the market income that was earned

before. It is therefore not unlikely that much of the income redistribution that is conducted in these types, even though it reduces overall inequality, ultimately benefits the middle classes most. Nevertheless, targeted welfare payments to the poor (subsumed under the “other” transfers in the ninth column of *Table 2*) may actually help to reduce poverty that exists in the primary income distribution. A look at *Table 3* indicates how successful the countries have been at this effort.

Table 3: Poverty Measures and Poverty Reduction in Selected OECD Countries in 2000

Country	Poverty measure		Poverty reduction
	Market incomes	Disposable incomes	
Belgium	27.7	4.1	23.6
Netherlands	26.7	4.5	22.3
Sweden	25.7	4.4	21.3
Finland	22.2	3.2	19.0
Denmark	24.1	5.6	18.5
UK	25.4	7.3	18.0
France	22.7	5.3	17.4
Germany	21.5	4.4	17.1
Norway	19.3	4.0	15.3
Australia	21.3	8.0	13.3
Switzerland	17.2	5.5	11.8
Canada	19.1	7.6	11.5
USA	20.1	11.6	8.5
<i>Mean</i>	22.5	5.8	16.7

Source: Luxembourg Income Study, 2004.

In *Table 3*, countries are ordered by their achieved absolute reduction of poverty. The poverty measure (PM) is defined as follows: First, a headcount is conducted where the percentage number of individuals below the poverty line (HC) is calculated. The poverty line is defined as 50% of a country’s median income, i.e. a relative poverty measure is used. In a second step, a poverty gap (PG) is calculated. The poverty gap divides the absolute difference between the mean income of the poor and the median income of the population through the median income of the population. The poverty gap thus measures how large the income difference between the mean poor and the median household is, relative to the median household’s income. Finally, $(PM)=(HC)*(PG)$ is calculated. To reduce the poverty measure, a government can thus either reduce the number of the poor (reduce the (HC) measure) or it can raise the average income of the poor (reduce the (PG) measure).

According to *Table 3*, most countries indeed achieve a substantial reduction of poverty through their redistributive policies. Also, the ranking of countries is very similar to the rank-

ing in *Table 2*: Countries that are relatively more active in redistributing income are also more active in organizing targeted transfers to poor individuals. This seems to cast some doubts on Director's Law, but once again, it is necessary to remind ourselves of the fact that *Tables 2* and *3* are concerned with monetary transfers, not with overall budget incidence.

Studies of budget incidence were particularly popular in the 1970s and quite often inspired by Stigler's arguments in favor of Director's Law. In contrast to the Gini-coefficients reported in *Table 2* or the poverty measures shown in *Table 3*, these budget incidence studies additionally included the other spending categories which do not entail direct monetary transfers to particular income groups. In order to inquire how overall spending and revenue affect the income distribution, specific assumptions had to be applied which are relatively straightforward on the revenue side of the budget, but necessarily crude on the spending side. For example, personal income taxes were assumed not to be shifted, but borne by the individual income taxpayers, with the exception of income taxes of self-employed which are assumed to be shifted to consumers. Estate and gift taxes were assumed to be distributed according to real estate ownership, with the same exception as in the case of personal income taxes. The corporate income tax burden was presumed to be divided equally between dividend recipients and consumers, residential property tax assumed to be entirely paid by consumers of housing, and excise and sales taxes were thought to be borne entirely by consumers. The incidence of public expenditure was assumed, as far as possible, to fall entirely on recipients directly identified, e.g., children under eighteen for elementary and secondary school expenditures. The expenditures of government for which direct beneficiaries cannot readily be identified was assigned one-half by the share of factor income and one-half according to the distribution of taxpayer households (see SMOLENSKY, POMMEREHNE and DALRYMPLE 1979 for more details). Using assumptions of this kind, POMMEREHNE (1975) reported some evidence in favor of Director's Law.

As the outcomes of the empirical studies on budget incidence could be heavily affected by the crude assumptions on the incidence of non-transfer government spending, the modern analyses of income redistribution have excluded the latter spending categories even though some studies still apply the concepts of budget incidence (KIRCHGÄSSNER and POMMEREHNE 1996 or FELD 2000). However, the redistributive effects of some spending categories have turned out to be so complicated according to more recent analyses (for higher education see for example BLAUG 1982, JAMES and BENJAMIN 1987, LEMELIN 1992, WIGGER 2001, BARBARO 2003) that the simple assumptions used in budget incidence analyses can not capture redistri-

bution properly. Thus, to conduct direct empirical tests of Director's Law appears to have become impossible. However, some indirect evidence consistent with Director's Law might be obtained by studying the impact of different political economic forces or institutional differences on income redistribution. As the discussion in Section 4 indicates, Director's Law is not compatible with any of the constitutional differences that could be studied. For example, plurality rule and, to a lesser extent, presidential systems accommodate a fiscal policy along the lines of Director's Law, while the effect of direct democracy is ambiguous. Moreover, fiscal competition will hamper a redistribution from the rich to the middle classes, but provide incentives for redistributing income from the poor to the middle classes.

With the exception of some of the empirical analyses already mentioned in Section 4, the largest part of the studies focusing on the impact of institutions on income redistribution only take welfare spending or social security spending as dependent variables. The actual redistribution achieved by government activity, e.g. as measured by Gini coefficients or by having a closer look on the different income quantiles, is seldom considered. An early exception is HEWITT (1977) who found that democratic experience had a negative, but insignificant impact on redistribution, but for the top 5% or the top 20% incomes, respectively, the negative impact of democracy on their share of total income was both strong and significant at least at the 10% level. Thus, the author detects a negative relation between the length of democratic experience and income inequality and hence concludes that more democracy is associated with more income redistribution.

Of the studies focusing on the institutional determinants of welfare and social security spending, PAMPEL and WILLIAMSON (1988) report that vote per population and electoral competition positively affect social welfare spending in 18 advanced industrial nations between 1950 and 1980. LINDERT (1994) finds a significant positive influence of female suffrage as well as of executive turnover as proxies for democracy on total social transfers for a sample of 21 countries from 1880 to 1930. Moreover, the effect of voter participation is positive and highly significant for total social transfers, and particularly for pensions and health payments. Democracy thus appears again to be associated with higher levels of social transfers. Most interesting are the studies in which the impact of democracy on welfare spending is conditioned on income equality. For a cross-section of about 50 democratic and non-democratic countries, PEROTTI (1996) estimates a model with two equations, one which studies the effect of fiscal policy on growth, and another which comprises democratic institutions and income equality as explanatory factors of the fiscal policy variables. His main result is that the interaction term

between the democracy variable and the measure of income equality proved to be negative and significant for social security expenditures which shows that an increase in equality has a negative effect on welfare spending in democracies.

PERSSON and TABELLINI (1994) analyze the impact of the median voter on redistribution, predicting a negative relationship between transfers and the middle quintile, their measure of income equality. Indeed, they find a dampening impact of the middle income share on redistribution, the share of redistributive spending in GDP a finding that contradicts Director's Law. In contrast, BASSET et al. (1999), in attempting to replicate these results, report that the previous results are not robust to differences in definitions of income equality, sample size and the inclusion of the share of senior residents. Moreover, BORGE and RATTSSØ (2004) report evidence for Norway that the higher the mean as compared to median income the more redistribution is undertaken. These results support the view that the median income taxpayer (supposed to be identical with the median voter) gains from taxing the rich.

While the empirical studies reviewed before do not contradict Director's Law fully, and if they do, cannot be regarded as providing robust results, the question still remains what kind of income redistribution results under particular constitutional frameworks. Is Director's Law depending on the institutional differences? As mentioned before, MILESI-FERRETI, PEROTTI and ROSTAGNO (2002) study whether countries with plurality rule have different levels of transfer payments than countries with proportional representation. For a panel of OECD countries since the 1960's, they report the finding that transfer payments are strongly positively related to the degree of proportionality. This result is corroborated by PERSSON and TABELLINI (1999, 2003) for a panel of 60 countries from 1960 to 1998. They also find that welfare spending is lower in presidential systems, although only weakly. By mainly focusing on welfare spending, these studies can however not shed any light on the validity of Director's Law.

6. The econometric analysis

6.1 The econometric approach and the data

In this paper, we thus choose an alternative approach. Instead of analyzing different spending or taxation instruments, we focus on the actual redistribution achieved by overall governmental activity, largely measured by Gini-coefficients, but also by having a closer look at income quantiles (in the Swiss case). We proceed in three steps in order to test the comparative impact of different constitutional environments on income redistribution. First, a cross section of

60 plus countries in the end of the 1990s is used to find out whether there are differences in the distribution of final (disposable) income that can be attributed to the constitutional differences outlined in Section 4. As this cross country data set, which has been collected by PERS-SON and TABELLINI (2003) and can be downloaded from Guido Tabellini’s homepage, does not contain any measure of the primary (market) income distribution, it is not possible to infer with certainty whether constitutional differences also affect income *redistribution*.

This is done in a second step of the analysis. For a small sample of 13 OECD countries between 1981 and 1998, a yearly panel data set is constructed on the basis of data provided by the Luxembourg Income Study (ATKINSON ET AL. 1995a) which allows to analyze the impact of institutional factors on the primary and final income distributions as well as on fiscal redistribution. This data set has another drawback, however, as the 13 countries contain too small numbers of presidential systems or systems with plurality rule such that it cannot be analyzed how they affect income redistribution. However, these data allow us to focus on differences in fiscal decentralization in addition to the study of fiscal redistribution.

The third step consists in an analysis of income redistribution in Switzerland. We discuss the main results from the paper by FELD, FISCHER and KIRCHGÄSSNER (2006) with respect to its implications for Director’s Law. Switzerland is a particularly interesting case as the cantons have strong fiscal competencies including spending and taxation. This leads to intensive tax competition between the cantons and at the local level (see, e.g., FELD 2000). Still, there are differences between the cantons as to the intensity of tax competition they have to cope with. Moreover, cantonal differences obtain with respect to the extent of direct democratic decision-making that is employed in fiscally relevant decision-making. Finally, there is not a presidential, but a directorial system at the Swiss cantonal level as the members of cantonal government are directly elected by the citizens. In addition, plurality rule does almost not play any role for the election of parliament. Only three cantons have majoritarian systems which consequently does not have any impact on spending or revenue (SCHALTEGGER and FELD 2004), which leads us to also neglect it in this paper.

More generally, the following econometric model is used:

$$GINI_{it} = \beta_0 + \beta_1 CONST_{it} + \beta_2 V_{it} + u_{it} \quad (1)$$

where $GINI_{it}$ stands for the different Gini indexes used as proxies for income redistribution. In the first step of the analysis, i.e. in the next section, we analyze Gini coefficients of the final

income distribution, i.e. the distribution of disposable income. In the second step of the analysis, primary and final income distributions as well as fiscal redistribution as the difference between these two income distributions are analyzed. For the third step of the analysis, different spending and revenue variables, but also primary and final income distributions and their differences are analyzed. Model (1) is thus also applied to spending and revenue.

Equation (1) implies that the resulting distribution of disposable incomes is a function of constitutional differences, $CONST_{it}$: As constitutional differences, we consider the differences between parliamentary and presidential democracy, plurality rule and proportional representation, federalism and unitarianism as well as direct and representative democracy. In each step of the analysis, the income (re-)distribution is additionally explained by several control variables V_{it} . They vary depending on the available data set and are subsequently introduced. However, a basic set of control variables remains largely unchanged across regressions: An income variable, a proxy for educational attainment and a population variable. The parameter of interest is β_1 , while u_{it} denotes the error term. i indicates the cross section units, while t indicates the years.

6.2 *Presidential versus parliamentary democracy*

In order to test the impact of presidential versus parliamentary democracy or plurality rule versus proportional representation, the distribution of disposable income, measured by Gini-coefficients is analyzed. The cross section data are averaged over the period 1990 to 1998 (or shorter periods when data are unavailable) in order to eliminate the influence of short-term shocks in particular years. The Gini index on income distribution is computed as the average of two data points, the observation closest to 1980 and the observation closest to 1990. PERSSON and TABELLINI (2003) use the data collected by DEININGER and SQUIRE (1996) for that calculation.

A variable of interest for our investigation is, first, a dummy variable which is equal to one in presidential regimes, and zero otherwise; only those regimes in which the government is independent from a confidence vote of the parliament are considered as presidential. Second, a dummy variable for electoral systems is included which equals 1 if all the lower house is elected under plurality rule, and zero otherwise. These two variables are discussed in more detail in PERSSON and TABELLINI (2003, Chap. 4). In order to be consistent with Director's Law, both variables need to have a positive impact on the final income distribution, i.e. income ought to be more unequally distributed in countries with presidential systems or plural-

ity rule. Third, the econometric model contains a dummy variable that is equal to one if the country has a federal political structure, and zero otherwise. Regarding our discussion in Section 4.4, we could expect a more unequal final income distribution in countries with more fiscal competition between sub-federal jurisdictions preventing the emergence of a Director's Law. It should be noted at the outset, however, that federations experience different degrees of sub-federal tax and spending autonomy which are not well captured by this dummy variable. Moreover, there are also many unitary states, like, e.g., some Nordic countries, with strong fiscal competencies at the local level.

The basic control variables are log income (natural log of real GDP per capita in constant dollars), the total enrolment in primary and secondary education (as a percentage of the relevant age group in the population), the natural log of total population (in millions), the proportion of the population between 15 and 64 years old from total population and the proportion of the population aged 65 years and above from total population. In addition, the model is augmented by further explanatory variables in order to test the robustness of our results on institutional differences. Central government spending and revenue as a percentage of GDP are equally included as ethno-linguistic fragmentation, the Gastil index of civil liberties and political rights, trade openness or the age of democracy.

The model is estimated by OLS and the results are reported in *Table 4*. As can be seen from the bottom of the table, the variation of the Gini index of the disposable income distribution is fairly well explained. Even the simplest model with the baseline control variables explains almost 60 percent of the variation of the Gini index according to the adjusted R^2 . Also, the F-statistics indicate that the model cannot be rejected on any conventional significance level. The results in Model (1) of *Table 4* imply that countries with a higher real GDP per capita or a higher enrolment in primary and secondary education have a more unequally distributed disposable income (significant at the 5 percent or 1 percent significance levels respectively), while a country's population size has no significant effect on the income distribution. Both, higher proportions of older people and people in the working age imply a significantly less unequal distribution of disposable income. This implies that countries with a larger share of young people have a more unequal income distribution. Regarding the coefficients of both variables, it is obvious that a higher share of older people (and thus pensioners) is associated with a less unequal income distribution. This result can only be explained with a particular influence of this age cohort in the political process. It is in line with the studies mentioned in

Section 5 and is consistent with Director's Law. The effects of income, education and the share of older people is relatively robust across all specifications reported in *Table 4*.

Model (2) includes the dummy variables for presidential systems and plurality rule. Presidential systems have a more unequal final income distribution, consistent with results on welfare spending reported above. However, this effect is only marginally significant on the 10 percent significance level. It loses significance when the dummy variable for federalism is introduced in the model, but regains significance (up to higher levels) by the inclusion of other control variables. It should be noted that these effects are not the result of the smaller sample size.