

POLITICS AND INCOME DISTRIBUTION

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Abstract

The connection between political and institutional variables and income distribution has not gained much attention so far in economics. In a first step, this paper presents the state of research between politics and income distribution with a focus on Public Choice aspects of income distribution, e.g. redistribution, political institutions and participation. In a second step, propositions derived from the research literature are empirically tested. Starting from the notion of Kuznets (1955) about the necessity of the integration of the working class into the political structure of a country as a condition for decreasing income inequality, the role of participation, interest group organization and democratic institutions in the context of income distribution are empirically analysed. First panel regression results support the notion that countries in which the population is more integrated into the political structure experience less income inequality.

1. Introduction

The relationship between growth and income distribution as well as political structure and economic performance has long been a subject of scrutiny for researchers. Whereas the reciprocal links between growth and income distribution have gained considerable attention in the last decades, the link between political and institutional variables and income distribution has not gained much emphasis so far. There are only a few studies investigating the connection between institutions, political variables and income distribution and most of them analyse the connection between aggregate democracy measures and income distribution with ambiguous results (Gradstein and Milanovic 2000).

Considering the generally important role of transfers and redistributive policies in modern societies, the interactions between politics and income distribution deserve more detailed attention, especially the question which factors influence the amount and direction of redistribution in a society. The redistribution literature agrees that redistribution generally benefits the politically influential groups of society. Therefore, the distribution of political influence determines the income distribution in a society.

The present paper has two aims. In a first step, the research literature dealing with the connection between politics and income distribution is reviewed. In a second step, different propositions concerning the connection between political influence and income distribution are derived from the research literature and empirically tested.

The paper is organised as follows: Section 2 gives a short overview of the most important theoretical and empirical findings concerning the connection between growth and income distribution. Section 3 deals with the literature on the relationship between politics and income distribution. In section 4 the hypotheses are presented. The empirical analysis follows in section 5. Section 6 concludes with a short summary of the most important results and possible strands for further research.

2. Income Distribution and Growth

Questions of growth and income distribution have always been a major concern for economists. In his seminal article (Kuznets 1955) Kuznets proposed his hypothesis of an “inverted-U” relationship between growth and income distribution. After examining empirical data for different industrial and developing countries Kuznets found that income inequality increases in a first stage of economic growth and then begins to decrease after a certain point of growth. According to Kuznets the reason for this phenomenon lies in labour migration between a traditional agricultural sector and a modern, urban industrial sector. On the one hand, the inequalities between these two sectors rise during the development process, on the other hand, the share of the more unequal industrial sector, where wages differ more than in the agricultural sector, increases. According to Kuznets (1955, p. 17) the growing political power of the urban low-income groups, their political participation and the better chances for organization lead to a variety of protective and supportive legislation by the state. This means that not until all sectors of the working class are integrated into the political and economic structure of a country and have begun to gain political influence, will income inequality begin to fall.

In the following years many economists have tried to find evidence for the Kuznets curve and to answer the question of how growth and income distribution affect each other (Adelman and Morris 1973, Chenery et.al. 1974, Ahluwalia 1976, Papanek and Kyn 1986, Fields 1987, Ram 1988, Bourguignon and Morrisson 1990, Anand and Kanbur 1993, Deininger and Squire 1996, Barro 2000). Although mainly the cross-sectional studies found evidence for the Kuznets hypothesis, the more recent investigations working with newer and better data material and using time series data did not obtain unequivocal results (Deininger and Squire 1996, p. 583-589).

A new strand of literature looks at the long-term evolution of the income distribution in particular countries (Piketty 2003, Piketty and Saez 2003, Atkinson 2003 and Dell, Piketty

and Saez 2005). These studies find a strong decrease of income inequality throughout the first half of the 20th century, whereas the recent experience is quite diverse across countries, with some countries experiencing an increase in inequality since the 1970s. Whereas skill-based technological change and globalisation affect the income distribution everywhere (Glaeser 2005), economic structure, pursued policies and also the geographic and historical heritage of the investigated countries play a more important role in explaining the differences in income distribution between countries than the level of development.

In the last few years interest in Kuznets' hypothesis decreased and the relationship between growth and income distribution was newly analysed from another point of view. Up until the early 90's, the contemporary economics profession had not much to say about the impact of income inequality on the growth rate of an economy. At the intersection of Public Choice and Theory of Endogenous Growth, economists were now busy analysing models and empirical studies dealing with income distribution and its influence on growth (for a survey, see Alesina and Perotti 1994, Perotti 1996 and Bertola, Foellmi and Zweimüller 2006). Most of these studies came to the conclusion that a more equal distribution of income has a positive impact on the growth rate of an economy, whereas an unequal income distribution can affect growth negatively. These new findings contradicted the notion of inequality as a prerequisite for development ensuring the adequate incentives for work, savings and investment. Different channels were identified as possible links connecting income distribution and economic growth.

The fiscal policy channel predicts that income distribution affects growth through the negative distortionary effects of government expenditures and taxes on investment and savings decisions (Persson and Tabellini 1992, Perotti 1993, Alesina and Rodrik 1994, Persson and Tabellini 1994). The endogenous fiscal policy approach, with its basis on the median-voter theorem where the amount of government expenditures and the tax rates are decided, is theoretically persuasive but empirically problematic, not least because the correlation

between inequality and tax rates was found to be negative and taxation and redistributive expenditures are often positively associated with growth (Saint Paul and Verdier 1996, Perotti 1996 and Josten and Truger 2003). Rodriguez (2004) shows that inequality causes slower growth, not because inequality leads to more redistribution, but due to the fact that the groups benefiting from an unequal distribution of income tend to preserve their favourable position through political activities. Therefore resources are wasted through rent-seeking activities instead of being used for productive investments (Rodriguez 2004).

Another strand of literature identified the security of property rights as a link between inequality and growth, with higher income inequality turning property rights less secure through social polarization, resulting in negative growth impacts (Knack and Keefer 2000). Related approaches stress the impact of inequality on socio-political stability and its influence on growth with higher inequality leading to less socio-political stability which is considered detrimental for growth (Venieris and Gupta 1986, Alesina and Perotti 1996, Perotti 1996 and Bourgignon 1998).

Non political models of the link between income distribution and growth consider factors such as education and fertility (Perotti 1996, De la Croix and Doepke 2003) credit market imperfections and human capital investments (Galor and Zeira 1993, Bertola, Foellmi and Zweimüller 2006), demand effects (Murphy, Shleifer and Vishny 1989) and aspects of globalisation (Cornia 2003, Dreher and Gaston 2006).

The proposition that initial inequality seems to be associated with lower growth rates has gained much empirical support in recent years (Benabou 1996). But many new studies drawing on the Deininger-Squire database (Deininger and Squire 1996), which is superior to data available to older studies, have questioned the supposed new consensus. Forbes (2000), for example, finds a significant and positive impact of inequality on economic growth. Knack and Keefer (2000) found the only surviving link between income inequality and growth

to be the property rights channel. The coefficients for political violence, redistribution, capital market and market size all lose their significance when tested with higher-quality income distribution data. However the econometric problems that seem to disturb the negative relationship in the newer data sets appear to be specific to income inequality. Deininger and Squire (1998) find the negative coefficient on initial income inequality in their regressions only insignificant when a variable for asset inequality (the Gini coefficient for land ownership) is introduced into the model. Some subsequent studies found negative growth impacts of human capital inequalities (Birdsall and Londono 1997, Castello and Domenech 2002) and land inequality (Deininger and Olinto 2001).

The current state of the debate can be summarized as follows: while it is not certain whether initial income inequality directly affects economic growth (Bourgignon 2004), it is a proxy for more fundamental wealth and human capital inequalities. Once measures for wealth inequalities are included in the empirical analysis, there seems to be a significant negative relationship between asset inequality and economic growth.

There seem to be no systematic links between the level of development and income distribution. Generally, there is too much country specificity in the way growth affects distribution for any generalisation to be possible (Bourgignon 2004). Nevertheless, the research literature was able to identify certain factors affecting the income distribution such as land tenure, education and population growth (Kanbur 2000, p. 818). In addition, most studies agree, that not the level of development but economic structure and, most importantly, pursued policies are the most important factors determining income distribution.

3. Politics and Income Distribution

Income distribution and growth are definitely influenced by pursued policies. Apart from providing public goods and services, governments all over the world redistribute income among its citizens by transfers, taxes and legislation. Therefore the role of the state and politics in general should not be disregarded. There are two different connections between income distribution and redistribution, namely the effects of redistribution on the income distribution and on the other hand the analysis of inequality as a cause for redistribution.

3.1. Redistribution and Income Distribution

Normative redistribution theories (Egalitarianism, Utilitarianism) and the intentions of the modern welfare state propose redistribution from rich to poor as the primary goal of redistribution policy. However, in the real world, redistribution from rich to poor constitutes only a small fraction of existing redistribution (Tullock 1997, Mueller 2004). Empirical evidence about the effects of redistribution on income distribution in general is quite mixed, there is no unidimensional flow of income in only one direction (e.g. from rich to poor), but every possible flow of income between groups happens to occur (Mueller 2004).

Redistribution can be seen as the result of a political struggle within an institutional structure, where redistribution is determined by self-interested utility-maximizing voters, pressure groups, politicians and bureaucrats acting in an institutional structure (among others see the models of Kristov, Lindert and McClelland 1992, Grossman and Helpman 1994, Dixit and Londregan 1994, Austen-Smith 1997 and Rodriguez 2004). The largest part of transfers goes to the politically influential and well organised, or generally speaking to those demanding the money, and takes from those least capable of opposing the transfers (Tullock 1997). Since the possibility of organizing interest groups is far more unequally distributed than productive abilities and the control of free-riding requires enough resources, poor-to-rich redistribution is the likeliest consequence of interest group activity (Mueller and Murrell 1986, Olson 1991, Tollison 1997, Rodriguez 2004). This notion is supported by albeit few empirical

studies finding that the main part of government programmes accrues to groups that are well organised and politically influential (Tullock 1997). Therefore the presence of interest groups and the inherent logic of their formation is assumed not only to lead to redistribution from poor to rich and from unorganised to organised, but also to increased income inequality in general.

3.2. Income Distribution and Redistribution

Another link between income distribution and redistribution is the impact of the income distribution on policies for redistribution through the Median-voter model developed by Meltzer and Richard (1981), where redistribution occurs through taxes which are decided by the Median voter (Pommerehne and Kirchgässner 1991, Mueller 2004). The model shows that the poorer the median voter is relative to the average voter, the higher his preferred tax rate and therefore the higher the amount of redistribution. So, inequality and the expansion of suffrage (with the assumption that the new voters are poorer than the median voter) lead to more redistribution from rich to poor. While these findings were empirically supported by older data showing that increasing inequality had in fact a significant impact on the amount and growth of redistribution and government expenditures (Pommerehne and Kirchgässner 1991), newer empirical evidence is mixed (see Verdier 1999, Reuveny and Li 2003). According to Saint Paul and Verdier (1996), Josten and Truger (2003) and Rodriguez (2004) higher inequality not necessarily leads to more redistribution because different income groups have different political weights and political participation is endogenous with the poor having a lower participation than the rich, making the decisive voter richer than the median voter (Bénabou 2000, p. 106ff.). Another argument proposes a negative relationship between inequality and redistribution because in unequal societies the poor lack the resources to push their political agenda and the governments of these countries are formed by members of the small rich elite, resisting redistribution and fearing expropriation (Gradstein and Milanovic 2000, Glaeser 2005, similar arguments are found in Rodriguez 2004). While these propositions are quite difficult to test empirically they nevertheless show that the effects of

redistribution and income distribution remain controversial and the results of the different models depend on the assumptions about the underlying political process and the institutional structure of an economy.

3.3. Institutions and Income Distribution

The discussion about redistribution and income distribution as well as income distribution and growth shows that the political context plays an important role in determining income distribution. According to Kuznets (1955, p. 17) the growing political power of the working class leads to changes in state policy and is thus a necessary condition for falling inequality. Tullock (1997, p. 109) states that people are poor for reasons that not only make them having a difficult position in the economic marketplace, but also in the political marketplace, which translates into generally lower political participation. The median-voter model predicting redistribution from rich to poor and an automatic equalisation of the income distribution is being criticised for not considering different political weights of different income groups and endogenous political participation (Saint Paul and Verdier 1996, Josten and Truger 2003).

The analysis of the relationship between institutions, the political process and income distribution has not gained much emphasis so far. While the impact of economic and political liberties on the economic growth performance of a country has been extensively investigated (Scully 1992, Przeworski and Limongi 1993, Knack and Keefer 1995, Baum and Lake 2003, Przeworski and Limongi 2003, Halperin, Siegle and Weinstein 2004), only few studies deal with the relationship between institutions and income distribution (see Gradstein and Milanovic 2000 for a survey). Although it has long been recognized that a more egalitarian distribution of political rights in the form of a political democracy should, according to the Median-voter model, be accompanied by a more equal income distribution, the few existing empirical evidence is mixed (Gradstein and Milanovic 2000).

Scully (1992) shows that politically open countries that are committed to the rule of law, respect private property and have a market allocation of resources, have more equal income distributions than countries where these rights are restricted. Nee and Lidka (1997) analyse China's transition in the last decades from state socialism to a market economy, with its different institutional arrangements of property rights, from state control to different corporatist arrangements to outright private property of resources. The empirical results show that households in corporatist and laissez-faire regions are more likely to end up in the upper regions of the income distribution than the households in the inland or in the redistributive areas. The overall level of income inequality is lowest in the corporatist provinces and highest in the still redistributive inland and the laissez-faire provinces (Nee and Lidka 1997, p. 220ff.). Gradstein, Milanovic and Ying (2001) argue that ideology, as proxied by a country's dominant religion, is an important determinant of inequality. Their cross-country evidence supports the hypothesis that the democratisation effect on income distribution works through ideology. The results show that in Judeo-Christian societies increased democratisation leads to lower inequality, whereas in Muslim and Confucian societies, which rely on informal transfers to reach the desired level of inequality, democratisation has an insignificant effect on inequality. Mueller and Stratmann (2002) present cross-national evidence that high levels of democratic participation in the form of high voter turnout at elections are associated with more equal distributions of income. Their reasoning shows that high voter participation rates affect government policies, which in turn affect the distribution of income. The reduction of income inequality is caused by larger government sectors, resulting in slower economic growth (Mueller and Stratmann 2002, p. 27). Reuveny and Li (2003) investigate the effects of democracy and economic openness on income distribution. Their cross-country evidence shows that democracy has a positive effect on income distribution. The same applies to trade openness, whereas the level of foreign direct investment leads to more inequality.

According to Acemoglu and Robinson (2000, 2002) the experience of some industrial countries between the middle of the 19th and the beginning of the 20th century shows that increasing inequality caused by industrialisation led to rising political instability. This forced the elite of the respective countries towards democratisation which then caused redistribution measures and a reduction of inequality. Analysing the historical experiences of these countries the authors find support for a Kuznets curve with democratisation being the link between growth and income distribution (see chapter 2). The reduction of inequality therefore depends on political participation. If political participation is low, an equilibrium with high inequality, slow growth and a low degree of democracy is possible (Acemoglu and Robinson 2002, p. 196).

On a more disaggregate level, some studies investigate the impacts of majoritarian and proportional, presidential and parliamentary political systems on income distribution (Persson and Tabellini 2000, Milesi-Ferreti, Perotti and Rostagno 2002 and Persson and Tabellini 2003). Whereas empirical evidence of the effects of these constitutional differences on overall income distribution are lacking to date, these studies find evidence that welfare spending and size of government differ across political systems. A comparison between direct and representative democracy is undertaken by Feld, Fischer and Kirchgässner (2006). They find that in more direct democratic Swiss cantons the government obtains considerably lower funds for redistribution than in more representative Swiss cantons but income redistribution in direct democratic Swiss cantons is as high as in all other cantons. This could be an indication that transfers and tax exemptions in direct democratic cantons are better targeted than in more representative cantons with a more effective use of available means (Feld, Fischer and Kirchgässner 2006, p. 22).

The results from studies dealing with the connection between constitutional environments and inequality show that institutions seem to matter in the determination of the income distribution of a country. The studies investigating the effects of aggregate measures of

democracy on income distribution have mixed results, whereas the studies investigating specific aspects of democracy such as equality of opportunity and the participation of the population in the political process get more convincing results. The redistribution literature shows that political participation not necessarily leads to rich-to-poor redistribution through the Median voter process, because participation is endogenous (Saint Paul and Verdier 1996, Tullock 1997, Verdier 1999, Josten and Truger 2003). Low-income individuals very often do not only stand outside of the economic market but they also have, for different reasons, a weak position in the political marketplace because their political participation is low. Keeping this in mind, it is easy to see that for a concise analysis of income inequality in a society and between countries the political process has to be investigated more thoroughly.

Ankündigung

4. Hypotheses

There is little empirical evidence so far regarding the connection between political variables and income distribution. The studies measuring the impact of aggregate regime variables on income distribution are at best inconclusive. The few studies investigating the relationship between participation and the income distribution on a more disaggregated level suggest that increasing participation leads to decreasing income inequality.

The distribution of political income such as monetary transfers, favourable legislation (protection of markets, price subsidies, favourable wages and working conditions, tax exemptions), governmental expenditures on education, housing, health care, agriculture and the like, rents, patronage, jobs and many more is determined by activities of politicians, voters, interest groups and bureaucrats on the political marketplace. Only people who are represented in the political structure of a country can influence the decisions regarding the political income distribution and thus the overall income distribution. People can only become integrated into the political structure of a country and gain influence through some sort of political participation.

Participation depends on the individual income situation and educational status with educated and high-income persons participating more than uneducated and low-income persons (Saint Paul and Verdier 1996, Tullock 1997). From this it follows that uneducated and low-income individuals are more likely to stand outside the political marketplace in which the political income distribution is determined. Increasing participation would therefore lead to more people from lower-income groups to participate in the political marketplace, being able to influence the political income distribution. This can be considered to be a necessary condition for equalizing the income distribution in general.

Participation thus constitutes a link between the institutional structure of a country and its income distribution and influences the integration of the population into the political structure

of a country, therefore influencing the political income distribution and the general income distribution. Defined in purely political terms, participation involves partisan and political behavior such as voting, campaigning, interest group activity and lobbying (Ayee 2000, p. 2), in other words, activities to get people involved collectively in efforts to influence policy decisions. Political participation thus means taking part in elections and organizing interest groups with the aim of influencing policy. Therefore, in the following empirical investigation, political participation and the integration into the political structure will be measured by the number of interest groups and voter turnout.

4.1. Interest Groups and Income Distribution

Interest groups are a means of promoting the interests of a certain group of people, focusing their energy on the redistribution of income. Common interests are only a necessary, but not a sufficient reason for successful group formation. In general, the possible formation of a group depends on the group size, with small groups having less difficulty to overcome the free-rider problem than large groups (Olson 1992, p. 5ff.). In addition, the control of free-riding depends on the availability of necessary resources to bear the coordination costs. Therefore groups with higher income are assumed to be organised more easily than poorer income groups (Rodriguez 2004). The impact of the number of interest groups on the income distribution is not clear however. On the one hand, a large number of pressure groups means that a lot of different small groups get rents at the expense of the large unorganised population, thus resulting in an unequal income distribution (Olson 1991). On the other hand, the rising number of interest groups enhances the possibility that an individual voter is represented by such a group and therefore gains more influence in the political process. A large number of pressure groups could therefore lead to more political participation and thus to a better integration of the population in the political structure of a country with the possibility of influencing the political income distribution. As a consequence, the political income distribution would be more equal and so would the general income distribution.

From this follows, that the number of interest groups can have two opposing effects on the income distribution, which are both tested empirically:

- § The “rent-seeking approach” predicts that a larger number of interest groups leads to a less equal income distribution.
- § The “political participation approach” predicts that a larger number of interest groups leads to a more equal income distribution

4.2. Voter Turnout and Income Distribution

Voter turnout is a key element of democratic participation. Voters that do not bother or are not allowed to vote are likely not to be represented in the political process. Without turning out to vote, a voter or voting group is not able to influence elections and therefore has no or only a small influence in the political process. Although there are other ways to participate in the political process of a country (e.g. through pressure groups, public opinion, etc.), the most obvious way is to take part in elections. The higher the participation of a certain group, the higher its influence in the political process.

Voter turnout is different for different groups, depending on factors such as income and education (Saint Paul and Verdier 1996, p. 720f., Mueller and Murrell 1986, p. 139f.), with high income classes participating more in the political process than low income classes. A higher level of participation would *ceteris paribus* lead to more people from lower-income groups taking part in the political life and influencing the political income distribution. The hypothesis with regard to voter turnout which will be tested later in this paper is:

- § More participation in the form of a higher voter turnout leads to a more equal income distribution.

4.3. The Importance of Institutions

The political marketplace and the behaviour of voters and politicians and thus the extent of participation are determined by institutions and the constitutional environment. Institutions (e.g. decisions systems, organisations, traditions and other rules) can be thought of as arrangements forming repetitive interactions among individuals and determining restrictions that are important for the assessment of costs and benefits of alternatives (Frey 1990, p. 2).

The extent of integration of the population into the political structure and the degree of their influence on the political income distribution depends on the institutional arrangements of the respective country. Thus the integration of the population represents a link between institutions and income distribution. Freedom of speech, freedom of association and the right to vote are fundamental conditions for the representation and participation of groups and individual voters in the political process. Countries that curtail these rights are assumed to have lower representation and participation rates than countries where these rights are guaranteed. In addition, even if more authoritarian countries know some kinds of forced political participation (compulsory voting, elections with no/limited alternatives, mandatory interest group membership) the restrictions of the political systems ensure, that the political income distribution remains unaffected by political participation. Therefore, political participation (voting, organization of interest groups) is assumed to have no impact on the income distribution in authoritarian states.

Free institutions such as civil liberties and political rights are assumed to lead to high rates of integration of the population. The responsiveness of politicians who want to be reelected ensures that the growing influence of lower-income classes translates into legislative and redistributing policy measures. Therefore, in a democratic setting, political participation leads to a more equal political income distribution and thus to a more equal general income distribution.

The validity of these arguments can be tested by the following hypotheses:

- § The more civil liberties and political rights in a country, the more equal the income distribution.
- § In a democratic setting political participation (voting, organizing interest groups) has an equalizing effect on the income distribution.
- § In a non-democratic setting political participation (voting, organizing interest groups) has no effect on the income distribution.

The following figure illustrates the interrelation of the different hypotheses:



Figure 1: Institutions, Participation and Income Distribution

5. Empirical Analysis

5.1. The Data

In the following section, the 6 propositions about the connection between institutions, participation and income distribution will be tested empirically. A sample of 59 countries at 3 points in time with 156 observations in total is used. The choice of countries was influenced by the availability of the necessary data, with available data for all variables for a least two points in time being the necessary condition for inclusion of the respective country. The 59 countries in the total sample consist of 23 OECD-countries, 13 countries from Latin America and the Caribbean, 12 countries from Africa and 11 Asian countries. Table 1 shows the variables employed in the empirical analysis.

Variable name	Variable description	Variable source
GINI	Gini coefficient, decade average 1970, 1980, 1990	Easterly 1999
IGP	Interest groups per 100'000 population, 1970, 1980, 1990	Coates, Heckelman & Wilson 2007 World Guide to Trade Associations 1973/4, 1985, 1999
VT	Voter turnout as % of VAP (voting age population), decade average 1970, 1980, 1990	www.idea.int
PR	Political Rights score, decade average 1970, 1980, 1990	www.freedomhouse.org
CL	Civil Liberties Score, decade average 1970, 1980, 1990	www.freedomhouse.org
GDPPC	GDP per capita, decade average 1970, 1980, 1990	Penn World Tables 6.1.
SECED	Gross enrolment ratio, secondary education, % of relevant age group, 1970, 1980, 1990	Easterly 1999 and www.unesco.org
POPGR	Annual population growth rate, decade average 1970, 1980, 1990	Penn World Table 6.1.
GOVTR	Government transfers as % of GDP, for 1975, 1985, 1995	www.heritage.org .
OPEN	Sum of imports and exports as % of GDP, decade average 1970, 1980, 1990	Penn World Tables 6.1.
COMP	Dummy variable, 1 for countries with some degree of obligation to vote.	ww.idea.int

Table 1: Data and Sources

The source for data on the Gini coefficient (GINI) is Easterly (1999), who computed decade averages for the Gini coefficients for the 1970s, 1980s and 1990s using data compiled by Deiniger and Squire (1996). Interest group data (IGP) is taken from Coates, Heckelman and Wilson (2007) and the World Guide to Trade Associations (1973, 1974, 1985 and 1999). The variable is the number of interest groups per 100'000 population for 1970, 1980 and 1990. According to Olson (1991) the influence of groups depends not only on the number but also on their strength. However, the data employed here assume that each group is equally powerful, while in fact groups vary in their influence. As proxies for group influence, group

budget or membership could be used, but unfortunately, no such data are available for a cross-section of countries. Data for voter turnout are from the International IDEA website (www.idea.int/vt). Political participation is measured as voter turnout (VT) as % of the voting age population ("VAP"), whereas the voting age population is an estimation of the number of all those citizens over the legal voting age. Average voter turnout for 1970, 1980 and 1990 is used for all countries in the sample. For the classification of countries according to their political and civil liberties, the Freedom House index is used (www.freedomhouse.org). The Freedom House index is one of the most comprehensive and widely used measures of political rights and civil liberties. Political rights (PR) and civil liberties (CL) are ranked from 1 (highest degree of liberty) to 7 (lowest degree of liberty). Average political rights and civil liberties for 1970, 1980 and 1990 are used for all countries in the sample.

In addition to the main explanatory variables, several control variables which are frequently used in previous studies to explain differences in the distribution of income are included. GDP per capita, population growth and education are identified to affect income distribution in several studies (Kanbur 2000). The average GDP per capita in a country (GDPPC) for the 1970s, 1980s and 1990s from the Penn World Table 6.1 (Heston, Summers and Aten 2002) and GDP^2 are included to test for the Kuznets curve – a positive sign of GDP and a negative sign for GDP^2 are expected. The average enrolment ratio in secondary education (SECED) for the 3 decades from Easterly (1999) and UNESCO (<http://www.unesco.org/>) is expected to have a positive effect (i.e. a negative coefficient) on the income distribution whereas the average population growth rate (POPGR) for the 3 decades from the Penn World Table 6.1. should have a negative effect (i.e. a positive sign). Following the arguments developed by the Globalization literature (see Reuveni and Li (2003) for an overview), trade is expected to influence the income distribution, but the results are inconclusive. Reuveni and Li (2003) found open countries to have a more equal income distribution. Therefore the average sum of imports and exports as % of GDP (OPEN), average for the 1970s, 1980s and 1990s from the Penn World Table 6.1., is included in the equation and expected to have a negative sign.

As a last control variable, government transfers (GOVTR) as % of GDP for the 3 decades from the Heritage Foundation is included. Following the reasoning in Mueller and Stratmann (2002), governments affect the distribution of income in several ways (e.g. through transfers and expenditures). A larger share of government transfers is thus expected to lead to a more equal income distribution (i.e. a negative sign is expected). COMP is a dummy variable identifying countries with compulsory voting (www.idea.int). It serves to control for the impact of a high voter turnout, which does not result from an integration of the population into the political structure of a country but simply results from a legal obligation.

Table 2 presents the summary statistics for all variables used in this study.

Variable	Full Sample			OECD countries			Non-OECD countries		
	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	n
GINI	40.48	9.28	156	34.03	6.51	62	44.74	8.34	94
IGP	2.18	3.59	155	4.62	4.63	62	0.56	0.84	93
VT	66.19	17.18	151	76.26	11.87	62	59.18	16.87	89
PR	2.42	1.50	151	1.40	0.82	62	3.14	1.45	89
CL	2.71	1.45	151	1.65	1.04	62	3.45	1.21	89
GDPPC	6015.40	6102.16	156	11063.21	6610.64	62	2686.00	2281.61	94
SECED	0.54	0.29	156	0.80	0.18	62	0.36	0.20	94
POPGR	0.017	0.01	156	0.008	0.007	62	0.023	0.007	94
GOVTR	9.91	8.73	147	17.44	7.70	62	4.41	4.10	85
OPEN	60.63	42.52	156	55.91	27.04	62	63.75	50.08	94
COMP	0.18	0.39	156	0.21	0.41	62	0.16	0.37	94

Table 2: Means and Standard Deviations

The table shows that the OECD countries do not only have a larger GDP than the non OECD countries, but also higher secondary education enrolment, slower population growth, larger voter turnout, more interest groups and less inequality. The means for the variables also show that the OECD countries are on average more free and democratic than the low-income countries. Thus, the propositions are expected to receive more support in the OECD countries because the institutional structure is more open and the integration of the population into the political structure therefore appears to be easier. Differences in the variables for political participation are therefore hypothesized to have a stronger effect in the high-income countries where the democratic institutions are more developed than in the low-

income countries. As an alternative to differentiating the sample between OECD and non OECD countries, the sample is divided into “strong democratic” and “weak democratic” countries according to the combined scores of the Freedom House index for political rights and civil liberties (countries with a value of 2 and less are labelled “strong democratic”, the others are termed “weak democratic”). This differentiation allows for a better separation of democratic from non-democratic countries because it includes non OECD countries with a long democratic tradition such as Costa Rica, Mauritius and India whereas OECD members with a less democratic history such as Mexico, Turkey and South Korea are excluded. The variables for political participation are expected to have a stronger effect on income distribution in the “strong democratic” countries as compared to the “weak democratic” countries.

5.2. Empirical Estimation and Results

The propositions will be tested empirically by using the following regression equation:

$$(1) \text{GINI} = a_1 + a_2VT + a_3JGP + a_4PR + a_5CL + a_6POPGR + a_7GDPPC + a_8 GDPPC^2 + a_9SECED + a_{10}OPEN + a_{11}GOVTR + a_{12}COMP + e$$

This specification follows the standards set in other income distribution studies (Kanbur 2000), where the income distribution is modelled as being linearly dependent on different exogenous variables such as the participation variables (voter turnout, interest groups), institutional variables (openness of political institutions) and control variables (enrolment in secondary education, population growth, GDP, trade openness and government transfers) plus a dummy variable for compulsory voting.

This unbalanced panel is estimated using Least Squares regressions with fixed effects to control for bias resulting from omitted variables which are constant over time. In the present case of cross-country comparisons these fixed effects could account for historical and cultural differences between the investigated countries. Heteroskedasticity is accounted for

by using White-type robust standard errors. Tables 3 to 5 show the regression results for different specifications of equation 1 and different samples.

Variable	Full Sample						
	1	2	3	4	5	6	7
Constant	45.41 (6.12)	46.87 (6.39)	41.13 (6.54)	42.00 (6.55)	39.74 (7.70)	41.22 (6.66)	42.38 (7.36)
IGP	-0.41*** (-2.66)	-0.25** (-2.32)	-0.36** (-2.53)	-0.24** (-2.05)	-0.34** (-2.48)		
VT	-0.02 (-0.47)	-0.04 (-0.69)	-0.01 (-0.24)	-0.02 (-0.38)		-0.02 (-0.28)	
PR	-0.79 (-0.66)	-0.92 (-0.85)					-0.83 (-0.68)
CL	-0.16 (-0.15)	-0.15 (-0.15)					0.14 (0.14)
SECED	-12.68*** (-2.96)	-12.72*** (-3.08)	-12.20*** (-2.68)	-12.18*** (-2.74)	-12.94*** (-2.97)	-12.75*** (-2.84)	-13.29*** (-3.17)
POPGR	317.20** (2.53)	300.45** (2.45)	320.72** (2.40)	305.08** (2.31)	367.52*** (2.73)	348.29*** (2.72)	372.62*** (3.16)
GDPPC	0.0008 (1.15)	0.0007 (1.00)	0.001* (1.66)	0.001 (1.56)	0.001* (1.71)	0.001 (1.62)	0.0008 (1.17)
GDPPC ²	-0.0001 (-1.28)	-0.0001 (-1.13)	-0.0001 (-1.63)	-0.0001 (-1.53)	-0.0001 (-1.61)	-0.0001 (-1.59)	-0.0001 (-1.25)
GOVTR	-0.15 (-1.61)	-0.20** (-2.47)	-0.15 (-1.53)	-0.20** (-2.25)	-0.13 (-1.41)	-0.19** (-2.31)	-0.20** (-2.45)
OPEN	0.008 (0.64)	0.005 (0.33)	0.003 (0.20)	-0.001 (-0.06)	0.003 (0.20)	-0.002 (-0.14)	0.002 (0.17)
COMP		3.24** (2.09)		2.91* (1.83)			
n	142	142	142	142	146	143	143
R ² adj.	0.49	0.51	0.49	0.50	0.52	0.48	0.48

T-statistics in parantheses:

*** statistically significant on the 99%-level

** statistically significant on the 95%-level

* statistically significant on the 90%-level

Table 3: Regression Results (dependent variable GINI, different specifications, full sample)

The coefficient of the interest group variable has a negative sign in all equations and is statistically significant at least on the 95%-level. This result indicates that more interest

groups lead to less income inequality. The “participation and integration” aspect of interest groups thus seems to be stronger than the “rent-seeking” aspect.

Voter turnout has the expected negative sign, indicating that a stronger voter turnout leads to less inequality. However, the coefficient is not statistically significant. The coefficients of the institutional variables PR and CL are not statistically significant and in most equations do not have the expected positive sign. With the exception of the variable measuring openness towards trade, all the other control variables have the expected signs and the coefficients of the education and population growth variable have even strong statistical significance, which is in line with the findings of other income distribution studies (Kanbur 2000). In addition, government transfers are found to lead to lower income inequality (expected sign in all and statistical significance in more than half of the equations).

In regressions 2 and 4, a dummy variable for identifying countries with compulsory voting regimes was added. The coefficient has a statistically significant positive sign in both equations indicating that countries with some sort of obligation to vote have a more unequal income distribution. This finding is difficult to interpret, maybe even indicating that the causality runs from the income distribution towards voting rules with unequal countries trying to ensure that all parts of its diverse population take part at elections. The coefficient signs and the t-values of the other variables in the equation do not significantly change in the regression equations where compulsory voting is controlled for, indicating the robustness of the other findings.

Overall, the regressions for the full sample are able to explain around 50 percent of the total variation of the Gini coefficient through the variation of the independent variables, which is a good result for models trying to explain the income distribution. Generally, the t-statistics and the coefficients of determination are mostly satisfactory and heteroscedasticity is accounted for. The problem of omitted variables is considered by estimating a model with fixed effects.

Variable	OECD sample					Non OECD sample	
	8	9	10	11	12	13	14
Constant	54.04 (7.62)	56.87 (7.65)	48.36 (7.34)	44.60 (12.16)	48.83 (7.49)	38.68 (4.10)	34.53 (4.30)
IGP	-0.13* (-1.78)	-0.06 (-0.46)	-0.13* (-1.67)	-0.14* (-1.66)		0.88 (0.75)	1.32 (1.08)
VT	-0.05 (-0.93)	-0.11 (-1.36)	-0.05 (-0.83)		-0.05 (-0.84)	-0.02 (-0.25)	-0.006 (-0.08)
PR	0.55 (0.47)	1.13 (0.75)				-1.51 (-1.37)	
CL	-1.37 (-1.52)	-1.68* (-1.74)				0.54 (0.43)	
SECED	-8.57* (-1.86)	-6.53 (-1.30)	-9.58** (-2.14)	-9.52** (-2.16)	-8.94** (-2.04)	-13.81** (-2.30)	-13.24* (-1.98)
POPGR	430.61*** (3.49)	390.36** (2.64)	423.76*** (3.66)	455.89*** (4.56)	442.26*** (3.80)	226.07 (1.46)	249.01 (1.52)
GDPPC	-0.001* (-1.78)	-0.001* (-1.73)	-0.0006 (-1.06)	-0.0006 (-1.01)	-0.0008 (-1.32)	0.006*** (3.26)	0.006*** (3.65)
GDPPC ²	0.0001* (1.71)	0.0001 (1.54)	0.00001 (0.85)	0.0001 (0.88)	0.0001 (0.99)	-0.00001*** (3.60)	0.00001*** (-3.73)
GOVTR	0.04 (0.35)	0.07 (0.57)	0.03 (0.26)	0.008 (0.08)	0.03 (0.35)	0.02 (0.07)	-0.05 (-0.23)
OPEN	-0.03 (-1.19)	-0.04 (-1.32)	-0.02 (-0.89)	-0.03 (-1.05)	-0.03 (-1.46)	-0.006 (-0.43)	-0.01 (-1.08)
COMP		2.22 (1.39)					
n	62	62	62	62	62	80	80
R ² adj.	0.68	0.69	0.68	0.69	0.69	0.19	0.16

T-statistics in parantheses:

*** statistically significant on the 99%-level

** statistically significant on the 95%-level

* statistically significant on the 90%-level

Table 4: Regression Results (dependent variable GINI, different specifications, OECD/non OECD sample)

In Table 4 the sample is divided along OECD membership. As noted above, the propositions are expected to receive more support in OECD countries because their institutional structure is more open and therefore integration of the population into the political structure is assumed to be easier.

The results presented in Table 4 do not support this assumption. The participation variables IGP and VT still have the expected sign, but the statistical significance of the IGP coefficients are weaker than in the full sample. The coefficient of VT in the OECD and non OECD sample is still not statistically significant. The other variables do not much differ from the results in the full sample, with the exception of the variable measuring civil liberties, which has the expected sign in both OECD equations and is even statistically significant on the 10%-level. The degree of civil liberties thus has the hypothesized effect on the income distribution, with more civil liberties (at least in the OECD countries) leading to less income inequality.

The separation of the sample into OECD and non OECD countries does not shed more light into the relationship between institutions, participation and income distribution. The reasoning behind this separation is, that the integration of the population should be easier in democratic societies and that the democratic political process reacts with redistribution measures, therefore the participation propositions were expected to receive more support in more democratic countries. It is possible that this assumption holds nevertheless, as the division of the sample might not be accurate enough. If we look at OECD members closely, we see that there are countries such as Mexico, Turkey and South Korea which are not labelled as free and democratic countries for the period 1970 to 1990. Other OECD members such as Spain, Portugal and Greece got rid of their authoritarian regimes not until the middle of the 1970ies. On the other hand, non OECD countries include countries with a long democratic tradition such as India, Mauritius and Costa Rica.

To better account for the assumed differences of the impact of the participation variables on the income distribution in democratic and non-democratic countries, the sample will now be divided into "strong democratic" and "weak democratic" countries using the Freedom House index. The results are presented in Table 5.

Variable	Strong democratic sample				Weak democratic sample	
	15	16	17	18	19	20
Constant	53.64 (5.75)	57.86 (6.61)	43.26 (7.16)	54.65 (5.99)	35.51 (4.16)	37.09 (4.38)
IGP	-0.14 (-1.17)	0.02 (0.13)	-0.18 (1.59)		3.94 (1.47)	4.76* (1.78)
VT	-0.14* (-1.97)	-0.21*** (-3.14)		-0.15** (-2.12)	-0.03 (-0.36)	-0.03 (-0.43)
SECED	-3.32 (-0.52)	-1.31 (-0.24)	-4.25 (-0.60)	-3.59 (-0.56)	-15.90*** (-2.78)	-16.00*** (-2.87)
POPGR	360.67*** (2.75)	352.75*** (3.01)	404.27*** (2.98)	363.61*** (2.92)	327.41** (2.08)	310.80** (2.07)
GDPPC	-0.0006 (-1.01)	-0.0009 (-1.52)	-0.0006 (-0.93)	-0.0007 (-1.06)	0.005*** (2.81)	0.005*** (2.70)
GDPPC ²	-0.00001 (-0.20)	0.0001 (-0.21)	0.00001 (0.04)	-0.00001 (-0.19)	0.00001** (-2.04)	-0.00001* (1.90)
GOVTR	-0.02 (-0.22)	-0.04 (-0.61)	-0.08 (-0.97)	-0.04 (-0.50)	-0.19 (-0.86)	-0.31 (-1.56)
OPEN	-0.003 (-0.13)	-0.006 (-0.21)	-0.006 (-0.23)	-0.008 (-0.42)	-0.02 (-0.96)	-0.02 (-1.28)
COMP		4.85*** (3.12)				3.18* (1.84)
n	72	72	72	73	70	70
R ² adj.	0.65	0.69	0.63	0.65	0.20	0.21

T-statistics in parantheses:

*** statistically significant on the 99%-level

** statistically significant on the 95%-level

* statistically significant on the 90%-level

Table 5: Regression Results (dependent variable GINI, different specifications, strong democratic/weak democratic sample)

In the strong democratic sample, voter turnout now has a statistically significant equalizing impact on the income distribution, whereas the significance of the interest group variable vanishes. In the weak democratic sample, the coefficients of the voter turnout variable are not statistically significant. This result suggests that in democratic countries a higher voter turnout has an equalizing effect on the income distribution because it leads to a larger part of the population being integrated into the political structure of a country and being able to influence the distribution of political income. The coefficient of the interest group variable is now positive and statistically significant in one equation, indicating support for the “rent-

seeking approach” in weakly democratic states. In weakly democratic/authoritarian states, elections are often symbolic and do not influence the composition of the government or the outcome of policies and therefore do not allow the population to influence the political income distribution. The same seems to be true with regard to the organization of interest groups.

The results in general show that participation of the population constitutes a link between the institutional structure of a country and the income distribution. Participation per se is more important than the institutional structure in its effect on income distribution, but the institutional structure influences the size of the effect of participation on income distribution. A more democratic institutional structure of a country leads to a larger effect of political participation on income distribution. The general results support Kuznets’ notion about the importance of the working class’ integration into the political structure of a country as a necessary condition for falling income inequality. The formation of interest groups such as trade unions seems to have an important equalizing effect on the income distribution because it integrates the population into the political structure and allows them to influence the political income distribution. The results for the government transfers variable indicate that the resulting government transfers have an equalizing effect on the income distribution. So redistribution by the state seems to go from richer to poorer segments of the population.

In general, voter turnout seems to be less important than interest group formation for integrating the population into the political structure and equalizing the income distribution. However, in a strong democratic setting, voter turnout has a stronger effect on income distribution because the institutional structure allows for the impact of voting on the political income distribution.

6. Concluding Remarks

The results of this study show that democratic institutions, i.e. civil liberties and political rights, alone are no guarantee for a more equal income distribution. Participation in the pure political term seems to be more important in explaining income distribution differentials across countries than institutional variables. The coefficient of the number of interest groups was robust and almost always significant. The coefficient of voter turnout was robust and significant in the strong democratic sample. Democratic participation in the form of being organized through interest groups and to a lesser extent taking part in elections has an equalizing effect on the income distribution. The effect of interest groups on the integration of the population seems to be far stronger than the distortionary effect of interest groups through redistribution to themselves. Even if the ability of forming interest groups is far more unequally distributed in a society than resource endowments, the presence of interest groups integrates the population into the political structure of a country and allows them to influence the political income distribution. This influence leads to a variety of policy responses (transfers, legislation etc.). As the political income distribution becomes more equal so does the general income distribution.

The study presented here is one of only a few studies dealing with the institutional determination of income distribution and the first to measure the impact of interest groups on income distribution for a panel of countries. Further research on the topic of institutions and income distribution could focus on a more detailed analysis of the underlying political process and the interactions between groups and politicians regarding the political income distribution, taking into account further factors such as the voting system (proportional or majority voting probably), the political system (direct versus representative democracy) and institutionally determined restrictions (the budget restriction, the administrative restriction and so on).

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