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Political Regimes and Pro-poor Transfers in Developing Countries*

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Abstract

The political regime constraints may create biases for the optimal design of poverty alleviation programs. We explicitly consider the implications of regime types for redistribution and social policy choices. Specifically, we examine the incentives of the ruling elite to choose a social transfer program with certain characteristics. Constructing a quantitative dataset on social transfers in developing countries for 1960-2015, we demonstrate that transfers are chosen to be conditional under more democratic regimes. As transfers that are conditioned on education and health only pay-off in a relatively distant future, they are hardly caused by political motives and rather defined by interests of long-run economic development. Unequal autocracies

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do not attach conditions to pro-poor transfers. The transfer programs in autocracies are more targeted and, hence, more likely to be used to buy-off opposition and prevent social unrest.

JEL: D72, H53, H75

Key words: Regime type, conditional transfers, democracy, redistribution, pro-poor policy

1 Introduction

Social protection programs are fundamental for poverty alleviation and prove critical for maintaining the living standards in developing countries. Since the beginning of the 1990s the number of anti-poverty transfer programs has been remarkably increasing. However, if in developed countries the design and implementation of such programs are well studied, in developing countries anti-poverty politics remains under large debate. A tradeoff between current and future purposes of poverty reduction, selection and social exclusion problems, regularity, duration and budget size of social protection programs are major disputable issues. Further, in developing countries pre- and post-tax revenues are only slightly different. That makes evident that social assistance programs play a major role in redistribution in these countries.

The principal determinants of social policies include not only economic and historical prerequisites but also political motives. In developing countries where high inequality and poverty problems are far from uncommon, the political leaders have to base their platforms on redistribution and anti-poverty policies. The policymakers may adopt policies in a way to please the voters in case of elections, to increase office value, to pursue rent seeking, and eventually, to provide a certain welfare level for citizens. The policymakers need to allow for the constraints of political institutions, hence the latter create biases for the optimal design of social programs. Therefore, the key challenge is to understand at what extent social transfer programs in developing countries are defined by regime type and political institutions.

This paper addresses these questions by revisiting the approach to redistribution and focusing on a variety of non-contributory transfer programs aimed to the poor. The standard proxies for redistribution like tax revenue, government expenditure or health and education spending are inadequate (Chu et al. (2000)) in developing countries which are characterized by high corruption, poor governance and weak state capacity. Meanwhile, redistributive transfers provide a large part of income of the poor. So we suggest to focus on poverty alleviation programs and examine political factors that influence the adoption,

budget and coverage of such programs.

We present a simple model of social policy making in different political regimes. The regime is defined as a share of people enfranchised to remove the leader in a standard probabilistic model. The leader chooses whether to adopt a transfer program and how much to redistribute to the poor. The constituency is divided into three classes, the elite, middle class and the poor. In autocracy only the elite may remove the leader and in democracy all classes can vote. In autocracy, however, the poor can dethrone the leader through revolution. The model predicts that democracies distribute more and implement more social transfer programs. If inequality increases, democracies redistributes even more. The poverty line is defined by the elite in such a way to hold power and maintain liveable inequality. The autocrat strives for holding power and avoids revolution. This confirms by that only unequal autocracies increases the budget of transfer programs. Further, targeted transfers for the poor are perfectly in line with such policy.

Constructing a unique quantitative panel dataset of non-contributory social transfer programs in the developing countries we support our theoretical predictions. We combine the data from Barrientos et al. (2010), IloLaborsta and GEES and encode the main characteristics of 122 social transfer programs in developing countries. We use the information on the program type as well as its budget and coverage. We confront universal with targeted programs as well as pure transfers with transfers conditioned to asset accumulation like human development or productive capacity growth. Pure transfers include all cash and in-kind transfers that are unconditionally allocated to the poor. This group of transfers is aimed at current consumption increase and short-run income smoothing effects. Social pensions are a good example of such transfers. The second group of transfers combines social transfers that are available to the beneficiaries under special requirements as school attendance, health safeguards or labor supply. These social transfer programs pursue long-run effects as human, physical and financial asset accumulation. In addition, transfer programs may be designed as universal when transfers are distributed to all population or as targeted when transfers are aimed to increase the poverty line and so are distributed only to the poor. We also separate public works, social pensions, conditional

cash transfers and other special group targeted programs.

Hence, we confirm theoretical predictions that democracies favor redistribution and approve more transfer programs than autocracies. Also, democracies invest more in human capital development by supporting a higher number of conditional and integrated transfers. While inequality increases both democracies and autocracies choose more unconditional transfer programs, whereas autocracies are significantly less likely to provide conditional transfers.

The paper proceeds as follows. The next section reviews the related literature. Section 3 presents general set up, formulates equilibria and model predictions. Section 4 describes data and empirical methodology. Section 5 reports the main empirical results. The last section concludes.

2 Literature review

The Meltzer and Richard's (1981) seminal model assumes that because the income distribution is always right-skewed, the median voter has below-mean income and so favors redistribution. Further, in democracy higher inequality lead to greater redistribution as the median voter shifts more to the left (Alesina and Rodrik, 1994). In autocracies redistribution plays rather a strategic role. The leader solely or the ruling elite decides on social policies. For example, redistribution might be used to appease the poor and prevent a revolution that could result in democratization (Mejía and Posada, 2007). Further, by targeting specific groups redistribution may help to increase the number of supporters and thus contribute to the political survival of autocrats (Knutsen and Rasmussen, 2014). Or, on the contrary, redistribution may be used by the leader to reduce the wealth of some groups to limit their future political power (Leon, 2014).

Despite a large body of the literature on this topic the empirical findings are quite controversial. The issue whether democracy redistributes more relates to two main strands of the literature. The first one considers the relationship between democracy and tax revenues. The second one addresses the link between democracy, inequality, and redistri-

bution.

Gil et al. (2004) and Ansell and Samuels (2014) find no correlation between tax revenues and democracy in a cross-section sample. Nevertheless, there are many studies that do find some positive relationship. For example, Aidt and Jensen (2008) show a positive effect of suffrage on government expenditures as a share of GDP and tax revenues as a share of GDP. Many studies find evidence that democracy has positive effects on government expenditures and welfare as well as social security spending as a share of GDP (Persson and Tabellini, 2003; Lindert, 2004, etc.).

The empirical literature on inequality and democracy also produces ambiguous results. In particular, Lee (2005) shows the heterogeneous effects of democracy on inequality, specifically, democracy reduces inequality only for the large enough size of government. Rodrik (1999) shows that democracy is positively correlated with average real wages in manufacturing and share of wages in national income. Scheve and Stasavage (2009) find that suffrage has no impact on the incomes of the 1% top of the population. Solt (2008) asserts that in autocracies the political leaders may redistribute less because higher inequality depresses political participation. However, ? find no effect of inequality on redistribution in autocracies.

Acemoglu et al. (2011) state that democratic inefficient structure of government based on patronage leads to the rich-bureaucratic coalition and promotes high rents and less redistribution. However, if the poor people come to power then they increase the tax rates and redistribution. Acemoglu et al. (2013) find a robust and quantitatively large effect of democracy on tax revenues and secondary school investments. However, they find no effect of democracy on inequality. They argue that there is a more complex relationship between democracy and inequality. First, democracy may be captured. Second, democracy may transfer political power to the middle class, not to the poor. Finally, it may result in Inequality-Increasing Market Opportunities.¹ But most studies focus on developed countries where such proxies for redistribution as tax revenue and government expenditures work well. In developing countries, a large part of income is redistributed

¹For a more detailed review see Acemoglu et al. (2013).

through poverty alleviation programs, so this complex triple relationship between democracy, inequality and redistribution remain not properly explored.

The reverse effect of high inequality pressure on political institutions and change also is quite important in the literature, often highlighted in the distributive conflict models. This intuition is developed in so called distributive conflict models. Boix (2003) argues that high inequality increases the distributive demands of the population. Acemoglu and Robinson (2006) also distinguish *de facto* in contrast to *de jure* political power where the former refers to the ability of lower classes to challenge elite incumbents through mass mobilization, strikes, demonstrations, riots and other physical threats to elite security. However, they differ in conclusions about the regime change and emergence of democracy. Contrary to Boix (2003), who claims that inequality is inversely correlated with prospects of democratization, Acemoglu and Robinson (2006) show an inverted U-shape relationship between inequality and democratic transitions where democracy is more probable at intermediate levels of inequality. In spite of these contradictions, two major agreements are dominating in the literature. First, democracy is unlikely at high levels of inequality. Second, democracy is likely to occur in case when the lower classes are able to solve the collective action problem. Another interesting finding in this field belongs to Haggard and Kaufman (2012) who revisit the role of distributive conflict for regime change. They find that democracies emerged because of distribute conflict transitions appear to be more persistent than those caused by non-distributive conflicts. Houle (2009) asserts that countries are not more or less likely to transition to democracy, but once they democratize they are less likely to remain democratic. We take into account how pressure from below influences decisions by elites by incorporating the possibility of revolution threat in the model.

Modeling regime types is not definitive. There are two main approaches in the literature. The first one refers to the median-voter theorem. Whereas in democracy all outcomes are defined by the median voter, in autocracy the politician in office solely decides what is best for a society. Hence, the autocrat in non-democratic regimes plays the role of the median voter. For example, Niskanen (2003) compares democracy, autocracy

and optimal government in the following way. An optimal government is one that maximizes average net disposable income. A democratic government is one that maximizes the net disposable income of the median voter. An autocratic government is one that maximizes the net income the ruling elite extracts from the remainder of the population. That is consistent with that democracy-autocracy contrast emerges from the difference in the objectives of the median voter and the ruling elite.

The other similar models of regime comparison with different applications are present in Acemoglu et al. (2010), Dixit (2010), Bates and Petrova (2012), Miller (2013) and others.

The second formal approach has been proposed by Ades (1995) and Bourguignon and Verdier (2000), and it focuses on voter turnout. It claims that the key factor that features a particular regime is a share of population that has a right to vote for a political representative. These papers assume that the wealthy citizens can vote.

Empirically, this approach has been first realized by Vanhanen (2000) who computed the index of democracy based on the percentage of votes going to the largest party and total voter turnout. However, it has been criticized as a democracy index in Munck and Verkuilen (2002). The more appropriate suffrage data by Paxton et al. (2003) can allow to define who have the voting right in a particular country-year pair. Nevertheless, the empirical papers based on this approach give somewhat paradoxical results about the link between redistribution, inequality and democracy (e.g. Aidt et al., 2006; Aidt and Jensen, 2008).

In our paper we benefit from both approaches and assume that whereas in democracy all people can vote for a leader, in autocracy only a specific group of population is in charge to choose a leader who will solely decide on redistributive policies and welfare optimization.

3 Model

This section presents a simple model of social transfer choices in democratic and autocratic regimes. The main elements of the model follow Besley (1997) and Besley and Kudamatsu (2008).

3.1 Set up

Assume that the society consists of three classes: rich, middle and poor classes of the following sizes n_R, n_M, n_P . Then, the shares of every classes are represented by $\beta_R, \beta_M, \beta_P$. Let the middle class be a majority of the population. Everyone in group i has the same income y_i with the obvious ranking: $y_R > y_M > y_P$. Therefore, the general income in the economy is $Y = \sum_i n_i y_i$ and the average income is $\bar{Y} = \sum_i \beta_i y_i$. Any transfer program is financed by a tax on the income of the rich and the middle class. The poor people get the utility of their real consumption level x_P . The preferences of the middle class and the rich are described as: $x_i - \xi(z, \lambda_i)$, where $i \in M, R$, z is the poverty line and λ_i is the preference for redistribution of the rich and the middle class.² λ_i is a random variable normally distributed $\lambda_i \sim N(\bar{\lambda}, \sigma_\lambda^2)$. Therefore, we assume that the middle class and the rich care about their consumption and get disutility from poverty. The disutility does not only stem from pure altruism but may also stem from dissatisfaction by the number of homeless people or dirt in the streets.

In autocracy there is no regularized contest for public office and only the rich are enfranchized to decide who holds office. The rich compose the ruling class in autocracy. However, high resentment of the poor may lead to the revolution and leader overthrown with some costs of collective actions ϕ . In democracy all classes have a right to replace a leader in an open contest. And as the middle class is a majority of population, it is the ruling class in democracy.

There are two time periods denoted by $t \in (1, 2)$. In the first period the ruling class makes a policy decision about redistribution of the income through a social program.

²These basic elements are taken from Besley (1997).

Whereas the public good yields a positive outcome to every class, the social program may favor one or another class. There are three types of social programs: universal, targeted and conditional. The universal program is aimed at income redistribution to all classes. The targeted program is used to achieve a certain threshold of minimum consumption for all population (poverty line). The conditional program is the same as the targeted program but with some requirements in education or/and health, thus providing investments in human development. It generates some costs for the targeted group in the current period but produces higher benefits for all groups and human capital growth in a society in the next period.

In an autocratic world, only the rich decide on whether an incumbent stays in office, then the poor may organize a revolution so the timing will be the following:

- The rich designs a distributive program and defines its characteristics.
- The poor decides to rebel or not. If yes, then the game stops, and all wealth is equally divided.
- The period two payoffs for all classes are realized.

In a democracy, all people are enfranchised, so the timing is:

- The policy maker designs a distributive program and defines its characteristics.
- All citizens decide whether to retain the incumbent or not in an open contest.
- The period two payoffs for all classes are realized.

3.2 Equilibrium

Universal scheme

In every regime the ruling class or policy maker determines the redistribution policy. Under the universal scheme redistribution happens in the form of direct transfers that increase the consumption level of the poor up to the poverty line z . This transfer paid to

all groups and the transfer size is denoted by T_U . If y_M is the income of the middle class and y_R is the income of the rich, then this will satisfy the government budget constraint $T_U N = \tau_U(y_M n_M + y_R n_R)$. Therefore, $T_U = z - y_P = \tau_U(y_M \beta_M + y_R \beta_R)$ is the difference between the actual income of the poor and the poverty line. It results in equal transfers to all classes, i.e. complete redistribution takes place. Let Y be the total income of the poor, middle and rich classes. Then, the utilities of all classes in case with and without transfers are summarized in the following table:

	Without transfer $u_i _{no\ tr}$	With transfer $u_i _{tr}$
Poor	y_P	$y_P + T$
Middle	$y_M - \lambda_M(Y - y_P)$	$(1 - \tau)y_M + T - \lambda_M(Y - (y_P + T))$
Rich	$y_R - \lambda_R(Y - y_P)$	$(1 - \tau)y_R + T - \lambda_R(Y - (y_P + T))$

Table 1: The classes' utilities with and without transfers

We use the standard probabilistic approach where the ruling class decides to adopt a transfer programs only if this raises its utility over the case without redistribution. Hence, in democracy we have

$$P(tr)_{dem} = P(u_M|_{tr} \geq u_M|_{no\ tr}) = 1 - F\left(\frac{y_M}{y_M \beta_M + y_R \beta_R} - 1\right) \quad (1)$$

In autocracy, the policy maker maximizes the income of the rich so the rich come as the ruling class and decide on redistribution. Therefore, the probability to adopt a transfer program in autocracy is

$$P(tr)_{aut} = P(u_R|_{tr} \geq u_R|_{no\ tr}) = 1 - F\left(\frac{y_R}{y_M \beta_M + y_R \beta_R} - 1\right) \quad (2)$$

As $F(\cdot)$ is monotonically increasing, and by assumption $y_R > y_M$, then the probability of redistributive transfers in democracy is higher than in autocracy.

Proposition 1 *In democracy the probability to adopt a universal transfer program is higher than in autocracy.*

The proposition follows directly from that $1 - F(\frac{y_M}{y_M\beta_M + y_R\beta_R} - 1) > 1 - F(\frac{y_R}{y_M\beta_M + y_R\beta_R} - 1)$. In other words, democracy is more likely to fully redistribute the society's income between classes than autocracy.

Tax rate τ_U and level of transfers T_U are defined from the maximization of the ruling class' utility functions in every regime with the respect to the tax rate τ_U . The utility functions maximized in democracy and autocracy are the sum of utilities in the case with transfers and without them:

$$V_M = P(tr)_{dem}u_M|_{tr} + P(no\ tr)_{dem}u_M|_{no\ tr}$$

$$V_R = P(tr)_{aut}u_R|_{tr} + P(no\ tr)_{aut}u_R|_{no\ tr}$$

As both functions are linear by τ and the probability of adopting a transfer scheme does not depend on the tax rate, then for maximization only the utilities of the corresponding ruling class from redistribution matter.

$$u_M|_{tr} = (1 - \tau)y_M + \tau(y_M\beta_M + y_R\beta_R) - \lambda_M(Y - y_P - \tau(y_M\beta_M + y_R\beta_R))$$

$$u_R|_{tr} = (1 - \tau)y_R + \tau(y_M\beta_M + y_R\beta_R) - \lambda_R(Y - y_P - \tau(y_M\beta_M + y_R\beta_R))$$

We can easily show that because of the linearity the tax rate in case of transfers is equal to 1 because only this rate maximizes the utility function of the corresponding ruling class (corner solution). Hence, in case of adopting transfers in our model, we have complete redistribution. Therefore, the poverty line in both regimes will be defined on the basis of tax rate $\tau_U = 1$ and equal to $z_U = y_P + y_M\beta_M + y_R\beta_R$.

In democracy the middle class represents the majority of population so the policy maker is reelected in any case if he adopts the transfer program with the probability $1 - F(\frac{y_M}{y_M\beta_M + y_R\beta_R} - 1)$. In autocracy the poor do not rebel if their average income with transfers and without transfers is no less than their income after revolution:

$$F(\frac{y_R}{y_M\beta_M + y_R\beta_R} - 1)y_P + (1 - F(\frac{y_R}{y_M\beta_M + y_R\beta_R} - 1))(y_P + T_U) \geq y_P + (y_M\beta_M + y_R\beta_R) - \phi \quad (3)$$

While simplifying (3) we get

$$F\left(\frac{y_R}{y_M\beta_M + y_R\beta_R} - 1\right) \leq \frac{\phi}{y_M\beta_M + y_R\beta_R} \quad (4)$$

The revolutionary threat in autocracy requires that the probability not to adopt a transfer program shouldn't be greater than the costs of the revolutionary action weighted by the average income of the middle and rich classes. It equals actually the marginal value of revolution. Therefore, in order to avoid the revolution, the rich should provide redistribution in a society with the probability no more than one minus the marginal value of revolution.

Let us now consider the case when inequality increases that implies the shift of y_M to the left. In democracy this leads to the decrease of $\frac{y_M}{y_M\beta_M + y_R\beta_R}$ and so the increase of the whole probability of redistribution $P(u_M|_{tr} \geq u_M|_{no\ tr}) = 1 - F\left(\frac{y_M}{y_M\beta_M + y_R\beta_R} - 1\right)$. Thus, we can formulate the next result that since $\tau = 1$ redistribution is more likely in unequal democracies.

Proposition 2 *In democracy the probability to adopt a universal transfer program increases with higher inequality.*

In autocracy we can observe the inverse effect. With higher inequality the ratio $\frac{y_R}{y_M\beta_M + y_R\beta_R}$ is increasing with respect to the income of the middle class. This leads to the decreasing probability of adopting a transfer program in autocracy. However, higher inequality equally increases the probability of revolution and this might offset the decrease of the probability of adopting a transfer. So if the constructed probability of transfers in autocracy decreases while inequality increases, the real probability drops only until the level when the poor is indifferent to rebel or not. The probability of transfers will be defined as $1 - F\left(\frac{y_R}{y_M\beta_M + y_R\beta_R} - 1\right) = 1 - \frac{\phi}{y_M\beta_M + y_R\beta_R}$.

Targeted scheme

The targeted scheme is characterized by pleasing the needs of the poor. We tax the middle and rich classes to increase the poor's consumption level. Thus, the transfers to

the rich and middle class equal zero and the transfers to the poor come to $T_T = z - y_P$. The targeted scheme is characterized by that the ruling class decides on transfers by maximizing its utility with respect to z . The poverty line is endogenized in this scheme. Therefore, the government budget constraint is $C(z) = \tau_T(y_M n_M + y_R n_R)$. Hence, in democracy the middle class's preferred policy would be the maximization of the following function:

$$V_T^M = \max_z \left(1 - \frac{C(z)}{(y_M n_M + y_R n_R)}\right) y_M - \xi(z, \lambda_M) \quad (5)$$

Under the targeted scheme the ruling class chooses the optimal minimal consumption level for the poor z . In addition, in autocracy the poor does not rebel if the revolutionary threat constraint holds and the minimum consumption level is satisfied through the targeted transfer scheme $C(z)$ with its corresponding probability.

Similarly to the universal scheme, we calculate the probabilities of the targeted transfers in democracy versus autocracy. The probabilities prove to be the same as in the case of the universal scheme and equal to $1 - F\left(\frac{y_i}{y_M \beta_M + y_R \beta_R} - 1\right)$ with $i = M, R$ for democracy and autocracy, respectively. Therefore, we get the following conclusion about the targeted transfers.

Proposition 3 *In democracy the probability to adopt a targeted transfer program is higher than in autocracy.*

For simplicity, let $C(z) = z - y_P$. Then, in democracy the middle class gets its maximum value when $z = 1 + y_P - \lambda_M (y_M n_M + y_R n_R) \frac{y_P}{y_M}$ if $\lambda_M (y_M n_M + y_R n_R) \frac{y_P}{y_M} < 1$ and $z = y_P$ otherwise. In autocracy we get the similar expressions but instead of y_M we have y_R : $z = 1 + y_P - \lambda_R (y_M n_M + y_R n_R) \frac{y_P}{y_R}$ if $\lambda_R (y_M n_M + y_R n_R) \frac{y_P}{y_R} < 1$ and $z = y_P$ otherwise. Following that $y_R > y_M$ by assumption, we can formulate the next result:

Proposition 4 *In autocracy the poverty line might be higher than in democracy.*

It's not so evident and interesting result. Actually, the poverty line depends as well from how large the disutility of the rich from poverty λ_R in comparison with the disutility

of the middle class λ_M . It depends on particular realizations but we can assume that in average $\lambda_R < \lambda_M$ that also lead to the higher poverty line z in autocracy.

Further, the revolutionary threat may lead to the even stronger threshold of introducing transfers:

$$1 - F\left(\frac{y_R}{y_M\beta_M + y_R\beta_R} - 1\right) \geq \frac{k - c}{1 - \lambda_R(y_M\beta_M + y_R\beta_R)\frac{y_P}{y_R}}$$

The tax rate equals the following: $\tau_T = \frac{z - y_P}{y_M^{n_M} + y_R^{n_R}} = \frac{1}{y_M^{n_M} + y_R^{n_R}} - \lambda_i \frac{y_P}{y_i}$ where $i = M, R$ for democracy and autocracy, respectively. We can notice that if inequality increases, then y_M switches to the left and $\frac{1}{y_M^{n_M} + y_R^{n_R}}$ increases too. However, if in autocracy $\lambda_R \frac{y_P}{y_R}$ doesn't change, in democracy $\lambda_M \frac{y_P}{y_M}$ increases too and can offset the increase of $\frac{1}{y_M^{n_M} + y_R^{n_R}}$.

The model provides a number of propositions that are tested empirically. First, we find that any transfer program is more probable in democracy than in autocracy. Further in democracy while inequality increases, the probability of redistributive transfers increases too. In autocracy it decreases unless the revolutionary threat becomes severe. If the transfer program is more targeted, than autocracy is characterized by the higher poverty line. Consequently, the tax rate might be higher in autocracy that lead to that the targeted transfer programs in autocracies are more costly. Further, if inequality increases, then autocracies are inclined to spend on targeted transfers more, their tax rate increases, while for democracies the effect might be compensating by less disutility from poverty as the middle class' income becomes closer to the poor class' income (the effect of $\lambda_M \frac{y_P}{y_M}$).

4 Data

The transfer variables are encoded based on the lists of social programs in two sources. First, we use the descriptive database of social assistance in developing countries by Barrientos et al. (2010). Second, we extract the data from the social transfers impacts matrix of the Global Extension for Social Security Project (GESS) by ILO (2010). Hence, we compose a unique quantitative panel dataset that lists social transfer programs with

major characteristics by country and year. The sample includes 143 countries from 1960 to 2012. These are 139 countries that the World Bank classifies as “low income”, “lower middle income” and “middle income” countries plus Uruguay, Trinidad and Tobago, Brunei and Chile where the transfer programs are reported in the Barrientos et al.’s dataset.

A variety of transfer programs include cash and in-kind transfers, programs conditioned to special requirements like regular medical investigations or school attendance, large integrated programs, and others. Following Barrientos (2013) we distinguish between three main types of social assistance programs in developing countries: pure transfers, income transfers combined with asset accumulation and integrated poverty reduction programs. The examples of pure transfers are transfers in cash to the poor, child allowances or social pensions. Income transfers combined with asset accumulation are defined as all programs providing transfers in cash or kind combined with the accumulation of human, physical or financial assets. In particular, such a program may be aimed at strengthening the productive capacity of households in poverty. Integrated programs are based on multidimensional understanding of poverty and imply a range of interventions directed to particular groups of the poor. The three-type typology by Barrientos et al. (2010) was extended by the type “others” in order to include information from GESS that does not fit into any of the three types. Further, we introduce our own classification of social programs in order to study more properly how the design of programs depend on political regimes and institutions. We distinguish between conditional cash transfers (CCTs), public works, social pensions and others.

As we mentioned above, a special dummy indicates whether the program implies cash or in-kind transfers, or both. We also create the variables of coverage and average budget per year. Depending on a program the coverage variable is measured either in individuals or in households. The budget variables have two dimensions. The first dimension is the absolute value of budget in millions of dollars³. The second dimension is more reliable

³If the budget information is presented only in local currency, then we convert the amount into dollars with the help of the currency exchange device that takes into account the inflation effect

because it represents budget as a share of the country's GDP.

Both sources do not claim to provide a complete list of social transfer programs in developing countries; e.g. Barrientos et al. (2010) select the programs "on the basis of the availability of information on design features, evaluation, size, scope, or significance". However, combining two sources we can assume that our dataset covers the most prominent and important programs that reflect the main characteristics and trends of social policies in different countries.

Our database compiles 122 programs. In particular, there are 61 transfer plus programs in 2010, 47 pure income transfer programs, 10 integrated transfer programs and 3 other transfer programs. Out of the 141 countries, 89 (63.12%) do not have a program and 52 (36.88%) have at least one program. India, with 15 programs, has the highest number of individual transfer schemes in place. In general, India's schemes are rather narrowly targeted to specific worker groups or local ethnic groups. Mexico, on the other hand, has 5 broad transfer programs, of which at least the Oportunidades program is broadly targeted and large in scale.

We consider first the database where a transfer program is a unit of analysis. Second, we conduct the major analysis on the country-year panel where the number of transfer programs and their characteristics are not crucial anymore. The difficulties in direct comparison of some programs in transfer volume and in the share of population covered are overcome by aggregating information from additional sources or by excluding programs without enough information.

The constructed dataset on social transfers is merged with the variables of interest from the Database of Political Institutions (DPI) by Beck et al. (2010), the Center for Systemic Peace's POLITY IV database (2010), Boix, Miller and Rosato's measure of democracy and the Archigos 2.9 dataset on leaders.

For the inequality measures we choose the most represented data from Solt (2009). The data on taxes, GDP per capita and GDP growth, primary completion rate, progression to secondary education, age-dependency ratio and population are taken from the World Bank Development Indicators Database.

5 Empirical Results

5.1 Regime type, inequality and adopting social transfer programs

We test whether a democratization leads to the higher probability of adopting social transfer programs. In addition, we study the effect of inequality on the transfer program choice, their budget and coverage.

First, we estimate simple linear (OLS) models on the pooled data with regional and year fixed effects.

$$T_{i,t} = \alpha_i + \eta_t + \delta Democ_{i,t} + X'_{i,t}\Gamma + \varepsilon_{i,t}$$

Following Acemoglu et al. (2013) we construct a five year panel as taking observations every five years. This approach is more appropriate than taking averages over a five year period since averages could introduce serial correlation and render results inconsistent. The dependent variable is a dummy that equals 1 if a country has any redistributive transfer program in a particular year and zero if it has none. The independent variables are taken in first lags to take into account that current social policy is determined by earlier levels of the independent variables. The specifications also differ in whether we use the polity or Boix et al's democracy dummy to indicate a regime type and whether we include inequality and primary and secondary enrollments as control variables. We also estimate non-linear (probit) and dynamic panel (GMM) models on the pooled data.

Table 2 reports the results of such pooled regressions. Regime type variable is positive and significant in all specifications. This confirms that more democratic countries have a higher probability of adopting a transfer program. The coefficient before Polity is lower because it changes from -10 (institutionalized autocracy) to 10 (institutionalized democracy) whereas Boix et al.'s variable is a dummy whether a regime is democratic or not. The coefficient on the lagged Gini variable also is positive and highly significant in all specifications where it's included in spite of that the availability of inequality data reduces

our sample by about one third. Hence, sharp inequality leads to a higher likelihood of having a transfer program.

The coefficient on lagged GDP per capita is negative while the coefficient on the squared term of GDP per capita is positive. This supports the non-linear effect of economic development on adopting a transfer program. As expected, the lagged population is positively significant confirming that densely populated countries more likely provide social transfers. The lagged age-dependency ratio negatively affects the likelihood of having social transfers in all specifications where we control for inequality. It is evident that a higher share of able-bodied population not dependent on pensions and allowances leads to a lower probability of transfer programs.

Including primary and secondary enrollments and resource rents reduces the sample by about twice. The school enrollment in primary education is positively significant whereas the enrollment in secondary education is negatively significant. This indicates that an increase in primary education is more relevant for the relatively poor and associated with adopting more social transfer programs. An increase in secondary education refers to the relatively richer segments of the society and is associated with adopting less social programs. It's interesting that the higher resource rents reduce the adoption of transfer programs. It might be interpreted as the regimes with more resource rents are less democratic and care less about the poor. Or, we may suppose that such regimes have enough assets from natural resources to please the voters so they introduce less transfer programs.

Table 3 reports the results from the non-linear (probit) models on the pooled data and dynamic panel (GMM) estimations. The latter specifications are presented to Probit specifications increase the magnitude of coefficients before the regime variable because of normal distribution and non-linear dependence. GMM results are close to those from the pooled regressions. The control variables demonstrate the same effects but the secondary education enrollment and resource rents are no more significant.

	(1)	(2)	(3)	(4)	(5)	(6)
L.Polity	0.0194*** (0.00203)	0.0191*** (0.00262)	0.0163*** (0.00340)			
L.Democracy				0.195*** (0.0278)	0.232*** (0.0350)	0.242*** (0.0460)
L.Gini		0.00999*** (0.00197)	0.00945*** (0.00223)		0.0104*** (0.00194)	0.00897*** (0.00229)
L.lnGDP	-0.166 (0.182)	-0.529** (0.221)	-0.545* (0.326)	-0.529*** (0.165)	-0.542*** (0.208)	-0.378 (0.330)
L.lnGDPsq	0.0133 (0.0126)	0.0367** (0.0151)	0.0376* (0.0218)	0.0394*** (0.0114)	0.0375*** (0.0142)	0.0260 (0.0221)
L.lnpopulation	0.109*** (0.0328)	0.118*** (0.0439)	0.110* (0.0611)	0.0899*** (0.0313)	0.114*** (0.0421)	0.121** (0.0614)
L.lnagedependency	0.00740 (0.0674)	-0.196** (0.0887)	-0.212* (0.128)	-0.000346 (0.0682)	-0.200** (0.0884)	-0.190 (0.130)
L.lnurban popul	-0.0531* (0.0290)	-0.0645 (0.0413)	-0.0555 (0.0558)	-0.0328 (0.0276)	-0.0599 (0.0397)	-0.0700 (0.0562)
L.lnprimary			0.217** (0.0929)			0.197** (0.0942)
L.lnsecondary			-0.0901* (0.0493)			-0.0826* (0.0496)
L.lnresource rents			-0.0481*** (0.0154)			-0.0358** (0.0153)
Constant	-13.12*** (2.287)	-14.68*** (3.298)	-16.74*** (5.400)	-13.38*** (2.200)	-16.73*** (3.167)	-20.50*** (5.096)
Year FE	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES
Observations	878	619	412	956	639	415
R-squared	0.242	0.273	0.281	0.220	0.261	0.274

Table 2: Political Regimes and Adopting Social Transfer programs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	probit	probit	probit	probit	GMM	GMM	GMM	GMM
L.Polity	0.0910*** (0.0127)	0.0778*** (0.0190)			0.0163*** (0.00618)	0.0182*** (0.00524)		
L.Democracy			0.815*** (0.170)	0.921*** (0.204)			0.420*** (0.115)	0.364** (0.155)
L.Gini		0.0355*** (0.0127)		0.0343** (0.0134)		0.00777** (0.00349)		0.00972* (0.00556)
L.lnGDP	-1.153 (1.206)	-2.908* (1.588)	-2.355** (1.078)	-2.640 (1.613)	-4.805* (2.805)	-0.699 (1.264)	-3.216 (2.264)	-0.265 (1.610)
L.lnGDPSq	0.0751 (0.0862)	0.181 (0.111)	0.166** (0.0766)	0.161 (0.113)	0.345* (0.202)	0.0443 (0.0874)	0.229 (0.162)	0.0138 (0.113)
L.lnpopulation	0.206*** (0.0578)	0.150* (0.0773)	0.200*** (0.0517)	0.123* (0.0738)	0.0477 (0.0384)	0.0574* (0.0301)	0.0595** (0.0266)	0.0656** (0.0327)
L.lnagedepend	-0.578 (0.469)	-1.422** (0.626)	-0.733 (0.471)	-1.467** (0.605)	0.222 (0.262)	-0.246 (0.206)	0.171 (0.212)	-0.228 (0.233)
L.lnprimary		1.071** (0.537)		0.978* (0.550)		0.185 (0.122)		0.240 (0.161)
L.lnsecondary		-0.219 (0.334)		-0.123 (0.325)		-0.0404 (0.0684)		-0.0481 (0.0924)
L.lnresource rents		-0.132 (0.110)		-0.102 (0.101)		-0.0271 (0.0210)		-0.0406 (0.0266)
Constant	2.592 (4.616)	8.734 (6.120)	6.945 (4.331)	8.288 (6.366)	14.85 (9.415)	2.036 (4.190)	9.427 (7.547)	-0.0956 (5.192)
Observations	878	412	956	415	878	412	878	412
Numb of countries					115	97	115	97
Sargan Pval					0.000	0.000	0.000	0.000
Hansen Pval					0.066	0.152	0.055	0.149

Table 3: Political Regimes and Adopting Social Transfer programs (Probit and GMM estimations)

5.2 Survival analysis of adopting social transfer programs

The transfer programs are approved for a long period so the moment of their adoption might be considered as an event occurrence. Therefore, we can apply the survival analysis that allows to estimate the probability of occurrence and survival of a transfer program. In addition, once a transfer program is in place, it is presumably difficult to obtain the

political support for ending it.

If T is a random variable representing the time until the start year of the transfer program. Then, we can estimate the survival function that defines the probability that an event has not been occurred during the particular period.

$$S(t) = Pr(T \geq t) = 1 - F(t) = \int_t^{\infty} f(x)dx$$

However, we focus on the inverse of the survival function that indicates the probability of occurrence. In a simple parametric case we assume that

$$T = exp(\alpha_i + \eta_t + \delta Democ_{i,t} + X'_{i,t}\Gamma) \cdot \varepsilon_{i,t}$$

Further, we linearize and estimate such a model.

Table 4 reports the results of the survival approach for all transfers programs. We assume that once the transfer program starts, then it has not been ended and the data are missing after the starting year. For both regime variables we get positive and significant coefficients. The higher democratic regime, the higher probability of pro-poor transfers. One democratic score increases the probability by 10% in terms of the polity index. On the basis of Boix data, the change from full autocracy to full democracy increases this probability by 100% that corresponds to the polity measure where the regime change is considered at least from -6 to 6. In addition, we confirm that higher inequality leads to the higher probability of adopting a transfer program. The drop of inequality decreases the probability of transfers by about 6-7%. More populated countries and countries with a higher ratio of working population demonstrate the higher probability of having a transfer program.

5.3 Regime type, inequality and attaching conditions to social transfers

One interesting implication is to test what is the rationale for attaching conditions to transfers in different political regimes. On the one hand, conditional programs may facili-

	(1)	(2)	(3)	(4)	(5)	(6)
	yearly panel	yearly panel	3-year panel	3-year panel	5-year panel	5-year panel
Polity	0.110*** (0.0427)		0.0877** (0.0412)		0.116*** (0.0437)	
Democracy		1.386*** (0.421)		1.008** (0.433)		1.068*** (0.395)
Gini	0.0719*** (0.0229)	0.0729*** (0.0231)	0.0606** (0.0238)	0.0665*** (0.0233)	0.0541** (0.0254)	0.0557** (0.0240)
lnGDP	1.965 (2.339)	1.847 (2.475)	0.602 (2.210)	-0.0854 (2.443)	-0.705 (2.267)	-0.632 (2.284)
lnGDPsq	-0.130 (0.163)	-0.115 (0.172)	-0.0348 (0.153)	0.0203 (0.169)	0.0511 (0.157)	0.0503 (0.159)
lnpopulation	0.212* (0.112)	0.213* (0.118)	0.233** (0.117)	0.255** (0.126)	0.173 (0.118)	0.183 (0.118)
lnagedepend	3.102*** (1.007)	2.737** (1.089)	2.776*** (1.027)	1.985* (1.145)	2.325** (1.100)	2.243** (1.085)
Observations	2,562	2,389	848	792	503	505

Table 4: Political Regimes and Adopting Social Transfer programs (Survival analysis)

tate targeting and provide only the “deserving poor” with transfers. That might be helpful in case of autocracies when the elite may use the transfer program to please the poor and gain public support. On the other hand, conditionality implies costlier implementation of poverty alleviation programs so autocracies are more likely to choose less expensive programs like direct unconditional income transfers. A pure motive for attaching conditions remain human capital investments and long-run development that is more inherent to higher accountable regimes. The level of inequality is critical as it helps to trace the motivations whether the regimes consider investments in human capital important while inequality increases. We, therefore, focus on the probability of conditional and unconditional transfer programs in democracies and autocracies, separately. Our dependent variables are dummies that equal 1 if a country has an unconditional/conditional cash transfer program and 0 otherwise. We estimate a fixed effect model with year dummies and lagged independent control variables.

Table 5 reports the effect of inequality on the probability of conditional and unconditional transfers in autocracies and democracies. We confirm that both regimes tend to

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Uncond	Uncond	Uncond	Uncond	Cond	Cond	Cond	Cond
	Democ	Democ	Autoc	Autoc	Democ	Democ	Autoc	Autoc
	Polity	Boix	Polity	Boix	Polity	Boix	Polity	Boix
L.Gini	0.00208 ^γ (0.00149)	0.00290* (0.00157)	0.00436*** (0.000678)	0.00595*** (0.000808)	-6.64e-06 (0.00116)	-0.000745 (0.00143)	-0.00279*** (0.000588)	-0.00230*** (0.000540)
L.lnGDP	-0.0123 (0.0162)	0.0149 (0.0186)	0.0433*** (0.0144)	0.0451*** (0.0147)	-0.0253* (0.0145)	-0.00285 (0.0163)	-0.0225*** (0.00866)	-0.00216 (0.00761)
L.lnurban	0.104*** (0.0230)	0.134*** (0.0241)	-0.00931 (0.0226)	0.00362 (0.0234)	-0.00390 (0.0199)	-0.00844 (0.0211)	-0.00792 (0.0172)	-0.0317** (0.0155)
L.lnpopulation	-0.0768*** (0.0265)	-0.129*** (0.0285)	0.0401* (0.0226)	0.0303 (0.0241)	0.0738*** (0.0229)	0.0796*** (0.0253)	0.0476*** (0.0171)	0.0577*** (0.0159)
L.lnagedepend	-0.948*** (0.0737)	-1.029*** (0.0805)	-0.333*** (0.0558)	-0.240*** (0.0606)	0.0266 (0.0674)	0.152* (0.0777)	0.252*** (0.0410)	0.0529 (0.0329)
Constant	3.671*** (0.458)	4.167*** (0.495)	0.340 (0.289)	-0.201 (0.323)	-1.330*** (0.395)	-2.173*** (0.430)	-1.466*** (0.238)	-0.583*** (0.199)
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,234	1,016	1,457	1,308	1,234	1,016	1,457	1,308
R-squared	0.387	0.430	0.281	0.219	0.349	0.317	0.272	0.164

Table 5: Inequality and Attaching Conditions to Transfer Programs

provide the poor with unconditional transfers while inequality increases. Although the effect is not large, it's quite robust especially for autocracies. Besides, the columns 7-8 show that inequality has a significantly negative effect on attaching conditions to transfer programs in autocracies. Indeed, the autocratic elite is likely to assign no conditions to transfers, thus focusing on direct measures to reduce inequality. Both these results confirm our intuition that autocracies rely on transfer programs as a tool to please the poor.

Table 5 demonstrates that it's not necessarily that rich countries introduce more conditions on pro-poor transfers. The result is significant only for the polity index so further tests are required. On the contrary, another finding that rich autocracies prefer more unconditional programs is quite robust. This, actually, is very consistent with the revolutionary threat argument in autocratic regimes.

The more populated countries afford more conditional transfer programs. That is caused by the purpose of such programs to promote human capital development. What is interesting that more population in democracies lead to less unconditional transfers. This might be explained by the economy of scale. A higher share of working age people is associated with more conditional transfers and less unconditional transfer programs. This conclusion is evident as old disabled people and children need more direct pure income transfers, whereas working age population benefit more from programs with investments in human capital development.

6 Concluding Remarks

Using a unique quantitative dataset on social transfer programs we find strong and significant evidence that a democratic score increases the probability that a country has a transfer program. The effect of inequality on anti-poverty policy also is positive and strong, leading to that higher inequality increases the likelihood of having a social assistance program. Additionally, there is evidence that attaching conditions to transfers is based rather on long-run human development and unequal autocracies significantly reduce

the probability of having a conditional social transfer. Moreover, higher total and less dependent population allow to provide conditional transfers with higher probability.

We also get interesting results concerning the budget of transfer programs in autocracies and democracies. While inequality increases autocracies enlarges the budget of transfer programs, and thus, please the poor to avoid their resentment by the regime. Social programs are aimed at the smaller but more selected groups of population. In autocracies the transfer programs are more targeted, they are classified usually as the other programs without any typical objectives, and there are very few conditional cash transfers.

One test for the intuition that autocracy uses transfers to suppress social unrest is to control for the age of target population of these programs. Our hypothesis is confirmed if the programs aim at the young and mature as well as politically active classes of population. We account for the age of the beneficiaries and support that autocracies have more transfers to the potential rebel groups of population.

One alternative explanation of our empirical findings concerns state capacity. Democracy is supposed to have higher state capacity and it's rather able to conduct more complicated conditional programs compared with autocracy. We tried to exclude this channel of influence by controlling for the tax revenue. This also allows to take into account the level of redistribution.

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