



Inequality, Privatization, and Democratic Institutions in Developing Countries*

LIDIA CERIANI**

Georgetown University

SIMONA SCABROSETTI***

University of Pavia and Università Bocconi

FRANCESCO SCERVINI****

University of Pavia

Received: September, 2020

Accepted: November, 2020

Abstract

Privatization of state-owned enterprises in low- and middle-income countries is regarded as an indispensable first step for the consolidation of national accounts, the development of financial markets, and the improvement of firms' efficiency. However, privatizations may also have a relevant distributional impact, particularly in developing countries, where proceedings from privatization may be a sizable resource for redistribution. This article is a first attempt to investigate the relationship between privatization and income inequality, focusing on the role of democratic institutions. We find that an increase in privatization proceeds is correlated with a reduction in income inequality in countries where representative political institutions are mature.

Keywords: Inequality, Democracy, Privatization, Developing countries, State-Owned Enterprises.

JEL Classification: D30, O15, P5.

1. Introduction

Since the first wave of privatization in Britain in the 1980s, many state-owned enterprises have been privatised in both developed and developing countries, with national differences

* The authors thank two anonymous reviewers for their helpful comments on earlier drafts of the manuscript. The usual disclaimer applies.

** ORCID ID: 0000-0002-0372-6072.

*** ORCID ID: 0000-0002-0142-6439.

**** ORCID ID: 0000-0001-6403-5876.

in terms of relevance, timing, and methods.¹ Globally, the estimated proceeds from divestiture programs since 1977 are US\$2 trillion (Megginson, 2010). Privatization in developing countries accounted for between one-third and one-half of the global share from 1988 to 1993 (Cook and Kirkpatrick, 1997). At the beginning of the 2000s, these countries further increased the value of their transactions, thus becoming the driving forces in global privatization efforts. Moreover, in these countries, the share of GDP comprising the proceeds from privatization is significant, reaching, for instance, about 17% in Bolivia in 2007 (World Bank Privatisation Database).²

The literature has emphasized several reasons behind this privatization trend. Most importantly, governments have been implementing divestiture programs as a means to achieve positive economic outcomes, among which (i) reducing the national budget deficits and the stock of national debt, (ii) developing financial markets, and (iii) increasing firms' efficiency (IMF, 2011). Moreover, when focusing on developing countries, international forces come to play. Precisely, the decision to implement privatization programs in developing countries has been primarily driven by international emulative diffusion (see Brune *et al.*, 2004; Doyle, 2010) and, above all, by binding and conditional requests from international financial institutions, that is, the International Monetary Fund (IMF) and World Bank (see Stallings, 1992).³ During the 1980s and the 1990s, on an average, developing countries recorded outstanding obligations to IMF and World Bank worth 3.1 and 9.2 percent of the GDP, respectively (see Brune *et al.*, 2004). Such loans, indispensable to these countries for financing their development programs, have often been conditional on the credible commitment of these countries towards implementing specific market-friendly reforms, generally beginning with the privatization of SOEs.⁴

Although privatization can contribute towards improving firms' efficiency, help countries to consolidate their financial performance, and become the prerequisite to broaden development opportunities, its distributional impact should not be disregarded.⁵ This is particularly true for developing countries where, due to governance failures or historical reasons, income and wealth tend to be more concentrated when compared to the developed countries (Kuznets, 1963).⁶

In this study, we posit that democratic institutions play a major role in determining the impact of privatization on income distribution through redistribution. As we will discuss more in details in the next section, privatization may affect inequality either directly, by concentrating the property of formerly public real assets in the hands of the wealthy elites; or indirectly, by reshaping, among others, labour markets, financial markets, and the public budget. In turn, these channels may depend on the quality of institutions and on the level of democracy. Thus, we empirically investigate whether in developing countries a relationship between privatization resources and income inequality exists, and whether it may be influenced by the presence of democratic institutions. In other words, we want to test whether privatization revenues are related to a reduction in income inequality and whether there is a potential role for democratic institutions in shaping their distributional impact.

Particularly, we focus on developing countries, which have recently experienced both economic and democratic transitions, although with some differences due to their history,

background, institutional, economic, and social characteristics.⁷ Exploiting privatization revenues data from the World Bank, inequality information from SWIID, and political indicators and a wide set of control variables from several other data sources, we build a panel of 62 developing countries over two decades. The dataset is then used to estimate whether there is a significant link between privatization and inequality and whether such relationship is mediated by the level of democracy. By using an interaction model, we show that an increase in privatization revenues is associated with a reduction in net-income inequality when political institutions are representative, accountable, and legitimate. This result is robust to different specifications and potential sources of endogeneity. Thus, the study shows that, in developing countries, the policymakers' choice of promoting not only economic but also political freedom seems to be related to an improvement in income distribution.

The paper is organized as follows. The next section presents theoretical considerations and an overview of the literature on the distributional impact of privatization. Section 3 provides a description of the data; section 4 presents our econometric method, describes our results, and performs some robustness checks. Section 5 concludes the study.

2. Theoretical Considerations and Related Literature

The theoretical literature is inconclusive in determining the distributional impact of privatization; this is because the same transmission channels may both increase and decrease inequality (see Birdsall and Nellis, 2003; Estrin and Pelletier, 2016).

First, the sign of the distributional impact is associated with the way assets' ownership is transferred from the state to private hands (see Megginson, 2010; Piketty, 2014). For example, the allocation of public assets only to a subset of individuals (e. g., entrenched political elites or their constituency) has the obvious effect of increasing inequality (see Acemoglu and Robinson, 2012; Nellis, 2006), while the distribution of vouchers to the entire population should have the opposite effect. At the same time, the concentration of ownership in the hands of a few private shareholders is commonly acknowledged to be related to efficiency improvements; this factor generates an equity-efficiency trade-off when designing asset transfer policies (see Estrin, 2002).

The labour market is another channel through which privatization may differently affect income distribution. There may be an increase in inequality following workforce redundancies in the privatized firms. Even if such employment costs can be limited to the initial phases of the restructuring process, the effect can be amplified by the potential inflow of foreign capital from developed countries following privatization. In fact, as predicted by the dependency theory, the reliance on foreign capital increases income inequality of a country through the under-absorption of labour and sectoral disparities due to the capital intensity of foreign investments (Evans and Timberlake, 1980). Moreover, privatization may lead to wage inequality between skilled and unskilled labour and lower social welfare (Chao *et al.*, 2006).

Privatization may potentially influence inequality by boosting the development of the financial sector. Channeling funds to the most productive uses and allowing households and small enterprises to access finance (once granted only to entrenched incumbents) would likely reduce inequality (World Bank, 2016). Nevertheless, improvements in the financial system may also funnel more capital to the wealthy and politically connected, thereby widening income inequality (see Levine, 2005, and references therein).

Moreover, as already mentioned, privatization is usually part of a broader package of market-friendly reforms intended to curb inefficiencies and boost economic growth and development (Bennett *et al.*, 2017; De Haan *et al.*, 2006).⁸ Some evidence points to a negative relationship between economic freedom and income inequality; given the growth-equity trade-off and the strong positive relationship between growth and economic freedom, any change in the direction of increasing economic freedom (e.g., privatization of SOEs) would lead to an increase in inequality (see Hall and Lawson, 2014; Okun, 1975; Scully, 2002). Nevertheless, recent evidence points to an inverted-U-shaped relationship between economic freedom and income inequality; once passed the tipping point, any improvement in economic freedom leads to a decrease in income inequality (refer to Wu and Yao, 2015, for the case of China and Bennett and Vedder, 2013 for the case of US).

Additional reforms, such as improving market competition and enforcing a regulatory regime, may or may not be implemented simultaneously, further complicating the identification of the nature (positive or negative) of the distributional impact of divestiture programs (Birdsall and Nellis, 2005; Florio and Puglisi, 2005).⁹ Even when we narrow the focus to the utility sector, wherein divestiture procedures generally mean the contemporaneous elimination of illegal or informal connections, improved quality, extended access, and a possible change in prices, it is difficult to arrive at a clear conclusion on the distributional impact of privatization (Estache *et al.*, 2001).

At the same time, privatization may be related to income inequality through redistribution. In fact, privatization generates a revenues flow in the form of privatization proceeds and taxes from the newly (higher) productive private firms that could be (partially) used for redistributive aims. Moreover, privatization frees public resources for better targeted public spending programs by ceasing costly transfers to inefficient public firms.¹⁰

We argue that, when looking at the relationship between privatization and income inequality, the role of relatively consolidated democratic institutions cannot be neglected. As claimed by Acemoglu and Robinson (2006), democratization can be considered as a commitment device for future redistribution from the rich (the elites) to the poor (the citizens).¹¹ In fact, democratization changes the position and preferences of the median voter, by enfranchising the poorest segment of the population, and thus moves public policies away from the preferences of the elites. This would drive a change in the policy agenda by including pro-equity measures such as the provision of public goods especially beneficial for the poor (Aidt *et al.*, 2006; Easterly, 2007).¹² Consequently, the more unequal the existing income distribution, the stronger will be the corresponding redistributive pressure.¹³ Moreover, the free flow of information about the condition of the poor may be embarrassing to a democratic government which

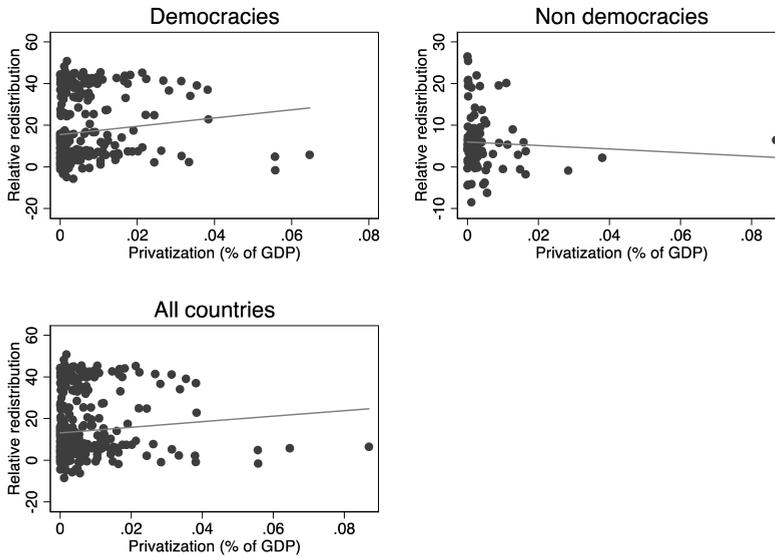
does not take into account their needs (Sen, 1981, 1999).¹⁴ All these arguments are consistent with the Meltzer and Richard (1981) model and with the more recent findings of Tan (2011).

Having recently witnessed both privatization programs and political transitions to democracy, developing countries become natural candidates for our analysis.¹⁵ While De Haan and Sturm (2003) find that political freedom anticipates economic freedom in developing countries, Birdsall (1999) highlights the risk of implementing privatization in the absence of consolidated institutions in the following words: *'The risks of privatization arise because developing economies, almost by definition, are handicapped by relatively weak institutions, less well-established rules of transparency, and often, not only high concentrations of economic and political power but a high correlation between those two areas of power.'* For instance, Uddin (2005) tells a cautionary tale about Bangladesh: not only privatization did not lead to the efficiency improvements predicted by its proponents, but it led to family capitalism, channeling power and wealth to few new owners, and even worsen workers' conditions. Similarly, Ivanovic *et al.* (2019) prove the failure of privatization in Serbia, where politicians and bureaucrats involved in formerly public enterprises co-opted the privatisation process and kept extracting rents through asset-stripping. Thus, in this study, we want to empirically investigate if there is a relationship between privatization proceeds and income inequality. In particular, we are interested in exploring whether relatively consolidated democratic institutions can play a relevant role in studying the sign (positive or negative) of the relationship between privatization proceeds and income inequality in developing countries.

Summarizing, it is possible to separate the link between privatization and inequality in two steps: first, privatization may (or may not) increase the resources available to governments to undertake redistributive policies; second, redistributive policies may (or may not) be effective in reducing inequality. Both channels crucially depend on the stability and the "quality" of institutions and on the accountability of policy makers and the control exerted by citizens and voters, that is the level of democracy. Figure 1 shows the correlation between privatization revenues and redistribution, at different levels of democracy, and seems to support our theoretical predictions. Unfortunately, data availability does not allow us to estimate a consistent structural model. In the empirical analysis we then estimate a reduced form model in which the correlation between privatization and income inequality is mediated by the level of democracy and the quality of institutions.

Our study is closely related to Ahmad (2017), who analyses the role of the political regime (democratic and non-democratic) in assessing the impact of economic freedom on inequality. Specifically, he estimates an inequality model that explicitly captures the interaction between economic freedom and democracy and finds that the increase in inequality following liberalization policies is attenuated when it is implemented in a more democratic political framework. In our study, by using an interaction model, we empirically test the role of democratic institutions in shaping the relationship between privatization, measured as monetary proceeds from the divestiture of SOEs, and income inequality through redistribution in developing countries. Our findings are in line with those of Ahmad (2017) and suggest that the choice of policymakers of both democratize and start privatization of SOEs may lead to an improvement in income equality.

Figure 1
CORRELATION BETWEEN PRIVATIZATION AND REDISTRIBUTION



Source: Authors' elaboration on World Bank Privatization Database and SWIID.

3. Data description

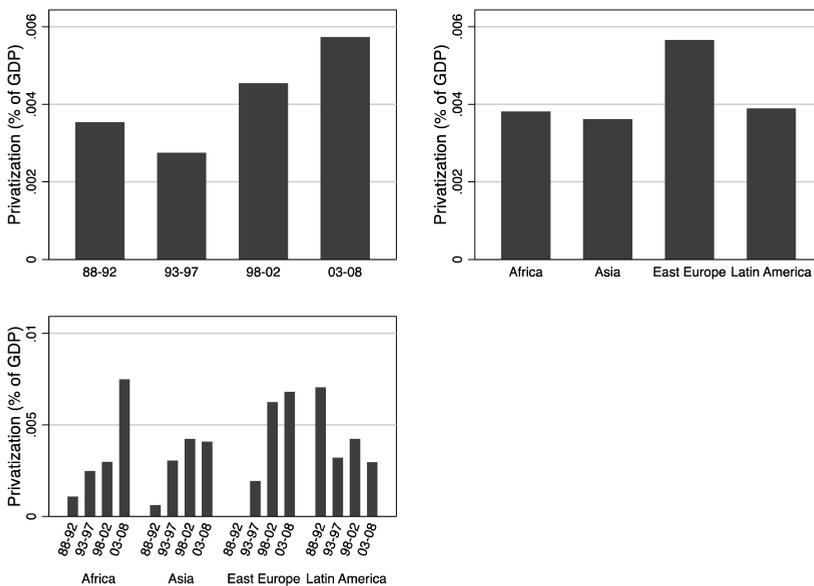
In order to empirically investigate the relationship between privatization, democratic institutions, and income inequality in developing countries, this study makes use of several data sources, as detailed in the following subsections.

3.1. Privatization data

Privatization data comes from the World Bank Privatisation Database, which covers the period 1988-2008 for low- or middle-income countries belonging to the African, Asian, Eastern European, and Latin American regions. The database includes transactions that generate monetary proceeds of at least US\$1 million for the government. To allow for international comparability, we normalize privatization revenue as a share of GDP.¹⁶ As shown in Figure 2, privatization proceeds as a share of GDP are quite stable from 1988 to 1997, while they more than doubled from the 2000s when developing countries became the driving forces in the global privatization process. An analysis of the different regions shows that countries in the Eastern European region record the highest privatization proceeds over GDP, while Asian countries show the lowest proceeds. The need to conform to the market system of the European Union to enable access explains the relevance of privatization revenues in Eastern Europe (Baldwin *et al.*, 1997). On the other hand, for historical reasons related to the role of the government in the post-colonial period, privatization has been very limited in South Asia,

while it was more widespread in East Asia, particularly, in China (Gupta, 2008). Africa, Asia, and Eastern Europe collected most of their privatization revenues in the period from 1998 to 2008. Particularly, in the beginning of the 1990s, Africa witnessed a strong opposition to privatization from both public-sector workers and politicians, which progressively softened mainly because of the need to restore public finances after the fiscal crisis in sub-Saharan countries and the reform-related pressures from international organizations (Bennell, 1997). Conversely, Latin America started to collect a high amount of resources from divestiture programs since the end of the 1980s, with very low proceeds remaining in the last period under consideration. Chile drove this wave of Latin American privatizations –its divestiture in infrastructure sector started in the end of the 1970s and peaked during the 1990s.

Figure 2
PRIVATIZATION PROCEEDS OVER GDP BY REGION AND PERIOD



Source: Authors' elaboration on World Bank Privatization Database.

Ideally, as already mentioned, it is preferred to disentangle the distributional impact of privatization stemming from different methods and occurring in different sectors. Unfortunately, the World Bank's Privatisation Database does not codify divestiture methods of SOEs, or divestiture sectors of SOEs, in a well-defined and homogeneous way. Therefore, in our empirical analysis, we cannot address these issues due to the lack of data.¹⁷

3.2. Inequality data

Choosing the data source to measure income inequality is not straightforward. While there are many country-specific household surveys that allow computing inequality indices,

cross-country comparability is still an open issue. The two main projects aimed at solving this issue are the Lisdatacenter (former Luxembourg Income Study, LIS, 2016),¹⁸ that collects national surveys and harmonizes them to maximize comparability, and the World Income Inequality Database (WIID) released by the UNU-WIDER (UNU-WIDER, 2015) that collects inequality indicators and classifies them according to quality, underlying measure (i. e., gross income, net-income, and consumption, among others), unit of analysis, equivalence scale, population, and sectoral coverage (i. e., urban and rural, among others). The emerging trade-off is between highly comparable data on a small set of high-income countries in few years and a wider data set of barely comparable indicators.

In this study, we choose a third option, namely, version 5 of the Standardized WIID (SWIID).¹⁹ SWIID is a project run by Frederick Solt since 2009 (Solt, 2009) that imputes the missing data on inequality from WIID by using multiple imputation techniques and validates the data using the high quality Lisdatacenter data set (refer to, Solt, 2016, for more details). The significant advantage of SWIID is that it provides an ideally comparable panel of inequality indicators; the drawbacks are as follows: (i) it only provides Gini coefficients (while other data sets also provide quantiles and mean income), and (ii) statistical analyses are required to consider the underlying imputation technique to achieve precision while estimating country/year values.²⁰

Table 1 shows the estimated means of the Gini coefficients computed on net-incomes (Gini net) both in the whole sample and in the four regional sub-samples. As expected, inequality is found to be much higher than the average in Latin America and much lower than the average in Eastern European countries.

Table 1
GINI COEFFICIENTS ON NET INCOMES

Area	Obs	Mean	Std. Err.
Africa	98	41.97	2.04
Asia	137	40.58	1.59
Eastern Europe	131	30.79	.70
Latin America	106	48.52	.84
All	472	39.94	1.21

3.3. Democracy data

Measuring the level of democracy of a country signifies translating considerable qualitative characteristics and features of its political system into a one-dimensional numerical scale. This is a very difficult task, usually subject to heroic assumptions and simplifications. Political scientists have proposed several democracy indices, each of them focusing on specific and partly different features of the political system of a country. The most commonly used indices in the economic literature are the Gastil index released by the Freedom House (Freedom House, 2016), the Polity2 index released by the Polity IV project (Marshall *et al.*, 2016), and the Cheibub index (Cheibub *et al.*, 2010). These measures differ at least with re-

spect to the underlying concept of democracy, the nature of the data used to classify political regimes, and the type of measurement (Cheibub *et al.*, 2010). However, discussing the merits and flaws of these democracy indicators is beyond the scope of this study.

In our baseline model, we decided to use the Gastil index of democracy, which is released annually by the Freedom House (Freedom House, 2016). This index is the average of two different indicators, one referring to civil liberties, and the other to political rights. Each country receives a score on a decreasing scale from 1 (the highest score) to 7 (the lowest score) in both dimensions, according to several aspects, such as the freedom of expression and belief, rule of law, associational and organizational rights, personal autonomy and individual rights, political pluralism and participation, electoral process, and the functioning of the government. In order to make our results easier to understand, we dichotomize the original Gastil index, thus identifying country/years with a Gastil index lower than 4 as democratic, and the others as non-democratic.²¹

3.4. Control variables

Similar to previous empirical studies on inequality (see Bergh and Nilsson, 2010), we also include the following controls in our baseline empirical analysis: the log of percapita GDP to capture the relationship between income levels and distributional outcomes (Kuznets, 1955); the share of foreign direct investments over GDP, which may increase income inequality in developing countries according to the dependency theory (ODI, 2004; Wan *et al.*, 2007); the educational attainment of population aged 25 years and over to take into account human capital (Krusell *et al.*, 2000; Lindqvist, 2005); the share of population living in urban areas, as a proxy for both economic development and high population heterogeneity; and the dependency ratio, which is the share of population under 15 years or above 65 years, to ensure that the relationship between income inequality and demographic changes is not neglected (Bennett and Nikolaev, 2017; Bergh and Nilsson, 2010).²² Data on independent variables are obtained from the World Development Indicators (World Bank), with the only exception of data on human capital, which are obtained from Barro and Lee (2013).^{23,24}

Table 2 reports the descriptive statistics for all the country/years included in the baseline model (shown in Table 4). The working data set consists of a yearly unbalanced panel of 472 observations, including 62 countries observed for about 7.5 points in time. The full list of countries is presented in Table 3, which also shows the average Gini coefficients and privatization proceeds by country in the main sample.

Table 2
SUMMARY STATISTICS

Varname	Obs	Mean	Std. Dev.	Min	Max
Privatization/GDP	472	.004	.009	0	.112
Gastil index	472	4.480	1.551	1	7
Gastil index (dummy)	472	.568	.496	0	1

(Continued)

Varname	Obs	Mean	Std. Dev.	Min	Max
Polity2 index	470	3.917	5.912	-7	10
Polity2 index (dummy)	470	.583	.494	0	1
Cheibub index	458	.640	.481	0	1
Gastil index of civil liberties	472	4.347	1.368	1	7
Gastil index of political rights	472	4.612	1.835	1	7
Per capita GDP (Current US\$)	472	2406	2157	142.3	13317.73
FDI/GDP	472	.026	.024	-.028	.158
Urbanization	472	53.45	20.29	11.42	92.83
Average years of schooling	472	6.67	2.73	.80	13.08
Dependency ratio	472	64.59	17.02	38.09	109.84
Economic freedom (overall score)	301	58.17	7.13	40.9	75.1
Financial freedom	301	52.39	15.74	10	90
Trade freedom	301	59.17	16.55	0	84
Investment freedom	301	57.97	13.57	30	90
Household price index	465	.381	.141	.136	1.011
Employment rate	465	.389	.073	.248	.591

Table 3
PRIVATIZATION AND INEQUALITY

Country	Obs	Privatization/GDP	Market Gini	Gini Net
Albania	6	1.072%	33.5	31.8
Algeria	3	0.357%	38.2	35.8
Argentina	11	0.723%	46.6	43.9
Armenia	2	0.646%	39.9	36.3
Bangladesh	4	0.010%	41.7	39.0
Barbados	1	0.000%	41.1	38.3
Belize	1	2.536%	57.3	54.2
Bolivia	5	0.699%	56.0	53.9
Brazil	18	0.173%	57.5	50.3
Bulgaria	14	1.187%	31.5	29.7
Cameroon	2	0.603%	45.3	42.2
Chile	10	0.218%	53.6	50.5
China	15	0.145%	45.1	44.6
Colombia	6	0.554%	52.8	51.2
Costa Rica	2	0.099%	45.0	41.5
Cote d'Ivoire	6	0.445%	44.8	42.2
Croatia	10	0.882%	44.2	28.3
Czech Republic	10	0.759%	43.2	24.6
Egypt	9	0.178%	36.0	34.2
Estonia	4	0.744%	48.5	35.3

(Continued)

Country	Obs	Privatization/GDP	Market Gini	Gini Net
Ghana	9	0.958%	38.5	36.4
Honduras	4	0.196%	52.0	49.2
Hungary	14	0.725%	50.9	28.8
India	15	0.086%	46.9	47.2
Indonesia	12	0.245%	37.4	35.0
Iran	1	0.093%	42.2	39.6
Jamaica	7	0.554%	48.4	44.7
Jordan	9	1.580%	39.9	38.4
Kazakhstan	4	4.060%	34.3	34.3
Kenya	9	0.277%	54.0	47.6
Lao	2	0.099%	34.9	33.1
Latvia	3	0.624%	53.3	34.1
Lithuania	10	0.718%	51.1	33.5
Malawi	2	0.112%	50.4	48.1
Malaysia	10	0.554%	47.0	43.6
Mexico	11	0.126%	48.5	47.8
Morocco	8	1.864%	42.2	40.0
Mozambique	3	0.221%	43.4	41.6
Nepal	1	0.275%	46.3	43.7
Nicaragua	4	0.306%	53.2	50.1
Pakistan	12	0.289%	34.4	31.4
Panama	5	1.811%	54.1	50.9
Peru	10	0.595%	53.9	53.8
The Philippines	13	0.289%	48.1	45.1
Poland	16	0.282%	49.1	30.0
Romania	14	0.804%	39.0	29.7
Russian Federation	14	0.291%	47.8	40.9
Senegal	2	0.457%	41.2	38.6
Slovak Republic	9	0.671%	44.3	26.0
South Africa	7	0.065%	65.0	59.1
Sri Lanka	11	0.300%	40.0	37.2
Tanzania	10	0.175%	38.4	36.6
Thailand	8	0.322%	45.1	41.9
Tunisia	10	0.377%	42.3	39.7
Turkey	16	0.216%	44.4	42.6
Uganda	11	0.216%	42.9	40.0
Ukraine	7	0.878%	31.7	30.9
Uruguay	4	0.473%	51.4	43.0
Venezuela	7	0.261%	45.0	42.3
Viet Nam	2	0.221%	40.8	39.0
Zambia	4	1.931%	55.6	53.3
Zimbabwe	3	0.528%	55.2	52.5

4. Method and results

In this section, we test the conditional hypothesis described before –in developing countries, the relationship between privatization proceeds and income inequality through redistribution depends on the existence of relatively consolidated democratic institutions. Thus, we estimate an interaction model. The pooled ordinary least squares (OLS) regression is described by the following equation:

$$G_{i,t} = \alpha + \beta D_{i,t-3} + \gamma P_{i,t-3} + \delta D_{i,t-3} \times P_{i,t-3} + \zeta X_{i,t-3} + \eta_t + \theta_j + \varepsilon_{i,t} \quad (1)$$

where G is the Gini coefficient computed on net-income in country i at year t , D is the dichotomized Gastil index of democracy, P is the ratio of revenues from privatization with respect to GDP,²⁵ X is the set of control variables, η is a set of yearly dummies,²⁶ and ε is the idiosyncratic error term. We also include region fixed effects (θ_j) to control for time invariant characteristics at a regional level.²⁷ It must be noted that the inclusion of the multiplicative interaction term ($D_{i,t-3} \times P_{i,t-3}$) allows us to explicitly test our hypothesis on the role of democratic institutions in shaping the relationship between income inequality and privatization revenue in developing countries (Brambor *et al.*, 2006). Since we expect the relationships between income inequality and independent variables not to be instantaneous, we use different lags in the regressors. We decided to show the results of our estimates with three lags in explanatory variables and controls. However, as we will better discuss in Section 4.1, our results are virtually unaffected by the use of different lags.²⁸ Finally, since the error term might be serially correlated within countries and thus overestimate the precision of our estimates, we always cluster the standard errors at the country level (see Bertrand *et al.*, 2004).

The results of our baseline model are shown in Table 4 and are organized as follows.²⁹ In the first (unconditional) specification, we only consider the democracy measure along with the total amount of privatization proceeds out of GDP, while, in the second specification, we add the interaction term, and, in the other specifications, we also add control variables.

The top part of Table 4 shows model parameters, while the bottom part of Table 4 shows the marginal effect of both privatization and democracy on income inequality.³⁰

Some caution is needed when interpreting multiplicative interaction models (we refer the reader to Brambor *et al.*, 2006, pp. 70-74, for an extensive discussion on this issue). It must be noted that the magnitude and significance of the single model parameters associated with the interaction variables have a limited explicative power; particularly, β and γ represent the marginal effect on inequality of democracy and privatization for the unique cases in which privatization proceeds and democracy (Gastil dummy) are zero, respectively.³¹ The magnitude and significance of the coefficient on the interaction term δ are also not helpful in asserting whether privatization proceeds have a meaningful conditional effect on income inequality (Ai and Norton, 2003). In fact, it is possible for the marginal effect to be significant even if the coefficients of the model parameters are not statistically significant.³²

Table 4
BASELINE MODEL (Gastil dummy)

Dep. var.: Gini net	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Gastil index (dummy)	2.144	2.714	2.693	2.830	2.705	2.684	2.711	2.863*
	1.834	1.843	1.777	1.893	1.830	1.728	1.822	1.710
Privatization / GDP	-84.419**	-42.062	-43.065	-52.993*	-47.131	-50.374	-43.208	-58.008*
	35.844	29.002	29.530	26.484	30.660	32.292	29.304	30.169
Gastil index (dummy) X Privatization / GDP	.	-165.171**	-164.864**	-192.873***	-160.064**	-169.944**	-163.680**	-181.298***
	.	75.485	75.125	68.607	71.785	80.163	73.567	66.135
Per-capita GDP (in log)	.	.	0.109	.	.	.	.	-0.619
	.	.	0.926	.	.	.	.	1.016
FDI / GDP	.	.	.	18.224	.	.	.	11.202
	.	.	.	26.612	.	.	.	27.532
Urbanization	.	.	.	.	0.020	.	.	0.024
	.	.	.	.	0.043	.	.	0.052
Average education	.	.	.	.	.	0.434	.	0.417
	.	.	.	.	.	0.551	.	0.538
Dependency ratio	.	.	.	.	.	.	-0.018	-0.011
	.	.	.	.	.	.	0.069	0.065
Constant	41.246***	41.024***	40.343***	40.973***	40.398***	39.735***	42.708***	43.904***
	3.532	3.547	6.418	3.551	3.793	3.585	7.292	9.456
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marginal effect of privatization in democracies	-84.419	-207.233	-207.930	-245.867	-207.195	-220.318	-206.888	-239.306
se	35.844	79.643	81.115	67.856	78.919	86.332	79.007	65.415
p-value	0.022	0.012	0.013	0.001	0.011	0.013	0.011	0.001
Marginal effect of Gastil index (dummy)	2.144	1.723	1.704	1.673	1.746	1.665	1.729	1.776
se	1.834	1.815	1.763	1.811	1.806	1.709	1.810	1.648
p-value	0.247	0.346	0.338	0.359	0.338	0.334	0.343	0.286
Model F-test	7.913	11.782	11.262	10.698	10.883	9.295	12.409	9.485
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	472	472	472	472	472	472	472	472
Countries	62	62	62	62	62	62	62	62

Note: *** p ≤ 1%, ** p ≤ 5%, * p ≤ 10%. Standard errors clustered at country level. All explanatory variables are three periods lagged.

Bearing this in mind, our results show that if Gastil dummy is zero, that is, the political system of a country cannot be classified as democratic, then the relationship between privatization proceeds over GDP and income inequality would be sometimes negative and statistically significant. At the same time, the relationship between democracy and income inequality is not statistically significant when the privatization revenue over GDP is zero. Moreover, the coefficient of the interaction term is always negative and statistically significant, and, mostly relevant, the marginal effect of privatization on income inequality is negative and statistically significant. Conversely, the marginal effect of democracy on Gini net is not statistically significant.³³ These findings allow us to state that, in developing countries, an increase in privatization proceeds is related to a reduction in income inequality, especially when democratic institutions are well-consolidated.

In order to be able to distinguish between the potentially different role of civil liberties protection and political rights guarantee when investigating the relationship between privatization proceeds and net-income inequality, we re-run our regressions by looking at these two different components of the Gastil index. Table 5 shows our results only for the least and for the most demanding specifications of Table 4, respectively.³⁴ Focusing on the parsimonious specification, we find that a statistically significant relationship between democracy and Gini net does not exist, neither when we are looking at the civil liberties component nor when we are looking at the political rights component (columns 1 and 3).

Table 5
ROBUSTNESS CHECKS: CIVIL LIBERTIES AND POLITICAL RIGHTS

Dep. var.: Gini net	(1)	(2)	(3)	(4)
	b/se	b/se	b/se	b/se
Gastil index of civil liberties	0.282 0.942	0.377 0.919	.	.
Privatization / GDP	-93.641*** 34.253	59.782 104.554	-91.050** 35.524	21.615 65.503
Gastil index X Privatization / GDP	.	-42.400 27.973	.	.
Gastil index of political rights	.	.	0.440 0.639	0.608 0.621
Gastil index X Privatization / GDP	.	.	.	-35.757** 17.051
Per-capita GDP (in log)	.	-0.460 1.017	.	-0.700 0.978
FDI / GDP	.	5.317 28.257	.	10.131 28.463
Urbanization	.	0.020 0.052	.	0.025 0.053
Average education	.	0.399 0.574	.	0.376 0.552
Dependency ratio	.	-0.010 0.073	.	-0.020 0.071
Constant	40.655*** 4.804	42.239*** 9.772	40.250*** 3.914	43.953*** 9.654

(Continued)

Dep. var.: Gini net	(1)	(2)	(3)	(4)
	b/se	b/se	b/se	b/se
Year FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Marginal effect of privatization	-93.641	-130.661	-91.050	-146.941
se	34.253	41.457	35.524	41.053
p-value	0.008	0.003	0.013	0.001
Marginal effect of civil lib./pol. rights	0.282	0.147	0.440	0.414
se	0.942	0.901	0.639	0.598
p-value	0.766	0.871	0.493	0.491
Model F-test	8.618	7.998	7.971	8.509
p-value	0.000	0.000	0.000	0.000
Obs.	472	472	472	472
Countries	62	62	62	62

Note: *** p ≤ 1%, ** p ≤ 5%, * p ≤ 10%. Standard errors clustered at country level.

All explanatory variables are three periods lagged.

At the same time, in both cases, we find a negative and statistically significant relationship between privatization revenue and Gini net. Moreover, our findings, for the most complete specification, suggest that only the coefficient of the interaction term between privatization and political rights is negative and statistically significant (columns 2 and 4). Conversely, the marginal effect of privatization, at this point, computed at the mean value of both civil liberties and political rights indices, respectively, in our sample, is negative and statistically significant in both cases; it implies that an increase in privatization proceeds is related to a reduction in income inequality when both civil liberties are well-protected and political rights are well-guaranteed.³⁵

Summing up, our analysis seems to show that, in developing countries, the choice of policymakers to democratize, that is, increase either civil liberties protection or political rights guarantee, and to start economic reforms may lead to an improvement in income equality.

4.1. Robustness checks

In this section, we aim to check the robustness of our findings by (i) using different democracy measures, (ii) enlarging the set of control variables, and (iii) testing different lags in explanatory variables and controls.

In the first robustness check, we test whether our results can be affected by the choice of the democracy index. In fact, as underlined by Cheibub *et al.* (2010), the different measures of democracy are not interchangeable and, consequently, the choice of the index can matter. Thus, we re-run our regressions by replacing the Gastil dummy with all the democracy measures most commonly used in the economic literature, that is, the Gastil index itself (not dichotomized), the Cheibub index (Cheibub *et al.*, 2010), and the Polity2 index (both the original one and our dichotomized version) from the Polity IV project (Marshall *et al.*, 2016).³⁶

Table 6
ROBUSTNESS CHECKS: DEMOCRACY

Dep. var.: Gini net	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Privatization / GDP	-92.442**	45.395	-76.180***	-74.258**	-83.673**	-56.455*	-82.843**	-106.110***
	35.033	81.955	28.316	36.140	36.615	33.044	37.631	32.412
Gastil index	0.437	0.594	.	.	.	.	.	.
	0.829	0.811	.	.	.	.	.	.
Gastil index X Privatization / GDP	.	-40.520*	.	.	.	.	.	.
	.	21.724	.	.	.	.	.	.
Cheibub index	.	.	-0.245	0.566	.	.	.	.
	.	.	1.519	1.623	.	.	.	.
Cheibub index X Privatization / GDP	.	.	.	-84.743	.	.	.	.
	.	.	.	54.767	.	.	.	.
Polity IV index (dummy)	1.881	2.790	.	.
	1.909	1.933	.	.
Polity IV index (dummy) X Privatization / GDP	-184.669***	.	.
	66.882	.	.
Polity IV index	0.220	0.269
	0.186	0.175
Polity IV index X Privatization / GDP	-12.236**
	5.249
Per-capita GDP (in log)	.	-0.629	.	0.274	.	-0.482	.	-0.616
	.	0.994	.	0.915	.	1.009	.	1.001
FDI / GDP	.	8.165	.	2.5.259	.	12.487	.	12.909
	.	28.566	.	22.575	.	28.163	.	26.898
Urbanization	.	0.023	.	-0.019	.	0.006	.	0.015
	.	0.052	.	0.045	.	0.055	.	0.056
Average education	.	0.377	.	0.323	.	0.476	.	0.383
	.	0.558	.	0.588	.	0.546	.	0.547
Dependency ratio	.	-0.017	.	0.002	.	-0.021	.	-0.025
	.	0.073	.	0.067	.	0.065	.	0.070
Constant	40.178***	43.218***	41.626***	39.248***	41.689***	44.689***	42.340***	46.795***
	4.376	9.708	3.548	9.349	3.553	9.332	3.702	9.630

(Continued)

Dep. var.: Gini net	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marginal effect of privatization	-92.442	-131.312	-76.180	-159.001	-83.673	-241.123	-82.843	-147.475
se	35.033	38.528	28.316	43.012	36.615	62.481	37.631	39.313
p-value	0.011	0.001	0.009	0.000	0.026	0.000	0.032	0.000
Marginal effect of democracy (any index)	0.437	0.351	-0.245	0.058	1.881	1.682	0.220	0.196
se	0.829	0.786	1.519	1.542	1.909	1.849	0.186	0.169
p-value	0.600	0.657	0.872	0.970	0.329	0.367	0.241	0.250
Model F-test	8.162	8.413	12.378	11.288	8.232	8.833	8.319	9.109
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	472	472	458	458	470	470	470	470
Countries	62	62	61	61	60	60	60	60

Note: *** p ≤ 1%, ** p ≤ 5%, * p ≤ 10%. Standard errors clustered at country level. All explanatory variables are three periods lagged. The marginal effect of privatization is computed at the mean value of continuous democracy indices (Gastil index and Polity IV index) and at 1 for dichotomous democracy indices.

The Cheibub index extends the dichotomous regime classification introduced by Álvarez *et al.* (1996) by classifying a country as a democracy in the following cases: the chief executive is chosen by popular election or by a body that was itself popularly elected, the legislature is popularly elected, there is more than one political party competing in the elections, and the incumbent is replaced by elections that are organized under the same rules as those that brought the incumbent to office. Otherwise, the Cheibub index classifies a country as a dictatorship.

The Polity2 index³⁷ is instead computed as the difference between an indicator of democracy and an indicator of autocracy. It ranges between -10 (autocracy) and 10 (full democracy). Even if its two constitutive dimensions summarize several characteristics of the political system, the Polity2 index can be mainly referred to as the concept of positive political freedom that corresponds to the liberty that citizens can achieve by participating in the political (i.e., in the decision-making) process (Berlin, 1969). In dichotomizing the Polity2 index, we define a country as democratic if the index itself is at least equal to 6.

As shown in Table 6, except for the most demanding specification with the Gastil index (column 2), in all the other specifications, privatization proceeds over GDP are negatively and significantly related to income inequality when democracy is zero. At the same time, a statistically significant relationship between democracy (whatever measure we use) and income inequality does not exist when privatization revenue is zero. The coefficient of the interaction term is always negative and statistically significant except when democracy is measured by using the Cheibub index. Finally, and most importantly, we find that our main result on the marginal effect of privatization proceeds on income inequality always holds. This implies that this finding is robust to all these different measures that specifically capture only particular aspects of a multi-dimensional concept such as that of democracy. Conversely, the marginal effect of democracy computed at the mean value of privatization proceeds in our sample is never statistically significant.³⁸

Second, we test the robustness of our results by widening the set of control variables. Specifically, in our empirical estimates, we include the following: (i) the employment rate, (ii) the household price index, and (iii) the Heritage foundation index of economic freedom that summarizes a broad set of categories: from property rights protection and absence of corruption to the size of government; from business, labor and monetary freedom to financial, investment and trade freedom (see Carter, 2007; Davis and Hopkins, 2011).³⁹ In this way, we control for most of the different mechanisms underlined by the theoretical literature through which privatization programs can both positively and negatively affect income distribution. In fact, the employment rate and the household price index help us to consider the potential indirect effects of privatization on inequality through the labour market and differences in consumption price levels across countries, respectively. Moreover, apart from the fact that economic freedom is related not only to effective democracy (Lawson and Clark, 2010) but also to economic growth, by looking at its financial, investment, and trade freedom components, we can explicitly control for market openness.

Table 7
ROBUSTNESS CHECKS: ECONOMIC CONTROLS

Dep. var.: Gini net	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Gastil index (dummy)	2.292	2.272	2.496	2.434	2.342	2.353	2.604	2.702
Privatization / GDP	-39.048	-21.060	-28.590	-39.014	-38.932	-35.890	-43.406	-11.258
Gastil index (dummy) X Privatization / GDP	51.637	49.471	53.598	51.423	51.430	50.901	50.906	53.113
	-152.591**	-158.195**	-168.517**	-171.270**	-149.911**	-158.498**	-166.204**	-173.045**
	75.596	75.767	78.241	81.688	72.119	74.680	78.776	82.093
Employment rate	.	9.547	.	.	.	.	.	14.339
	.	15.221	.	.	.	.	.	12.818
Household price index	.	.	-6.352	.	.	.	.	-5.090
	.	.	8.448	.	.	.	.	8.756
Economic freedom (overall score)	.	.	.	-0.105	.	.	.	0.040
	.	.	.	0.107	.	.	.	0.142
Financial freedom	.	.	.	.	-0.082*	.	.	-0.084
	.	.	.	.	0.046	.	.	0.052
Investment freedom	.	.	.	.	.	-0.024	.	0.023
	.	.	.	.	.	0.050	.	0.065
Trade freedom	.	.	.	.	.	.	-0.083*	-0.090*
	.	.	.	.	.	.	0.043	0.048
FDI / GDP	-4.796	-11.707	-3.949	1.753	4.301	-3.644	-5.761	-9.860
	30.979	30.679	30.734	30.927	30.360	30.954	29.667	31.671
Per-capita GDP (in log)	-1.155	-0.754	-0.397	-0.605	-0.385	-0.981	-0.659	1.004
	1.166	1.170	1.746	1.225	1.230	1.115	1.107	1.700
Urbanization	0.010	0.019	0.011	0.004	0.010	0.012	0.008	0.025
	0.057	0.056	0.056	0.055	0.054	0.057	0.053	0.050
Average education	0.643	0.631	0.620	0.740	0.818	0.632	0.818	0.949
	0.644	0.639	0.642	0.655	0.621	0.646	0.631	0.644
Dependency ratio	-0.074	-0.037	-0.044	-0.054	-0.035	-0.066	-0.048	0.057
	0.075	0.089	0.088	0.069	0.068	0.074	0.070	0.087
Constant	53.291***	43.692**	47.803***	53.555***	48.157***	52.865***	50.820***	26.864
	11.009	17.669	14.490	10.998	10.732	10.817	10.213	18.325

(Continued)

Dep.var.: Gini net	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marginal effect of privatization in democracies	-191.639	-179.256	-197.107	-210.284	-188.843	-194.388	-209.611	-184.303
se	64.125	67.160	64.068	73.125	59.071	63.869	68.679	72.477
p-value	0.004	0.010	0.003	0.006	0.002	0.004	0.004	0.014
Marginal effect of Gastil index (dummy)	1.443	1.392	1.559	1.481	1.508	1.472	1.680	1.740
se	1.876	1.896	1.878	1.854	1.791	1.849	1.753	1.643
p-value	0.445	0.466	0.410	0.428	0.403	0.430	0.342	0.294
Model F-test	9.642	10.742	9.926	11.507	11.545	9.088	8.536	15.950
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	297	297	297	297	297	297	297	297
Countries	55	55	55	55	55	55	55	55

Note: *** p ≤ 1%, ** p ≤ 5%, * p ≤ 10%. Standard errors clustered at country level. All explanatory variables are three periods lagged.

Table 8
ROBUSTNESS CHECKS: LAGS

Dep.var.: Gini net	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se	b/se
Lags	0	1	2	3	4	5	6	7	8	9
Gastil index (dummy)	-0.109	0.939	0.981	1.868	1.112	1.023	1.292	0.029	-0.247	-1.447
	2.128	2.310	2.333	2.154	2.448	2.496	2.484	2.711	2.670	2.785
Privatization / GDP	-24.374	34.767	-15.770	-15.213	5.317	-33.843	-10.913	25.430	-2.301	-65.300
	47.394	64.089	48.869	40.280	66.985	47.209	44.702	79.432	83.329	46.232
Gastil index (dummy) X Privatization / GDP	-152.312	-312.738***	-200.145*	-416.106***	-234.696*	-256.002**	-403.529***	-323.421**	-218.083	-121.894
	112.212	111.370	118.367	106.673	136.951	110.274	114.130	137.920	137.124	146.485
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marginal effect of privatization in democracies	-107.482	-135.877	-124.979	-242.259	-122.744	-173.529	-231.096	-151.043	-121.296	-131.811
se	59.850	63.752	66.969	63.365	80.287	72.242	71.876	85.575	80.779	87.672
p-value	0.077	0.037	0.067	0.000	0.132	0.020	0.002	0.084	0.140	0.140
Model F-test	2.082	2.610	1.919	3.463	2.165	3.765	3.236	3.168	2.292	2.508
p-value	0.016	0.003	0.029	0.000	0.014	0.000	0.001	0.001	0.016	0.011
Obs.	472	411	413	472	377	335	303	262	232	204
Countries	62	59	59	62	56	56	54	46	48	45

Note: *** p ≤ 1%, ** p ≤ 5%, * p ≤ 10%. Standard errors clustered at country level.

Table 7 summarizes our results and is organized as follows: we start with the most demanding specification of Table 4 (that is reported in column 1 of Table 7). Subsequently, we add each of the above-mentioned controls (columns 2-7) consecutively, while, in the last specification, we add all these new controls (column 8). Our estimates show that the coefficient of the interaction term is always negative and statistically significant. The same is true for the marginal effect of privatization on income inequality computed when Gastil dummy is 1. At the same time, there is a negative and statistically significant relationship between trade freedom and Gini net, while none of the other mechanisms through which privatization should affect income distribution seems to be at work in our sample of developing countries.

Finally, we perform checks on the baseline model, as in Table 4, by using different lags in our independent variables. The goal is twofold –on one side, to proxy the timing of privatization on inequality, and, on the other side, to support the evidence against the presence of reverse causality issues in our estimates (see Bergh and Nilsson, 2010). As for the first, we can observe (Table 8) that the marginal effect of privatization on inequality can assume a bell-shaped structure (in absolute value), being low and less significant in the first and last periods, while higher and more significant between 2 and 5/6 lags. Unfortunately, owing to a highly unbalanced panel, the sample size and the number of countries considered change across lags, making a proper comparison difficult to perform. The issue of reverse causality might be harmful for the entire analysis. Indeed, one could assume that there is a causal effect of inequality on privatization, but the direction is in principle unclear. On the one hand, high inequality might lead the economic elite to favor privatization in order to buy the State-owned enterprises. On the other hand, high inequality might also lead to less privatization, if governments and voters believe that public services are instrumental to reduce inequality. Whatever the channel, we mitigate this empirical issue by taking lagged values of privatization as control variables. In this way, we just need to assume that inequality in year t does not affect privatization revenues in year $t-3$. Moreover, if revenues are realized in $t-3$, the political process leading to privatization has very likely started some time before. A second possible source of endogeneity is the effect of inequality on the level of democracy. However, the reasons leading to a switch of regime are usually multifaceted and it is difficult to state that it is income inequality only that leads to a change of regime. Indeed, democracy is a very persistent variable also in our dataset of developing countries. From a purely econometric perspective, if such reverse causality were really in place, we would expect contemporaneous effects to be stronger and highly significant. Instead, what we find in the data is that the contemporaneous effects are smaller in magnitude and not statistically significant. Of course, this is only a mild test to rule out reverse causality, but it suggests that it is likely not to be a relevant issue for the present analysis.

5. Conclusions

To the best of our knowledge, this study is the first attempt to empirically investigate the relationship between privatization proceeds and income inequality, exploiting the heterogeneity in the consolidation of democratic institutions in low and middle-income countries.

In particular, our analysis aimed at testing whether the presence of mature representative political institutions is key to observe a decrease in income inequality following privatization.

Our findings, robust to different specifications, different measures of democracy, different controls, and different lags in explanatory variables, suggest that divestiture programs combined with more consolidated democratic institutions have a good chance of equalizing income. In countries where representative political institutions are mature, our results show that an increase in privatization proceeds is in fact correlated with a reduction in income inequality. This finding provides empirical evidence to the absence of distributional risks of divestiture programs in developing economies, provided they have already transitioned to democracy (Birdsall, 1999).

Some open issues remain. First, a clear identification method to determine the causal relationship between democracy and privatization is yet to be found. Until now, we are not in a position to recommend the consolidation of democratic institutions before privatization. In fact, privatization might be a condition to get the democratization process started, and, in turn, democratization may contribute toward increasing the benefits of privatization in terms of greater income equality. Second, reverse causality needs to be further analyzed; although our time-lags models suggest a clear time trend, we acknowledge that this is only a mild test. Finally, it would be interesting to explore how privatization and democracy affect inequality, by disentangling the effects of different redistribution mechanisms (e. g. transfers in cash, or in kind), addressing differences in access and quality of services provided by SOEs and privatized SOEs, and including different distributional measures (e. g., consumption inequality). A prerequisite for addressing the aforementioned issues, including the implementation of more advanced econometric analyses, would be to get access to comprehensive, comparable, consistent, and retrospective privatization and inequality data that may allow a more accurate examination of how these economic and political mechanisms interact.

Notes

1. From a historical perspective, the first denationalization program after World War II was implemented in Germany by the Adenauer government in 1961, but the first relevant privatization program was adopted by the Thatcher government (see Megginson and Netter, 2001).
2. Refer to subsection 3.1 for a basic discussion of World Bank privatization data referring to developing countries (data.worldbank.org/data-catalog/privatization-database).
3. For a theory that sheds new light on the relationships between countries transitioning to democracy and international organizations see Poast and Urpelainen (2018) and Cassani (2019).
4. Refer to Williamson (1993) for the inclusion of privatization among the policies in the 'Washington consensus' between the US Treasury and the international financial institutions. Additionally, refer to Oppen (2004) about the role of IMF and the International Bank for Reconstruction and Development (IBRD) loans in explaining the progress in privatization.
5. Efficiency improvements are more likely to be observed when privatization is implemented along with deregulation or other increasing competition strategies (refer to Cavaliere and Scabrosetti, 2008, for a survey of the literature on privatization and efficiency).

6. For instance, the average Gini index, circa 2010, was 30.9 in Europe and Central Asia, 35.5 in South Asia, 36.4 in North Africa and the Middle East, 37.5 in East Asia and Pacific, 43.5 in Sub-Saharan Africa, and 43.6 in North America and 47.8 in Latin America and the Caribbean (our computation from UNU-WIDER World Income Inequality Database (WIID)).
7. As emphasized by a recent and growing literature, democratic and economic transitions are typically related (see among others Giavazzi and Tabellini, 2005; Papaioannou and Siourounis, 2008; Persson and Tabellini, 2007). Additionally, refer to Dinavo (1995) on the impact of privatization on economic development and democracy.
8. Concerning the relationship between economic freedom and inequality, refer to Bennet and Nikolaev (2017) and references therein.
9. For example, in the European Community, the privatization strategy accounts for the following steps: privatization, regulation, vertical disintegration, and liberalization (Ceriani and Florio, 2011).
10. It must be noted that public debt in developing countries is mainly held by public institutions or international organizations and, consequently, the market pressure for debt reduction in these countries is less relevant than that in developed economies (World Bank, 2016).
11. However, it has to be noticed that there is no consensus on the positive relationship between democratization and redistribution, neither in the theoretical nor in the empirical literature (refer to, among others, Bennett and Nikolaev, 2016; Fishman *et al.*, 2015; Georgiadis and Manning, 2012; Harms and Zink, 2003; Milanovich, 2000; Ross, 2006; Scervini, 2012).
12. See also Cutright (1967); Hewitt (1977); Muller (1985, 1988); Stack (1979).
13. Other contributions on the political mechanism through which greater income inequality leads to greater redistribution can be found in Alesina and Perotti (1996) and Alesina and Perotti (1997). Lindqvist and Ostling (2013) study voters' preferences for redistribution in light of endogenous identity choices (social classes or ethnic group). They find that social class is more relevant, and redistribution is higher in ethnically more homogeneous societies.
14. Concerning the relationship between democracy, redistributive taxation, and the private provision of public goods, refer to Markussen (2011) and Profeta *et al.* (2013).
15. Refer to Parker and Kirkpatrick (2005) for a review of both evidence and policy lessons arising from privatization in developing countries.
16. Instead of looking at privatization proceeds, one could also look at the share of the public (or private) sector in the economy. However, data on the SOEs sector are not available for a sufficient number of (data-poor) countries included in our sample.
17. Refer to Brada (1996) for a general classification of privatization methods and a discussion of the methods adopted by developing countries more often.
18. lisdatacenter.org.
19. Refer to Bennett and Nikolaev (2017) and Bergh and Nilsson (2010) for information on the reasons that lead to the selection of swIID over the Standardized Income Distribution Database (SIDD) realized by Babones and Alvarez-Rivadulla (2007).
20. Concerning the possible issues arising from the use of secondary data sets for the analyses of cross-national inequality, refer to Atkinson and Brandolini (2001).
21. It must be noted that our results still hold if we use different thresholds to dichotomize the Gastil index. Moreover, in Section 4.1 we will check the robustness of our baseline model's results with respect to the choice of the democracy indicator.
22. It must be noted that, in Section 4.1, we will enlarge the set of controls according to the theoretical literature on the distributional impact of privatization.

23. The Barro-Lee dataset includes data at country level collected every five years. We expand the dataset by assigning the reported values to the next four years (e.g.: the values for 1990 are used until 1994, those for 1995 until 1999 and so on).
24. We are aware that there are many other variables that have been named as related to inequality. However, we cannot further enlarge our set of control variables due to the lack of comparable and reliable data for the whole sample of developing countries included in our analysis.
25. Refer to Doyle (2010) on the discussion of exogenous determinants of privatization.
26. The use of year fixed effects could approximate the technological progress that is often theoretically associated with (increased) inequality.
27. Within-country inequality is very persistent. This persistence does not allow us to obtain statistically significant estimates when using country fixed effects. We also computed the estimation on a model with 5-years country averages in order to account for such persistence. The coefficients are qualitatively similar, but not statistically significant, likely due to the drop of the sample size to less than 150 observations.
28. Unfortunately, there is no way of running information criterion tests to determine the ‘optimal’ choice of the lag due to the multiple imputation nature of the swiID data.
29. Given that we use the Gini index as the dependent variable, a positive (negative) relationship between our explanatory variables means that an increase in explanatory variables would be related to an increase (decrease) in income inequality.
30. It must be noted that we compute the marginal effect of privatization on income inequality when Gastil dummy is 1, while we compute the marginal effect of democracy on income inequality at the mean value of privatization proceeds in our sample.
31. Contrary to several other applications, in this case it is not possible to plot marginal effects of privatization at different levels of democracy, since the latter is a dummy variable.
32. This happens when the covariance term, which is part of the standard error of the marginal effect, is negative.
33. It must be noted that, for completeness, we also show the marginal effect of democracy on Gini net, even if we are only interested in the theoretically more accurate hypothesis according to which democracy can lead to identify a negative relationship between privatization proceeds and income inequality through redistribution. In other words, our interpretation of the relationship between democracy and inequality always assumes privatization revenue to be constant.
34. Owing to space constraints, we only show the results for these two specifications. It must be noted, however, that our results are the same for all the other specifications of Table 4 and are available upon request.
35. Even in this case, neither the marginal effect of civil liberties nor the marginal effect of political rights, computed at the mean value of privatization revenue in our sample, are statistically significant.
36. Results may also be affected by the thresholds used to dichotomize the ordinal indices. However, we replicate the results by using different thresholds and no significant differences emerge in any of the main specifications.
37. www.systemicpeace.org.
38. Even in this case, owing to space constraints, we decided to show our findings for only the most parsimonious and the most demanding specifications. However, our results hold in all the other specifications of Table 4 and are available upon request.
39. Data on employment rate and the household price index are taken from Penn World Tables (Feenstra *et al.*, 2013), while data on economic freedom are released by the Heritage foundation (Heritage Foundation, 2016). It must be noted that the size of our sample reduces when we add these control variables. The size of our sample reduces even more if we further control for a specific measure of institutional quality, i.e., the Corruption Perceptions Index published by Transparency International from 1995. However, our findings still hold and remain available upon request.

References

- Acemoglu, D. and Robinson, J. A. (2006), *Economic Origins of Dictatorship and Democracy*, Cambridge University Press.
- Acemoglu, D. and Robinson, J. A. (2012), *Why Nations Fail*, New York, Random House.
- Ahmad, M. (2017), "Economic Freedom and Income Inequality: Does Political Regime Matter?", *Economies*, 5(18).
- Ai, C. and Norton, E. (2003), "Interaction Terms in Logit and Probit Models", *Economic Letters*, 80: 123-29.
- Aidt, T. S., Dutta, J. and Loukoianova, E. (2006), "Democracy comes to Europe: franchise extension and fiscal outcomes 1830-1938", *European Economic Review*, 50: 249-83.
- Alesina, A. and Perotti, R. (1996), "Income distribution, political instability, and investment", *European Economic Review*, 40(6): 1203-1228.
- Alesina, A. and Perotti, R. (1997), "The welfare state and competitiveness", *American Economic Review*, 87(5): 921-39.
- Alvarez, M., Cheibub, J. A., Limongi, F. and Przeworski, A. (1996), "Classifying political regimes", *Studies in Comparative International Development*, 31(2): 3-36.
- Atkinson, A. B. and Brandolini, A. (2001), "Promise and pitfalls in the use of 'secondary' datasets: income inequality in OECD countries as a case study", *Journal of Economic Literature*, XXXIX: 771-799.
- Babones, S. J. and Álvarez-Rivadulla, M. J. (2007), "Standardized income inequality data for use in cross-national research", *Sociological Inquiry*, 77: 3-22.
- Baldwin, R. E., Francois, J. F. and Portes, R. (1997), "The costs and benefits of Eastern Enlargement: The impact on EU and Central Europe", *Economic Policy: A European Forum*, 12(24): 125-170.
- Barro, R. and Lee, J. (2013), "A New Data Set of Educational Attainment in the World, 1950-2010", *Journal of Development Economics*, 104: 184-198.
- Bennell, P. (1997), "Privatization in Sub-Saharan Africa: Progress and Prospects during the 1990s", *World Development*, 25(11): 1785-1803.
- Bennett, D. L. and Vedder, R. K. (2013), "A Dynamic Analysis of Economic Freedom and Income Inequality in the 50 U.S. States: Empirical Evidence of a Parabolic Relationship", *The Journal of Regional Analysis and Policy*, 43(1): 42-55.
- Bennett, D. L. and Nikolaev, B. (2016), "Factor endowments, the rule of law and structural inequality", *Journal of Institutional Economics*, 12(4): 773-795.
- Bennett, D. L. and Nikolaev, B. (2017), "On the ambiguous economic freedom-inequality relationship", *Empirical Economics*, 53(2): 717-754.
- Bennett, D. L., Faria, H. J., Gwartney, J. and Morales, D. R. (2017), "Economic Institutions and Comparative Economic Development: A Post-Colonial Perspective", *World Development*, 96: 503-519.
- Bergh, A. and Nilsson, T. (2010), "Do liberalization and globalization increase income inequality?", *European Journal of Political Economy*, 26: 488-505.

- Berlin, I. (1969), *Four Essays on Liberty*, Oxford University Press, London.
- Bertrand, M., Duflo, E. and Mullainathan, S. (2004), "How much should we trust differences-in-differences estimates?", *The Quarterly Journal of Economics*, 119(1): 249-275.
- Birdsall, N. (1999), "Globalization and the developing countries: The inequality risk". in: *Remarks at Overseas Development Council Conference, Making Globalization Work*, International Trade Center, Carnegie Endowment for International Peace, Washington, DC.
- Birdsall, N. and Nellis, J. (2003), "Winners and losers: Assessing the distributional impact of privatization", *World Development*, 31(10): 1617-33.
- Birdsall, N. and Nellis, J. (eds.) (2005), *Reality Check: The Distributional Impact of Privatization in Developing Countries*. Center for Global Development, Washington, DC.
- Brada, J. (1996), "Privatization Is Transition Or Is It?", *Journal of Economic Perspectives*, 10: 67-86.
- Brambor, T., Clark, W. R. and Golder, M. (2006), "Understanding interaction models: Improving empirical analyses", *Political Analysis*, 14: 63-82.
- Brune, N., Garrett, G. and Kogut, B. (2004), "The international monetary fund and the global spread of privatization", *IMF Staff Papers*, 51(2): 195-219.
- Carter, J. R. (2007), "An empirical note on economic freedom and income inequality", *Public Choice*, 130: 163-177.
- Cassani, A. (2019), "Organizing Democracy: How International Organizations Assist New Democracies", *The Journal of Development Studies*, 55(4): 743-744.
- Cavaliere, A. and Scabrosetti, S. (2008), "Privatization and efficiency: From principals and agents to political economy", *Journal of Economic Surveys*, 22(4): 685-710.
- Ceriani, L. and Florio, M. (2011), "Consumer surplus and the reform of network industries: a primer", *Journal of Economics*, 102: 111-122.
- Chao, C. C., Hazari, B. and Yu, E. (2006), "Rising wage inequality in developing economies: Privatization and competition", *Journal of International Trade & Economic Development*, 15(3): 375-385.
- Cheibub, J., Gandhi, J. and Vreeland, J. (2010), "Democracy and dictatorship revisited", *Public Choice*, 143(1-2): 67-101.
- Cook, P. and Kirkpatrick, C. (1997), "Policy arena: Privatization and public enterprise reform in developing countries: the world bank's bureaucrats in business report. introduction and overview", *Journal of International Development*, 9(6): 843-47.
- Cutright, P. (1967), "Inequality: a cross national analysis", *American Sociological Review*, 32: 562-578.
- Davis, L. and Hopkins, M. (2011), "The Institutional Foundations of Inequality and Growth", *The Journal of Development Studies*, 47(7): 977-997.
- De Haan, J. and Sturm, J. (2003), "Does more democracy lead to greater economic freedom? New evidence for developing countries", *European Journal of Political Economy*, 19(3): 547-563.
- De Haan, J., Lundström, S. and Sturm, J. (2006), "Market-Oriented Institutions and Policies and Economic Growth: A critical survey", *Journal of Economic Surveys*, 20(2): 157-191.
- Dinavo, J. V. (1995), *Privatization in developing countries: Its impact on economic development and democracy*, Greenwood Publishing Group.

- Doyle, D. (2010), "Politics and privatization: Exogenous pressures, domestic incentives and state divestiture in Latin America", *Journal of Public Policy*, 30(3): 291-320.
- Estache, A., Gómez-Lobo, A. and Leipziger, D. (2001), "Utilities Privatization and the Poor: Lessons and Evidence from Latin America", *World Development*, 29(7): 1179-1198.
- Easterly, W. (2007), "Inequality does cause underdevelopment: Insights from a new instrument", *Journal of Development Economics*, 84: 755-776.
- Estrin, S. (2002), "Competition and Corporate Governance in Transition", *Journal of Economic Perspectives*, 16(1): 101-124.
- Estrin, S. and Pelletier, A. (2016), "Privatisation in Developing Countries: What Are the Lessons of Recent Experience?", *IZA WP*, No.10297.
- Evans, P. B. and Timberlake, M. (1980), "Dependence, inequality, and the growth of the tertiary: A comparative analysis of less developed countries", *American Sociological Review*, 45(4): 531-552.
- Feenstra, R. C., Inklaar, R. and Timmer, M. (2013), "The Next Generation of the Penn World Table", *NBER Working Paper*, no. 19255.
- Fishman, R., Jakiela, P., Kariv, S. and Markovits, D. (2015), "The distributional preference of an elite", *Science*, 349(6254).
- Florio, M. and Puglisi, R. (2005), "Public ownership, privatization and regulation: social welfare counterfactuals for British telecom", *Working Paper*, 13-05, Georgetown University.
- Freedom House (2016), *Freedom in the World 2016*, freedomhouse.org.
- Georgiadis, A. and Manning, A. (2012), "Spend it like Beckham? Inequality and Redistribution in the UK, 1983-2004", *Public Choice*, 151: 537-563.
- Giavazzi, F. and Tabellini, G. (2005), "Economic and political liberalizations", *Journal of Monetary Economics*, 52(7): 1297-1330.
- Gupta, N. (2008), "Privatization in South Asia", in Roland, G. (ed.), *Privatization: successes and failures*, Columbia University Press.
- Hall, J. C. and Lawson, R. A. (2014), "Economic freedom of the world: An accounting of the literature", *Contemporary Economic Policy*, 32(1): 1-19.
- Harms, P. and Zink, S. (2003), "Limits to redistribution in a democracy: a survey", *European Journal of Political Economy*, 19: 651-68.
- Heritage Foundation (2016), *2016 Index of Economic Freedom, Promoting Economic Opportunity and Prosperity*, www.heritage.org.
- Hewitt, C. (1977), "The effect of political democracy on equality in industrial societies: A cross-national comparison", *American Sociological Review*, 42: 450-62.
- IMF (2011), *Fiscal monitor. addressing fiscal challenges to reduce economic risks. International Monetary Fund*, Washington DC.
- Ivanović, V., Kufenko, V., Begović, B., Stanisić, N. and Geloso, V. (2019), "Continuity Under a Different Name: The Outcome of Privatisation in Serbia", *New Political Economy*, 24(2): 159-180.
- Krusell, P., Ohanian, L. E., Ríos-Rull, J. V. and Violante, G. L. (2000), "Capital-skill Complementarity and Inequality: A Macroeconomic Analysis", *Econometrica*, 68(5): 1029-1053.

- Kuznets, S. (1955), "Economic growth and income inequality", *American Economic Review*, 45: 1-28.
- Kuznets, S. (1963), "Quantitative aspects of the economic growth of nations: viii. Distribution of income by size", *Economic Development and Cultural Change*, 11(2): 1-80.
- Lawson, R. A. and Clark, J. R. (2010), "Examining the Hayek-Friedman hypothesis on economic and political freedom", *Journal of Economic Behavior & Organization*, 74(3): 230-239.
- Levine, R. (2005), "Finance and Growth: Theory and Evidence" in Aghion, P. and Durlauf, S. N. (eds.), *Handbook of Economic Growth*, 1A, Chapter 12: 866-934.
- Lindquist, M. J. (2005), "Capital-Skill Complementarity and Inequality in Sweden", *Scandinavian Journal of Economics*, 107(4): 711-735.
- Lindqvist, E. and Östling, R. (2013), "Identity and redistribution", *Public Choice*, 155(3-4): 469-491.
- LIS (2016), www.lisdatacenter.org (multiple countries), Luxembourg: Luxembourg Income Study Database.
- Markussen, T. (2011), "Democracy, redistributive taxation and the private provision of public goods. European", *Journal of Political Economy*, 27: 201-213.
- Marshall, M. G., Gurr, T. R. and Jagers, K. (2016), POLITY IV PROJECT, Political Regime Characteristics and Transitions, 1800-2015, Center for Systemic Peace.
- Meggison, W. L. and Netter, J. M. (2001), "From State to Market: A Survey of Empirical Studies on Privatization", *Journal of Economic Literature*, XXXIX: 321-389.
- Meggison, W. L. (2010), *Privatization trends and major deals in 2010*, Report 6-22, Privatization Barometer.
- Meltzer, A. H. and Richard, S. F. (1981), "A rational theory of the size of government", *Journal of Political Economy*, 89(5): 914-27.
- Milanovich, B. (2000), "The median-voter hypothesis, income inequality and income redistribution: an empirical test with the required data", *European Journal of Political Economy*, 16: 367-410.
- Muller, E. N. (1985), "Income inequality, regime, repressiveness, and political violence", *American Sociological Review*, 50: 47-61.
- Muller, E. N. (1988), "Democracy, economic development, and income inequality", *American Sociological Review*, 53: 50-68.
- Nellis, J. (2006), "Privatization, a summary assessment", *Working Paper 87*, Centre for Global Development.
- ODI (2004), *Foreign Direct Investment, Income Inequality and Poverty. Experiences and Policy Implications*, Dirk Willem te Velde (ed.), Overseas Development Institute.
- Okun, A. M. (1975), *Equality and efficiency: the big tradeoff*, Brookings Institution Press, Washington, DC.
- Opper, S. (2004), "The political economy of privatization: Empirical evidence from transition economies", *KYKLOS*, 57(4): 559-86.
- Papaioannou, E. and Siourounis, G. (2008), "Democratization and growth", *The Economic Journal*, 118: 1520-51.

- Parker, D. and Kirkpatrick, C. (2005), "Privatisation in Developing Countries: A Review of the Evidence and the Policy Lessons", *The Journal of Development Studies*, 41, 4: 513-541.
- Persson, T. and Tabellini, G. (2007), "The growth effect of democracy: Is it heterogeneous and how can it be estimated", *Working Paper* 13150, NBER.
- Piketty, T. (2014), *Capital in the Twenty-First Century*, Cambridge, MA: Belknap Press
- Poast, P. and Urpelainen, J. (2018), *Organizing Democracy: How International Organizations Assist New Democracies*, Chicago, IL: University of Chicago Press.
- Profeta, P., Puglisi, R. and Scabrosetti, S. (2013), "Does democracy affect taxation and public spending? Evidence from developing countries", *Journal of Comparative Economics*, 41, 3: 684-718.
- Ross, M. (2006), "Is democracy good for the poor?", *American Journal of Political Science*, 50(4): 860-74.
- Scervini, F. (2012), "Empirics of the Median Voter: Democracy, Redistribution and the Role of the Middle Class", *The Journal of Economic Inequality*, 2012, 10(4): 529-550.
- Scully, G. W. (2002), "Economic freedom, government policy and the trade-off between equity and economic growth", *Public Choice*, 113: 77-96.
- Sen, A. (1981), *Poverty and Famines: An Essay on Entitlement and Deprivation*, Oxford University Press, New York.
- Sen, A. (1999), *Development as Freedom*, Alfred A. Knopf, New York.
- Solt, F. (2009), "Standardizing the World Income Inequality Database", *Social Science Quarterly*, 90(2): 231-242.
- Solt, F. (2016), "The Standardized World Income Inequality Database", *Social Science Quarterly*, 97(5): 1267-1281.
- Stack, S. (1979), "The effects of political participation and socialist party strength on the degree of income inequality", *American Sociological Review*, 43: 168-71.
- Stallings, B. (1992), "International Influence on Economic Policy: Debt, Stabilization and Structural Reform", in Haggard, S. and Kaufman, R. (eds.), *The Politics of Economic Adjustment*, Princeton University Press: Princeton.
- Tan, E. S. (2011), "Democracy, wages and inequality: political voice and public finance redistribution", *Working Paper* November 05, University of London Royal Holloway College Department of Economics.
- UNU-WIDER (2015), World Income Inequality Database (WIID3c), September, <https://www.wider.unu.edu/project/wiid-world-income-inequality-database>.
- Wan, G., Lu, M. and Chen, Z. (2007), "Globalization and Regional Income Inequality Empirical Evidence from Within China", *Review of Income and Wealth*, 53: 35-59.
- Williamson, J. (1993), "Democracy and the Washington Consensus", *World Development*, 21(8): 1329-36.
- World Bank (2016), *International Debt Statistics 2016*, Washington, DC: World Bank.
- Wu, Y. and Yao, H. (2015), "Income Inequality, State Ownership, and the Pattern of Economic Growth - A Tale of the Kuznets Curve for China since 1978", *Atlantic Economic Journal*, 43: 165-180.

Uddin, S. (2005), "Privatization in Bangladesh: The Emergence of 'Family Capitalism'", *Development and Change*, 36: 157-182.

Resumen

La privatización de las empresas estatales en los países de renta baja y media se considera un primer paso indispensable para la consolidación de las cuentas nacionales, el desarrollo de los mercados financieros y la mejora de la eficiencia de las empresas. Sin embargo, las privatizaciones también pueden tener un impacto distributivo relevante, especialmente en los países en desarrollo, donde los procedimientos de privatización pueden constituir un recurso considerable para la redistribución. Este artículo es un primer intento de investigar la relación entre la privatización y la desigualdad de ingresos, centrándose en el papel de las instituciones democráticas. Encontramos que un aumento de los ingresos procedentes de la privatización está correlacionado con una reducción de la desigualdad de ingresos en los países donde las instituciones políticas representativas son maduras.

Palabras clave: desigualdad, democracia, privatización, países en desarrollo, empresas estatales.

Clasificación JEL: D30, O15, P5.