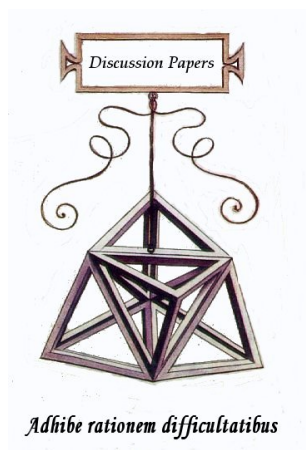




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Human Rights and Inequality

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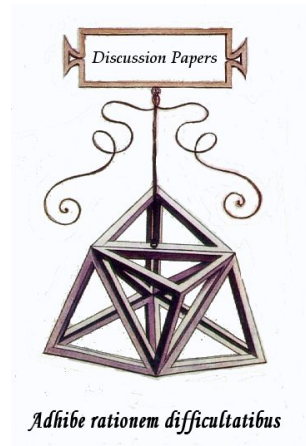
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Human Rights and Inequality

Abstract

We estimate the effect on income inequality of the ratification of the two fundamental human rights treaties, the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR), and of the ICCPR's optional protocol, in a large panel of countries, 1960-2015. We propose a novel instrumental variable strategy, using the diffusion of national television broadcasting as an instrument for treaty ratification, based on the hypothesis that broadcasting exposure raised public awareness of human rights issues and thereby encouraged governments to ratify. Rather than relying on a single specification, we systematically estimate all combinations of control variables under three alternative identification designs, retaining only those satisfying a pre-specified set of weak-instrument and overidentification diagnostics. Ratification of the ICCPR has a robust, sizable, negative effect on inequality across all three designs; ICESCR and the optional protocol are identified only under specific instrument sets. A cumulative ratification index confirms a strong, robust negative effect.

Keywords: inequality; human rights; media effects; treaty ratification; international law; instrumental variables.

JEL Classification: D63, K33, O15, L82, P48

Human Rights and Inequality*

Samantha Ajovalasit[†] Andrea Mario Lavezzi[‡] Giorgio Tortorici[§]

Abstract

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1 Introduction

A large recent literature has emphasized the effects of institutions on economic development, arguing that the “rules of the game” (North, 1990) fundamentally affect per-capita income in the long run (see, e.g., Acemoglu et al., 2005). That is, institutions (e.g. the protection of property rights, the political regime, the international trade arrangements, etc.) shape the incentives for individuals and firms to save, invest, and innovate, affecting in this way economic prosperity.

In this article we consider an important aspect of the “rules of the game” that can prevail in a country, namely the adoption, promotion and protection of human rights, and its effect on income inequality. The intuition we wish to explore is that the promotion and protection of human rights should grant more possibilities of participation to social and economic activities to a larger number of individuals, and should therefore be expected to reduce economic inequality.

Specifically, we consider as a proxy for the promotion and protection of human rights within a country the ratification of two fundamental international treaties elaborated by the United Nations (UN), and one optional protocol: the International Covenant on Civil and Political Rights (ICCPR), and its optional protocol (OP) and the International Covenant on Economic, Social and Cultural Rights (ICESCR). These treaties were adopted in 1966 and entered into force in 1976. By ratifying these treaties, a country takes a formal and binding step to introducing institutional changes, essentially legal, that should guarantee and protect human rights within its territory. The ratification of the OP, furthermore, implies a strengthening of the commitments of a country, after it has ratified the treaty. We consider the ratification of the human rights treaties an improvement in the institutional quality of country from the socio-economic point of view that can reduce income inequality.

In particular, we propose an empirical analysis of the effect of countries’ ratification of ICCPR, OP, and ICESCR on income inequality measured by the Gini index, for a large panel of countries in the period 1960-2015. Furthermore, in the empirical analysis we adopt an instrumental variable (IV) approach that takes into account a novel hypothesis, namely that the diffusion of television broadcasting at national level contributed to push governments to ratify the two international treaties on human rights.

That is, in line with current research on the socio-political effects of the media (Della Vigna

and La Ferrara, 2015), our hypothesis is that diffusion of television broadcasting increased the awareness of the population of human rights-related issues (like having more freedom, more access to education, etc) and encouraged governments to ratify the treaties on human rights to accommodate voters’ preferences (see Simmons, 2009, p. 237-38, on Japan). That is, television might have represented a “window on the world” (Mai, 2017, p.10), and have favored: “the availability of information about the outside world and exposure to other ways of life” (Jensen and Oster, 2009, p. 1058). Television, more specifically, may increase awareness and salience of human rights issues by both proposing different lifestyles and socio-economic arrangements, in which the liberties guaranteed by human rights are evident, and by directly discuss human rights issues, for example the cases of human rights violations (Ignatieff, 1985, p. 68).

Our empirical analysis is based on a IV-panel regression approach in which, instead of selecting a particular specification, we explore the space of possible models by estimating all combinations of a set of control variables under three alternative identification designs, in the spirit of the approach pioneered by Sala-I-Martin (1997), retaining only those satisfying a pre-specified set of weak-instrument and overidentification diagnostics. Our main findings are: ratification of the ICCPR has a robust, sizable, negative effect on inequality across all three designs, while ICESCR and the optional protocol are identified only under specific instrument sets. A cumulative ratification index confirms a strong, robust negative effect.

The rest of the article is organized as follows: in Section 2 we describe the literature related to this article and provide details on our hypotheses and on the novelties of our approach; in Section 3 we summarize the historical background on the introduction and ratification of the human rights treaties, which are briefly described in Section 4; in Section 5 we describe the dataset, in Section 6 we present the results of the econometric analysis; Section 7 contains some concluding remarks.

2 Related Literature

Our work speaks to different strands of literature: the literature on the economic effects of institutions, the literature on the effects of the ratification of human rights treaties, that include studies on the effects on inequality, the literature on the determinants of human rights treaty ratification, the literature on the socioeconomic, political and cultural effect of the media.

The seminal contribution of North (1990) placed at the forefront of the analysis of economic development the institutional quality of a country. For example, a country in which property rights are well-protected will generate strong incentives for firms to invest in physical capital and to innovate, feeling safe to appropriate the returns from the investment. Countries with weak institutions, on the contrary, are bound to stagnate. The analysis of Acemoglu et al. (2001), in particular, related the institutional quality of former colonies to the incentives faced by the colonial powers to establish productive or extractive institutions, determining in this way the long-run economic fate of the colonies (see also Rodrik et al., 2004 and Acemoglu et al., 2005 for detailed discussions).

As pointed out by Chong and Gradstein (2007): “[c]ountries with bad institutions seem also more likely to have high inequality”. In other words, institutional quality can also matter for economic inequality. Chong and Gradstein (2007), in particular, study the mutual relationship between institutional quality and inequality. Their intuition is that weak institutions allow rent-seeking by the rich, which increases inequality. Inequality, in turn, allows the rich to control the political process, favoring the political choice of weak institutional arrangements to protect their own interests. Given the compelling argument that inequality and institutional quality mutually reinforce each other, we will adopt an IV approach in our econometric analysis to deal with the implied endogeneity problem.

The issue of economic inequality in itself acquired enormous salience in recent discussions among economists and policy makers, in particular following the publication of Piketty (2014), after some ups and downs in the interest for the topic after the seminal contribution of Kuznets (1955). The literature on the determinants of inequality is vast, and a large number of factors, besides institutions, have been identified as correlates of inequality: economic development, the economic structure, trade liberalization, financial development, etc. (see, e.g., Furceri and Ostry, 2019, for a recent account of the literature and more references, and Milanovic, 2024 for an analysis of past and recent inequality trends), and inequality in turn affects growth (Steenbrink and Skali, 2026).

Simmons (2009) is a key contribution on the empirical analysis of the effects of the ratification of human rights treaties. Simmons (2009) finds that the ratification of human right treaties had significant and measurable impact on the promotion of civil rights, and of women

and children rights, providing support to our hypothesis that the ratification of human rights treaties can be considered an improvement of the institutional quality of a country. Simmons (2009), however, focuses on the political consequences of the ratification, and does not consider its impact on economic inequality. In addition, Simmons (2009) utilizes an instrumental variable approach to identify the effect of the ratification but does not consider media diffusion among the instruments for the ratification, as we do in this article.

To the best of our knowledge, Cole (2015) is the only article that considers the effect of the ratification of human rights treaties on inequality. Specifically, Cole (2015) finds that ratification of ICESCR reduces inequality, and that this effect is stronger in developed economies. Our article, however, differs from Cole (2015) in some important respects: Cole (2015) only focuses on the effect of the ratification of the ICESCR on income inequality, while we consider the effects of the ratification of the two treaties ICCPR and ICESCR and of the optional protocol of the ICCPR. In addition, the instrumental variable approach is different. While Cole (2015) instruments the ratification variable by some variables related to the political regime of a country, distinguishing between developed and developing countries (e.g. a “Right to strike” index, a measure of Executive/legislative alignment, a judicial independence index, a measure of legislative fractionalization and a measure of legislative majority, see Cole, 2015, p. 372), we introduce a different hypothesis, and instrument the ratification variable by an index indicating the introduction of a national television broadcasting system. The latter aspect introduces a novel perspective of the determinants of the ratification of human rights treaties.

Our hypothesis on the role of television, namely the diffusion of national broadcasting, is consistent with the large literature on the socioeconomic, political and cultural effects of the media. For example, Enikolopov et al. (2011) show that access to the only television channel that was not under government control in the Russian elections of 1999, implied a lower share of votes for the pro-government party and a higher share of votes for the opposition party. Differently, Durante et al. (2019) demonstrate that the staggered diffusion on the Italian territory of the commercial television channels owned by Silvio Berlusconi implied that in the municipalities with longer exposure to these channels the political party that Berlusconi created afterwards obtained higher shares of votes, while Bursztyrn and Cantoni (2016) show that citizens from the former East Germany that were exposed to the West Germany television, as the TV signal

went through the iron curtain in some areas, subsequently modified their consumption patterns towards those goods that were more heavily advertised on Western television.

Other studies focused on the effects of television on awareness of women rights. For example, Jensen and Oster (2009) show that the diffusion of cable TV in rural India, mostly broadcasting representation of women from the urban areas, increased the awareness of women's rights, as Indian women exposed to such broadcasting expressed in subsequent surveys less tolerance towards domestic violence against women, and a higher preference for women autonomy. In addition, Jensen and Oster (2009) report as a further effect a decrease in fertility. Focusing on the USA, Howard-Williams and Katz (2013) advance the hypothesis that the development of the feminist movement in the sixties was triggered, among other factors, by the diffusion of television. Finally, Mai (2017) highlights that even migration decisions can be influenced by the television, describing the case of migration flows from Albania towards Italy. The collapse of the authoritarian Albanian regime in 2001 pushed a large number of Albanians towards Italy, not only for the geographical proximity, but also because access to Italian television broadcasting conveyed an image of Italy as an opulent and attractive country.

To the best of our knowledge, however, this is the first study that proposes the hypothesis that the introduction of a national TV broadcasting system favored the ratification of treaties on human rights by the governments of the countries in which the system was introduced. A notable exception is Simmons (2009, pp. 237-38) who mentions the media as a factor that pressed the Japanese government to ratify the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) without, however, utilizing the media in the construction of an instrumental variable. As mentioned in the Introduction, we conjecture that television might have contributed to the spread of awareness of human rights-related aspects, such as of lifestyles characterized by the liberties that human rights imply or of the promotion or violation of human rights. As pointed out by Della Vigna and La Ferrara (2015, p. 34), in fact: "[e]xposure to the media often outlines role models and portrays societies that are particularly different from local behavior. This difference implies that the potential for behavior change is larger." By enabling mass communication and reaching audiences on a scale previously unimaginable, broadcasting became a powerful tool for disseminating information, shaping public opinion, and mobilizing support for reform movements (Couldry, 2012).

By considering the effect of the media, the present study adds one possible factor to those so far considered in the explanation of why countries ratify human rights treaties, in particular by Cole (2005), and Wotipka and Tsutsui (2008). These two studies find similar results. In particular, by framing the adoption process in an event study framework, Wotipka and Tsutsui (2008) find that the ratification is significantly associated with some variables characterizing the economic and political conditions of a country. In particular, per-capita GDP and the previous disrespect for human rights respectively have a positive and negative effect on the rate of treaty ratification. In addition, variables reflecting the international context seem to matter, such as the number of adopters in the world or in the region of the country, but see Boockmann (2001) who, in an event study of ratification of ILO conventions, does not find a “pressure” effect from the other countries that ratified before.

The “political pressure” argument suggests that the more a country aims to be considered part of the international community, the higher the propensity to subscribe to the legal principles included in the United Nations treaties. In fact, it should not be forgotten that the process of ratification of human rights treaties was part of a broader process, especially for developing countries, of transitioning towards democracy and becoming part of the international community, as this also implied to be a potential beneficiary of foreign private investment, aid, and capital transfers (Easterly, 2002). We will take into account the “political pressure” argument in our empirical analysis, but here we remark that none of the works mentioned considered a possible effect of the media on the propensity to ratify human rights and other international treaties. In the next section we describe the historical and political context in which the International Human Rights Law was introduced.

3 The Historical Background of International Human Rights Law

The aftermath of the Second World War left the Northern hemisphere divided into two ideologically opposed blocs, while the South dealt with a difficult post-colonial transition. In this scenario, the newly founded United Nations faced the task of establishing an international peacekeeping framework. The International Human Rights Law, as it is known today, was

introduced in this context.

Specifically, the founding document of the United Nations is the Charter, signed in San Francisco on 26 June 1945. The UN Charter is a treaty of international law, and UN Member States are bound by it. The Charter codifies the most important principles of international relations, from sovereign equality of States to the prohibition of the use of force in international relations.

The UN Charter states in Article 1, par. 3, that one of the purposes of the organization is: “to achieve international cooperation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion.” (UN Charter, 1945). The Charter did not include human rights norms binding for all the member states of the UN, but a list of programmatic norms to be followed in the context of the international community.

However, the text of Article 55 somehow predicts the provisions of the two Covenants of 1966, and despite the vagueness of the articles, the legal framework adopted in the 1945 Charter traced the path for the internalization of the human rights concept, and by the ratification of the Charter the States accepted to include in their own legal system the concept that there are some fundamental rights to be endorsed, strengthened and protected by the member State jurisdictions (Buergenthal, 2006).

This passage is crucial to understand the pathway that goes from the foundation of the United Nations to the development of the two Covenants on Human Rights of 1966. A part of the literature discusses the criticism that surrounded the United Nations’ actions (Luard, 1979). In particular, some authors expressed skepticism about the enthusiasm for the adhesion of several countries to the UN Charter, referring in particular to the developing countries during the 50s and 60s. For example, Salton (2023) claims that, beyond the opportunity represented by the accession of these countries to the treaties and therefore to the national community, in reality for most of the recently independent countries (i.e. those who went through the decolonization process), the choice was forced in order not to be excluded from aid and support by the international community.

The Human Rights framework developed by the United Nations consists of two different

channels. The first includes general law principles and institutional mechanisms, used by the different UN institutions to promote and protect the principles listed in the Charts. The second one consists of 18 human rights treaties drafted within the UN that codify much of the international human rights law in existence today. In some cases additional protocols mechanisms are established to monitor the compliance by the parties to the obligations imposed by these treaties. To exert a tangible effect, the ratification of a treaty by a State must imply taking effective actions to fulfill the obligations featured in the treaty. This is the case for the treaties on human rights that we consider in this article, as we briefly explain in the next section.

International treaties are binding agreements between sovereign states or international organizations, and are stipulated between contracting parties, the States, through their representatives. The rules foreseen within the treaties are not directly applicable to the countries that sign them but must be ratified by the countries that have signed them by (the usually) parliamentary procedures to become of the legal system.

While international law lacks a centralized enforcement authority like domestic legal systems, treaties may include mechanisms for monitoring compliance and resolving disputes between parties. The enforcement mechanisms can range from diplomatic means to international arbitration or adjudication by international courts and tribunals. Additionally, non-compliance with treaty obligations may lead to diplomatic repercussions, loss of credibility, or economic sanctions imposed by other states. Overall, the binding nature of international treaties is derived from the voluntary consent of States, reinforced by principles of international law, customary practices, and mechanisms for enforcement and dispute resolution.

There are nine core international human rights covenants issued under the supervision of the United Nations. Each of these covenants has established a committee of experts to monitor the implementation of the treaty provisions by its States parties. Some of the treaties are supplemented by optional protocols that establish a committee of experts evaluate the correct application of the covenants. This is the case of the two Covenants considered in this article, that we describe in the next section.

4 International Human Rights Treaties: the Two Covenants of 1966

The UN human rights treaties are the core of a universal international system for the promotion and protection of human rights (Sieghart, 1983). The first international agreements on Human Rights, promulgated by the UN and based on the Universal Declaration of the Human Rights (UDHR), are the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR), both approved in 1966 by the General Assembly in New York.

The ICCPR was drafted to follow what was a mere statement of intent, namely the content of the UDHR. In particular, the ICCPR defines, promotes and protects specific categories of human rights: (from Art. 6 to Art. 27) the rights to physical integrity, the liberty and security of person, procedural fairness and rights of the accused, equality before the law (with no discrimination based on sex, color, religion, political opinions, etc.), individual liberties (freedom of expression and of religion) and political rights (right to vote and to be elected). The first optional protocol (OP) of ICCPR was drafted at the same time as the convention and established the functioning of the mechanisms of denunciation of human rights violations enshrined in the Convention.

The second international convention on human rights is the International Covenant on Economic, Social and Cultural Rights (ICESCR), also issued in 1966. This treaty was in particular strongly advocated and promoted by the countries of the socialist block, and required an agreement on programmatic rights. Indeed, the treaty sets out the economic, social and cultural goals that each signatory country should achieve. The most eminent of the rights included are the labor rights, the right to social security, the right to family life, the right to health, the right to free education, the right to participation in cultural life and the right to have an adequate standard of living.

From this brief presentation, it emerges that in countries which ratify the treaties and effectively implement the legislative changes that insure the promotion and respect for human rights, the opportunities granted to all citizens should expand, by including the possibility to actively participate to the political process, to be equal before the law, to access education

and health systems. We consider this as an improvement in the institutional quality of a country, consisting in removing the barriers that may prevent an individual from expressing his/her economic potential and, as such, as a force pushing inequality to the level predicted by differences in individual abilities, in the same spirit of the insight proposed by Chong and Gradstein (2007). In the next section we introduce a quantitative assessment of the effect of the ratification of the ICCPR and ICESCR, and of the OP for ICCPR, on inequality.¹

5 Data

We estimate the effect of the ratification of ICCPR, ICESCR, and OP on income inequality by estimating panel data regressions for 108 countries in the period 1960-2015. The main variable to measure inequality is the Gini index of household disposable income from the SWIID database (Solt, 2020). We choose this as our preferred index of inequality as household disposable income reflects the policies implemented by a country, that we consider as proxies for the implementation of the human rights policies. The ratification of the human rights treaties is considered from the year a country ratified the treaty. In the econometric analysis we will consider covariates identified in the literature as key determinants of inequality (Furceri and Ostry, 2019).

In particular, we will consider per-capita GDP and its squared value, to take into account the overall effect on inequality of economic development, along the lines suggested by Kuznets (1955). According to Kuznets (1955), the relationship between inequality and per-capita GDP should be expected to be hump-shaped: increasing at early stages of economic development and decreasing at later stages. In addition, we select seven covariates, that should capture a broad spectrum of possible effects on inequality. Namely, we will consider: i) an indicator of the type of political regime which, according to the Polity IV database (Marshall and Elzinga-Marshall, 2017), takes on a value of -10 if a country is an autocracy, and a value of 10 if the country is a fully democratic State. From the intuition of Chong and Gradstein (2007), worse political regimes are expected to be associated to higher inequality as they might imply a bias in favor of richer groups in influencing the political reforms in their own interest, exacerbating inequality;

¹The optional protocol for the ICESCR was introduced in 2008, and therefore is excluded from our main empirical analysis for the short time period in which it could have exerted its effects.

ii) a literacy and iii) a health index (life expectancy at birth), as proxies for human capital. Literacy and health levels can be, on the one hand, further measures of economic development besides GDP and, on the other hand, higher levels of human capital can be expected to be associated to less inequality, as long as public expenditure on human capital and health favors poorer individuals (Furceri and Ostry, 2019, p. 499); iv) a measure of trade openness, i.e. the sum of exports and imports as a share of GDP. Trade openness has been pointed out as a possible factor increasing inequality in developed countries, in particular because of the imports of goods from low-wage could lower the demand for unskilled labour and therefore the wages of low-skilled workers (Wood, 1995); v) a measure of the share of industrial value-added, and vi) of financial development, to take into account the structure of the economy; vii) a dummy variable indicating if the country is an oil producer Ross and Mahdavi (2015). Finally, we will consider an instrumental variable based on the introduction in the country of national television broadcasting. As a measure of the effect of national broadcasting we will build a count variable that takes on the value of 1 in the first year, and increasing integer values (2, 3, ...) each subsequent year (see below for more details on this choice).

Table 1 contains the list of the variables and details on the sources.

Variable	Description	Source
Dependent Variable		
Income inequality	Gini index of inequality	Solt (2020)
Independent Variables on Treaty Ratification		
ICCPR ratification	1 if country ratified the International Covenant Civic and Political Rights	United Nations (2015)
ICESCR ratification	1 if country ratified the International Covenant on Economic, Social, and Cultural Rights	
ICCPR Opt. Prot ratification	1 if country ratified the International Covenant on Economic, Social, and Cultural Rights	
Control Variables		
GDP/Cap. (ln)	Gross domestic product per capita, constant 2000 U.S. dollars, logged	World Bank (2020)
Production of crude oil (in metric tons) (oil)	Production of crude oil	QOG-Standard Dataset 2022
Polity IV (pol.)	Individual Country Regime Trends, -10 Autocracy to +10 Full Democracy	Polity IV Project Report (2017)
Literacy Index (lit) (%)	Adult total (% of people ages 15 and above)	
Health (hlt)	Life expectancy at birth World Bank (2020)	
Trade openness (trd) (% GDP)	Sum of goods and services exports and imports	
Industrial value-added (ind) (% GDP)	Net output of a sector after adding up all the outputs and subtracting the intermediate inputs	
Financial system deposits fin (% GDP)	Amount of deposit money banks and other financial institutions	
Instrumental Variable		
Broadcast Transmission	0 before the introduction of the TV broadcasting, 1,2,3.. afterwards	Manually retrieved from the web https://en.wikipedia.org/wiki/Timeline_of_the_introduction_of_television_in_countries

Table 1: Variables' description.

Figures 1 and 2 offer a visual representation of the dynamics of our two main variables of interest: inequality, expressed by the Gini index, and the ratification of HR treaties, represented by the cumulative number of countries that ratified the two HR treaties (ICCPR and ICESCR) and OP.

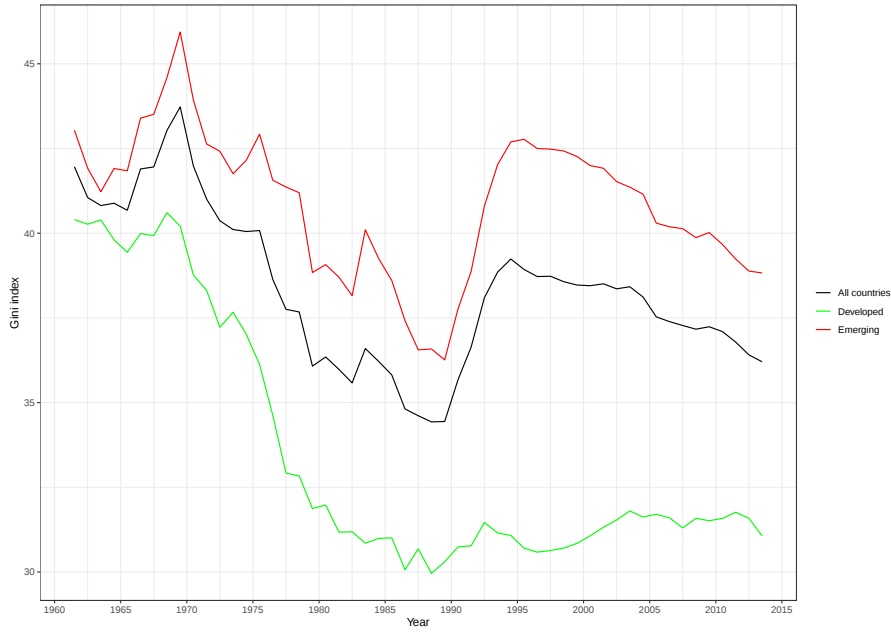


Figure 1: Gini index 1960 - 2015 (Solt, 2020). This figure displays the Gini index calculated as a 4-year moving average for all countries in the sample (black line), Emerging Countries (red line), Developed Countries (green line). the classification between emerging and developed countries is from International Monetary Fund (2023).

Figure 1 highlights an initial global trend of decreasing inequality followed by a steep increase at the end of the eighties, which eventually turns into another declining pattern from the nineties.² The partition of the sample between Emerging and Developed countries, however, highlights that the two subsamples displayed a different dynamics. The subsample of emerging countries displayed a much higher inequality along the period and is responsible for the increasing trend at the end of the eighties because it includes the countries from the former Soviet block which, by transitioning towards more market-based frameworks, experienced a sharp increase in inequality that is reflected in the dynamics of the whole sample. The developed economies, on the contrary, experienced a sharp decline of inequality until the end of the eighties with a subsequent increase until the first decades of the 21th century. Research on the increase in inequality in the last decades in the developed countries pointed to skill-biased technological change and globalization, which implied an increase in the spread between top incomes and those at the lowest levels of the income distribution (see, e.g., Katz and Murphy,

²See Milanovic (2024) for a comparison of recent and long-run inequality trends.

1992; Wood, 1995).

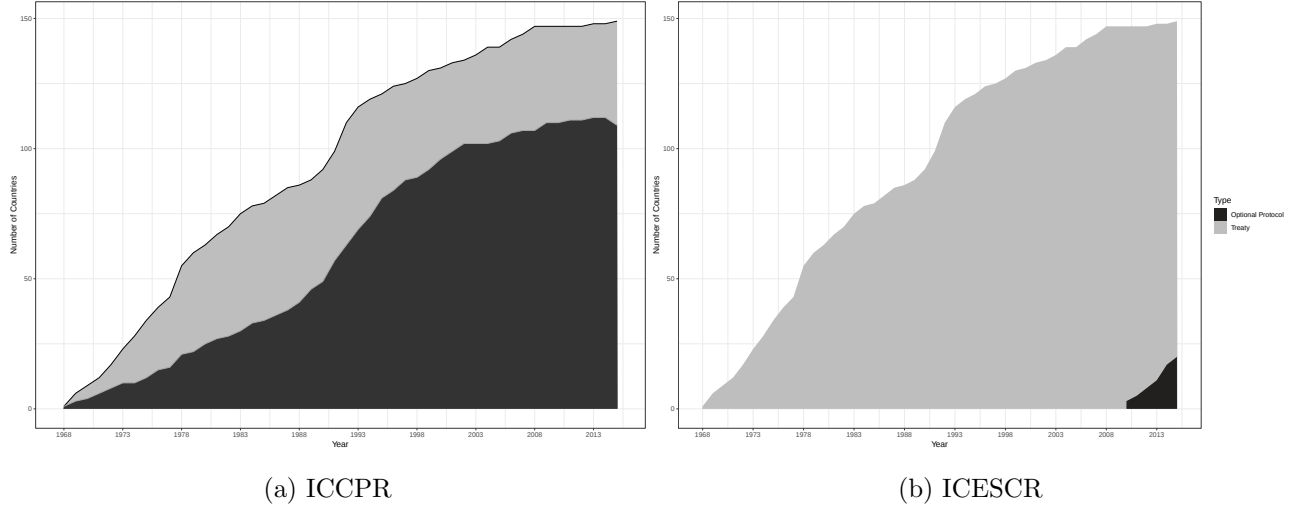


Figure 2: Ratification of the International covenants on civil and political rights and Economic and cultural rights and its optional protocol. This figure displays the progressive number of countries that ratified the ICCPR (Panel A) and the ICESCR (Panel B) and OP for each treaty by the in the period 1968-2015

Figure 2 shows that the number of countries ratifying the two treaties increased over time. A particular impulse was given by the transition of countries from the Eastern block away from socialism, that implied the choice of ratifying the treaties. The event after the fall of the Berlin wall in 1989 is clearly visible in panel (a) of Figure 2, with an increase in the slope of the line for both the main treaty and the OP.

As for the ratification of the optional protocols, we notice that in the case of ICCPR, the ratification of the optional protocol (signed in 1966) follows the one of the main treaty, with similar changes of slope, but there is no convergence between the number of countries ratifying the main treaty and those ratifying the OP. The difference has some ups and downs, but remains sizable over time, suggesting that it is worth investigating the effect of both ratifications. As noted, in the case of ICESCR the introduction of the optional protocol took place in 2008 and is much posterior to the treaty, and makes impracticable an assessment of its effect on inequality.

In the next section we describe the econometric approach we utilize to assess the effect of treaty ratification on inequality and present the results.

6 Econometric Analysis

We estimate the effect of the ratification of human rights treaties on inequality by a panel fixed-effects model whose benchmark equation has the following form, where i indexes countries and t indexes years,

$$Ineq_{i,t} = \alpha + \beta Ratif_{j,i,t} + \Theta \mathbf{X}_{i,t} + \delta_i + \tau_t + \epsilon_{i,t}. \quad (1)$$

The variable $Ineq_{i,t}$ indicates the Gini index of disposable income, bounded in $[0, 100]$; $Ratif_{j,i,t}$ is a dummy equal to one from the year of ratification of treaty or protocol j ($j = \text{ICCPR, ICESCR, OP}$) onward and zero before. Its coefficient β is our parameter of interest. $\mathbf{X}_{i,t}$ collects control variables, δ_i a country fixed effect, and τ_t a year fixed effect. Standard errors are clustered by country throughout.

Estimation of Eq. (1) poses a problem of endogeneity due to reverse causation, since the relationship between inequality and institutional change is plausibly bi-directional (Chong and Gradstein, 2007). We therefore implement a two-stage least squares estimator, using the introduction of national television broadcasting as the instrumental variable for treaty ratification. The first-stage equation, therefore, is:

$$Ratif_{i,t} = \alpha + \gamma BROADCAST_{i,t} + \Theta \mathbf{X}_{i,t} + \delta_i + \tau_t + \eta_{i,t}, \quad (2)$$

where $BROADCAST_{i,t}$ counts the cumulated number of years since the introduction of national broadcasting, a proxy for the gradual territorial diffusion of the broadcasting system.³

6.1 The Specification Space and Identification Designs

A recurrent concern in regression analysis is that a single “preferred” set of controls is often reported as if it were the only natural choice, so that the reported estimate is conditional on an unreported model-selection process. To avoid such problems in this article, following Sala-i Martin (1997), we estimate for each treaty and each identification design all $2^7 = 128$ combinations of the seven candidate covariates mentioned above: the political-regime score based on the Polity IV database (*pol*), the gross adult literacy rate (*lit*), life expectancy at birth (*hlt*), trade openness (*trd*), industry value added (*ind*), financial depth (*fin*), and the

³All analyses use the `xtreg` and `xtivreg2` packages in STATATM (Schaffer, 2020).

oil production dummy (*oil*). Every specification also contains $\log \text{GDP}$, $\log \text{GDP}^2$ following the Kuznets hypothesis (Kuznets, 1955), country and year fixed effect and clustered standard errors.

The same 128 covariate subsets are then estimated under three instrument sets, denoted as three designs, as follows. Design I uses *BROADCAST* as the single excluded instrument and represents our main hypothesis. Two other designs are intended to be robustness tests that challenge our choice of the instrumental variable. Specifically: Design II adds a second excluded instrument, the number of countries in the same macro-region that had already ratified by year t (Simmons, 2009; Wotipka and Tsutsui, 2008), which over-identifies the system and makes the Hansen J test available. Design III drops *BROADCAST* as an instrument and uses the regional prior-ratification count as the sole excluded instrument, returning to exact identification. A fixed-effects OLS estimate of Eq. (1) with $\log \text{GDP}$ and $\log \text{GDP}^2$ only provides the Kuznets baseline against which the instrumented magnitudes are read.

Although the tests differ in the number of excluded instruments, they are governed by one retention rule with design-specific thresholds. A specification is retained if and only if it satisfies four conditions: (i) the cluster-robust first stage is not fundamentally weak, $\text{KP-}F > 5$, which is the (Stock and Yogo, 2005) 15% LIML critical value; (ii) the homoskedastic weak-identification statistic exceeds the Stock-Yogo 10% maximal-bias critical value, $\text{CD-}F > c_{SY}$; (iii) the Anderson-Rubin test, which is valid irrespective of instrument strength (Andrews et al., 2019), rejects the null of no structural effect at $p < 0.05$; and (iv) where the model is overidentified, the Hansen J test does not reject instrument exogeneity at $p > 0.05$. Retained specifications are then partitioned into *strongly identified* ($\text{KP-}F \geq 10$) and *borderline* ($5 < \text{KP-}F < 10$); specifications failing any of (i)-(iv) are classified as *not identified* and excluded from the reported tables.

In our specification, the endogenous regressor is a 0/1 dummy while the instrument is a cumulative count. The 2SLS estimator is consistent whenever the instrument is relevant and exogenous, regardless of the functional form of the endogenous variable (Angrist and Pischke, 2009, Ch. 5), so what matters is the magnitude and significance of the first-stage coefficient, not its sign. In our specific case, the first-stage coefficient on *BROADCAST* is negative in all specifications, but this is a mechanical consequence of within-country demeaning of a

cumulative instrument, while the reduced-form relation with inequality is positive, yielding a negative second-stage coefficient, as our hypothesis predicts.

Where the KP- F test is borderline, inference rests on two weak-instrument-robust arguments: the Cragg–Donald statistic, which clears the Stock–Yogo 10% LIML bound by a wide margin in every retained specification, and the Anderson–Rubin test, which rejects the null of no effect at 5% in every retained specification. This is reassuring about the effect of the treaty ratification on inequality.

6.2 Main results

Table 2 reports the size of the surviving set. ICCPR is the only treaty for which covariate combinations survive all three designs, as it implies specifications strongly identified (s) or borderline (b) under the three designs. Specifically, 14 of the 128 subsets do. For the Optional Protocol none survives all three, since broadcasting is a weak first-stage predictor of OP ratification, but 7 subsets are retained jointly by Designs II and III, the two that consider regional diffusion of ratification as an instrument. For ICESCR the mirror image holds: the regional instrument alone yields no surviving specification, while 15 subsets are retained jointly by Designs I and II. We therefore report, for each treaty, the largest intersection it attains, stating which designs it spans. The Kuznets baselines (Column 1,5,8), which carry no candidate covariates, are -1.158 ($p = 0.048$) for ICCPR, -1.563 ($p = 0.003$) for the Optional Protocol and -0.710 ($p = 0.295$) for ICESCR.

Treaty	Design I (s/b)	Design II (s/b)	Design III (s/b)	All three	Reported set
ICCPR	34 / 60	23 / 43	0 / 15	14	I $\cap$ II $\cap$ III (14)
OPICCPR	0 / 2	0 / 7	1 / 50	0	II $\cap$ III (7)
ICESCR	1 / 85	0 / 15	0 / 0	0	I $\cap$ II (15)

Notes: s : strongly identified (KP- $F \geq 10$, CD- F above the Stock–Yogo 10% LIML bound, AR $p < 0.05$);

b : borderline ($5 < \text{KP-}F < 10$, same CD and AR conditions). Out of 128 covariate subsets per treaty per design.

Table 2: Size of the surviving specification set, by treaty and identification design.

With respect our main hypothesis on the role of broadcasting, notice that Table 2 suggests that it is corroborated remarkably more for the ratification of ICCPR. Although with ICCPR

we find support to the three designs, in Design I the criteria are satisfied in the strong or in the “borderline” sense 94 times out of 128 specifications, suggesting that this design is the more appropriate for this treaty.

The results for the Design I, therefore, suggest that the ratification of the ICCPR under the hypothesis that the introduction of television broadcasting was a driving force for its ratification, is strongly consistent with our conjecture. The same cannot be said for the ratification of ICESCR and OP. The evidence for ratification of ICESCR is weaker, while the evidence for the ratification of OP suggests is definitely the weakest.

To highlight the relevant specifications, and the magnitude of the coefficients, Table 3 takes the top-ranked surviving combination of each treaty under every design in which that treaty survives, holding the covariate set identical across columns differing only in the instrument set.

	ICCPR				OPICCPR			ICESCR		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	OLS	(I)	(II)	(III)	OLS	(II)	(III)	OLS	(I)	(II)
	Kuznets	2SLS	2SLS	2SLS	Kuznets	2SLS	2SLS	Kuznets	2SLS	2SLS
ICCPR	-1.158*	-7.888**	-9.269***	-10.174*						
	(0.578)	(2.949)	(2.331)	(4.661)						
OPICCPR					-1.563**	-8.262*	-7.714*			
					(0.523)	(3.718)	(3.349)			
ICESCR								-0.710	-9.510*	-10.624**
								(0.675)	(4.693)	(3.752)
log GDP	6.075*	21.19**	23.53***	25.06**	5.049 [†]	4.694	4.828	5.907*	23.01**	24.82**
	(2.892)	(6.09)	(5.892)	(9.261)	(2.73)	(4.479)	(4.327)	(2.898)	(8.345)	(7.763)
log GDP ²	-0.286 [†]	-1.204**	-1.35***	-1.445*	-0.229	-0.2154	-0.2224	-0.273 [†]	-1.311*	-1.421**
	(0.164)	(0.3754)	(0.3523)	(0.5618)	(0.153)	(0.2487)	(0.2397)	(0.163)	(0.5176)	(0.4673)
Health (life exp.)						-0.02348	-0.01937		0.05775	0.0598
						(0.09221)	(0.08914)		(0.1114)	(0.1188)
Literacy		-0.0007591	0.0007974	0.001818		-0.0002049	-0.001562		-0.0004796	0.0007228
		(0.01679)	(0.01713)	(0.01833)		(0.023)	(0.02216)		(0.01759)	(0.01833)
Trade openness									0.005213	0.005301
									(0.01355)	(0.01451)
Ind. val. added		-0.05891	-0.05639	-0.05474					-0.04329	-0.04052
		(0.04074)	(0.04549)	(0.04978)					(0.05834)	(0.06201)
Oil production		7.43e-06	6.53e-06	5.94e-06		-8.59e-06	in-7.13e-06		2.39e-05	2.53e-05
		(1.7e-05)	(1.64e-05)	(1.63e-05)		(1.67e-05)	(1.63e-05)		(2.77e-05)	(3e-05)
Instrument(s)	–	broad.	broad.+reg.	reg.	–	broad.+reg.	reg.	–	broad.	broad.+reg.
KP- F	–	13.56 ^s	10.61 ^s	5.37 ^b	–	5.09 ^b	10.14 ^s	–	10.03 ^s	5.82 ^b
CD- F	–	74.2	63.4	86.6	–	68.1	136.2	–	57.5	38.8
AR p	–	0.006	<0.001	<0.001	–	<0.001	<0.001	–	0.005	<0.001
N	3626	2332	2332	2332	3626	2732	2732	3626	2292	2292

Cluster-robust standard errors (by country) in parentheses. [†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

^s strongly identified ($KP-F \geq 10$); ^b borderline ($5 < KP-F < 10$). Country and year fixed effects in every column.

Each treaty block reports its top-ranked surviving covariate combination held *identical* across the IV designs, so the columns differ only in the instrument set.

Table 3: Main results: the best-ranked surviving specification for each treaty, estimated under every identification design in which that treaty survives.

For ICCPR the top-ranked surviving combination of covariates is literacy, industry value added and oil production. It is strongly identified under Design I ($\hat{\beta} = -7.888$, $p = 0.007$, $KP-F = 13.6$, $CD-F = 74.2$) and under Design II (-9.269 , $p < 0.001$, $KP-F = 10.6$, Hansen J $p = 0.704$), and borderline but still significant under Design III (-10.174 , $p = 0.029$, $KP-F = 5.4$, $CD-F = 86.6$). Across all 14 surviving combinations the point is always negative and it is bounded in $[-13.6, -7.9]$. The estimation sample is unchanged at $N = 2332$ across the three columns, so the movement in $\hat{\beta}$ reflects the identifying variation rather than a change in sample. The seven- to nine-fold amplification relative to the OLS baseline of -1.158 is consistent with downward OLS bias from reverse causality, since high-inequality countries plausibly ratify later.

For the Optional Protocol the surviving evidence rests on regional diffusion. The top-ranked combination, health, literacy and oil, gives -8.262 ($p = 0.026$) under Design II and -7.714 ($p = 0.021$) under Design III, where it is the only strongly identified OP specification in the exercise ($KP-F = 10.1$, $CD-F = 136.2$, AR $p < 0.001$); Hansen J does not reject ($p = 0.257$). The first-stage coefficient of *BROADCAST* on OP ratification is indistinguishable from zero ($\hat{\gamma} = 0.0001$, $t = 0.01$), which accounts for the absence of surviving combinations under Design I: the Optional Protocol was ratified later and only by a subset of ICCPR parties, so the diffusion of television carries little information about its timing, whereas regional peer adoption does.

For ICESCR the pattern reverses. The top-ranked surviving combination, health, literacy, trade openness, industry value added and oil, yields -9.510 ($p = 0.043$) under Design I, where it is the single strongly identified ICESCR specification ($KP-F = 10.0$, $CD-F = 57.5$), and -10.624 ($p = 0.005$, Hansen J $p = 0.795$) under Design II. The regional instrument alone identifies nothing for this treaty, with 0 of 128 subsets clearing the filter. The ICESCR OLS baseline is not significant (-0.710 , $p = 0.295$), so within-country variation alone does not detect the effect, in line with Cole (2015), who likewise required an instrumental variable strategy.

In all specifications log GDP enters positively and log GDP² negatively, consistent with an inverted-U Kuznets relationship. The candidate covariates are individually insignificant throughout and leave the treaty coefficient nearly unchanged, so the estimated effect is a property of the identifying variation rather than of a particular control choice.⁴

⁴Appendix A provides the details on the selected specification sets.

6.3 Robustness: cumulated treaty count

So far we have considered separately the effects of the ratifications. As a further robustness test, in this section we replace the three dummies with their sum, by counting the number of ratifications a country has made by year t , such that for every country-year observation we have a value in $[0, 3]$, and estimate the effect of the cumulative ratification count on inequality, measuring the depth of a country’s cumulative legal commitment, instrumented by *BROADCAST*. The idea in this case is that the joint ratification of the treaties and of the optional protocol might have an effect on inequality as the cumulative number of ratification proxies for a stronger commitment by a state.

Table 4 shows the result and highlights that this is the most cleanly identified exercise in our work: of the 128 subsets, 37 satisfy the joint filter and 31 are strongly identified. Judged from the IV side alone, all 128 subsets pass the diagnostic filter and 91 are strongly identified. Columns (2)–(3) report the richest covariate set — political regime, health, literacy, trade openness and oil production — that survives both the fixed-effects and the IV filter with an identical set of controls, so that the two estimates of the treaty coefficient are directly comparable. The Kuznets OLS implies a 0.60-point Gini reduction per additional ratification ($p = 0.014$); under the matched control set the fixed-effects estimate is -0.504 ($p = 0.046$) and the corresponding 2SLS estimate -3.803 ($p = 0.041$, $KP-F = 14.2$, $CD-F = 33.8$, $AR\ p = 0.004$). The cumulative design gains identification strength because the instrument predicts the timing of any of three ratifications, generating more first-stage variation than any single decision.

Because the cumulative exercise involves a single treaty variable and a single instrument, the cross-design intersection has no counterpart here. The natural analogue is the intersection of the two estimators: we retain the covariate combinations in which the fixed-effects and the 2SLS coefficient on *CUMUTREATY* are both significant at 10%, and rank them by the same identification criteria. Table 9 in Appendix A lists all 37 surviving specifications.

6.4 Summary of main results

Across every estimated specification, 128 covariate subsets per treaty per design, the sign of the second-stage coefficient is uniformly negative. Imposing survival across identification designs,

	Cumulated treaty count		
	(1)	(2)	(3)
	Kuznets	Full ctrl. FE	Full ctrl. IV
log GDP	5.813*	9.359*	9.787*
	(2.809)	(4.030)	(4.632)
log GDP ²	-0.273 [†]	-0.486*	-0.503 [†]
	(0.158)	(0.215)	(0.261)
Treaties (count)	-0.599*	-0.504*	-3.803*
	(0.241)	(0.250)	(1.861)
Polity2		-0.083 [†]	0.084
		(0.044)	(0.125)
Health		0.003	-0.005
		(0.076)	(0.103)
Literacy		-0.018	-0.007
		(0.018)	(0.018)
Trade openness		0.0004	0.002
		(0.009)	(0.014)
Oil prod.		0.0000127	0.00000804
		(0.0000170)	(0.0000194)
N	3626	2637	2636
Instrument	—	—	broadcast
KP-F (cluster)	—	—	14.2
Surv. (sig.)/128	—	—	37 (31 ^s)

Standard errors in parentheses. [†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4: Cumulated treaty count, matched FE vs. IV covariates.

rather than reporting a single preferred specification, yields a sharp and asymmetric picture.

ICCPR is robust in the strongest sense available here: 14 covariate combinations are strongly identified or borderline under broadcasting, under broadcasting combined with regional diffusion, and under regional diffusion alone, with estimates confined to $[-13.6, -7.9]$. The Optional Protocol is identified only by regional diffusion (7 surviving combinations, estimates in $[-9.2, -6.8]$), because broadcasting has a null first stage for it.

ICESCR is identified only where broadcasting is present (15 surviving combinations, estimates in $[-15.7, -9.5]$), and not at all by regional diffusion alone. The two treaties thus fail under complementary designs: neither failure is a property of the outcome variable or of the sample, but of which instrument predicts which ratification decision. The 2SLS estimates exceed the OLS ones by a factor of roughly five to ten, consistent with downward OLS bias from reverse causality, and Anderson-Rubin inference rejects the null in every retained specification. The evidence supports a causal interpretation of the negative effect of ratification on income inequality, in a strong sense, for the ratification of the ICCPR, under the hypothesis that the diffusion of national broadcasting was a key factor for its ratification. Evidence is weaker for the Optional Protocol and of the ICESCR each. However, when the two treaties and the optional protocol are considered by means of a measures of cumulative commitment, suggesting that the effect of the three, is approximately additive, we do find a strong effect: ratification of human rights treaties reduces inequality.

7 Concluding Remarks

In this article we propose an empirical estimation of the effect of the ratification of human rights treaties on inequality in a large sample of countries. Indeed, for more than 50 years, the international community embraced and promoted ideals like freedom, peace, social equality, democracy, and development. All these ideals are perfectly combined through the “syntax” of human rights.

Specifically, we considered both the ratification of the two main treaties on HR (ICCPR and ICESCR) and of the optional protocol of ICCPR, that was promoted on the same year of the treaty. In addition, we proposed a novel IV approach, in which we considered as an instrumental variable for the ratification of a treaty, a variable indicating the introduction of television

broadcasting in a country. Overall, these results indicate that once endogeneity is accounted for, treaty ratification has a sizable and causal inequality-reducing effect, in particular for the ratification of ICCPR. The effect of the ratification of ICESCR and of the optional protocol for the ICCPR seem to matter, and to be consistent with our hypothesis on broadcasting, only when their effect is accounted for as an additive component of a joint measure of ratification.

Further research could address some of the limitations of the present analysis, like the measurement of the deeper diffusion of broadcasting or the consideration of the diffusion of other media that might have impacted on the country propensity to ratify human rights treaties, or the use of wealth-based inequality measures (Steenbrink and Skali, 2026).

8 Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

The authors used the Claude AI tool to manage the large number of models runs and prepare the latex tables. The authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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A The surviving specification sets

In this section we present the surviving specification sets for each treaty. Table 5 lists the 14 ICCPR combinations that clear the filter in all three designs. Two combinations (*lit*, *ind*, *oil* and *lit*, *ind*) are strongly identified in two designs; the remaining twelve are borderline throughout but clear CD-*F* by a wide margin (35.5 to 127.7) and reject Anderson–Rubin at 5% everywhere. Industry value added appears in 11 of the 14 survivors, health and oil production in 6 each. The political-regime score appears in none: adding *pol* collapses the cluster-robust first stage, and every combination containing it fails at least one design. The baseline with no candidate covariates also survives, at -8.612 , -10.879 and -11.463 under Designs I, II and III respectively. The results show that the ICCPR effect is robust to a wide range of covariate choices, and that the identification is not driven by a single combination of covariates. Another surprising result is that the absence of political-regime controls does not change the estimated effect, suggesting that the ICCPR effect is not mediated by political regime. The ratification itself has a direct effect on inequality, rather than an indirect effect through political regime.

#	Covariates	(I) Broadcasting				(II) Broad.+regional				(III) Regional only				N
		$\hat{\beta}$ (se)	KP- F	CD- F	AR p	$\hat{\beta}$ (se)	KP- F	CD- F	AR p	$\hat{\beta}$ (se)	KP- F	CD- F	AR p	N
1	lit, ind, oil	-7.888** (2.949)	13.56 [*]	74.2	0.006	-9.269*** (2.331)	10.61 [*]	63.4	<0.001	-10.174* (4.661)	5.37 ^b	86.6	<0.001	2332
2	lit, ind	-8.201** (2.898)	14.14 [*]	76.1	0.004	-9.136*** (2.319)	10.68 [*]	63.3	<0.001	-9.849* (4.656)	5.23 ^b	83.6	<0.001	2342
3	ind, oil	-8.749* (4.235)	7.32 ^b	55.4	0.003	-10.735** (3.628)	7.68 ^b	71.3	<0.001	-11.355* (5.104)	7.76 ^b	114.3	<0.001	2952
4	hlt, ind, oil	-8.813* (4.336)	9.53 ^b	52.9	0.004	-11.199** (3.870)	7.98 ^b	60.3	<0.001	-12.083* (5.832)	6.77 ^b	91.6	<0.001	2952
5	hlt, trd, ind	-9.858* (4.889)	7.97 ^b	48.2	0.004	-8.979* (3.956)	7.89 ^b	62.9	<0.001	-8.607 [†] (4.990)	7.78 ^b	101.9	<0.001	2983
6	trd, ind	-9.667* (4.814)	6.95 ^b	50.6	0.004	-8.712* (3.804)	7.39 ^b	67.6	<0.001	-8.325 [†] (4.730)	7.80 ^b	110.8	<0.001	2983
7	trd, ind, oil	-9.079* (4.175)	8.40 ^b	61.1	0.002	-9.853** (3.612)	7.94 ^b	68.0	<0.001	-10.210 [†] (5.326)	6.57 ^b	103.2	<0.001	2906
8	hlt, trd, ind, oil	-9.240* (4.177)	9.97 ^b	58.8	0.002	-10.313** (3.735)	8.44 ^b	62.2	<0.001	-10.841 [†] (5.766)	6.29 ^b	91.7	<0.001	2906
9	ind	-9.244 [†] (4.875)	6.08 ^b	46.1	0.007	-9.200* (3.619)	7.35 ^b	74.0	<0.001	-9.188* (4.405)	9.25 ^b	127.7	<0.001	3032
10	baseline	-8.612 [†] (4.778)	5.62 ^b	37.9	0.008	-10.879* (4.308)	6.71 ^b	52.0	<0.001	-11.463* (5.825)	6.56 ^b	86.2	<0.001	3626
11	oil	-8.437 [†] (4.459)	6.68 ^b	39.3	0.007	-12.616** (4.730)	6.61 ^b	48.6	<0.001	-13.598* (6.786)	5.06 ^b	77.9	<0.001	3481
12	hlt, ind	-9.329 [†] (5.048)	7.58 ^b	43.2	0.009	-9.412* (3.883)	7.60 ^b	64.0	<0.001	-9.438 [†] (4.840)	8.62 ^b	107.5	<0.001	3032
13	hlt	-8.815 [†] (4.819)	7.37 ^b	35.5	0.009	-11.447* (4.566)	7.80 ^b	46.0	<0.001	-12.172 [†] (6.391)	6.38 ^b	74.5	<0.001	3626
14	hlt, ind, fin	-10.072 [†] (5.851)	5.82 ^b	36.0	0.014	-10.800* (5.031)	5.12 ^b	43.2	0.002	-11.117 (6.915)	5.28 ^b	65.9	0.002	2784

Cluster-robust standard errors (by country) in parentheses. [†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

* strongly identified (KP- $F \geq 10$); ^b borderline ($5 < \text{KP-}F < 10$). All rows clear the Stock–Yogo 10% LIML bound on CD- F (16.38 with one excluded instrument, 8.68 with two) and reject Anderson–Rubin at 5% (Stock and Yogo, 2005).

Covariate codes: pol = Polity IV regime score; hlt = life expectancy at birth (WDI); lit = gross adult literacy rate (WDI); trd = trade openness, trade/GDP (WEO);

ind = industry value added, % of GDP (WDI); oil = oil production; fin = bank deposits over GDP. All specifications also include logGDP, logGDP², country and year fixed effects.

Rows ordered by (i) number of designs strongly identified, (ii) number significant at 5%, (iii) at 10%, (iv) worst-case KP- F , (v) mean second-stage p .

Table 5: ICCPR: the 14 covariate combinations that are strongly identified or borderline in all three identification designs.

Table 6 lists the 7 combinations retained for the Optional Protocol by Designs II and III. All seven contain either literacy or trade openness, five contain health, and the estimates are confined to $[-9.2, -6.8]$. Only *hlt*, *lit*, *oil* reaches strong identification, and only under Design III. Since no combination survives Design I, the OP result is identified by regional diffusion alone and is the weakest of the three.

#	Covariates	(II) Broad.+regional				(III) Regional only				<i>N</i>
		$\hat{\beta}$ (se)	KP- <i>F</i>	CD- <i>F</i>	AR <i>p</i>	$\hat{\beta}$ (se)	KP- <i>F</i>	CD- <i>F</i>	AR <i>p</i>	
1	hlt, lit, oil	-8.262* (3.718)	5.09 ^b	68.1	<0.001	-7.714* (3.349)	10.14*	136.2	<0.001	2732
2	hlt, lit, trd, oil	-8.351* (3.560)	5.68 ^b	67.8	<0.001	-7.683* (3.406)	9.77 ^b	133.6	<0.001	2647
3	hlt, lit, trd	-8.366* (3.749)	5.52 ^b	61.3	<0.001	-7.452* (3.579)	8.89 ^b	119.0	<0.001	2659
4	lit, trd, oil	-8.437* (3.741)	5.05 ^b	64.5	<0.001	-7.755* (3.530)	9.20 ^b	127.3	<0.001	2647
5	hlt, lit, trd, oil, fin	-8.170* (3.697)	5.32 ^b	66.4	<0.001	-6.951 [†] (3.731)	7.32 ^b	122.4	<0.001	2264
6	hlt, lit, trd, fin	-8.345* (3.878)	5.10 ^b	60.5	<0.001	-6.843 [†] (3.961)	6.55 ^b	108.3	<0.001	2275
7	trd	-9.229* (4.475)	5.09 ^b	64.9	<0.001	-8.716 [†] (4.466)	7.27 ^b	126.7	<0.001	3517

Cluster-robust standard errors (by country) in parentheses. [†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

* strongly identified (KP-*F* ≥ 10); ^b borderline ($5 < \text{KP-}F < 10$). All rows clear the Stock-Yogo 10% LIML bound on CD-*F* (16.38 with one excluded instrument, 8.68 with two) and reject Anderson-Rubin at 5% (Stock and Yogo, 2005).

Covariate codes: pol = Polity IV regime score; hlt = life expectancy at birth (WDI); lit = gross adult literacy rate (WDI); trd = trade openness, trade/GDP (WEO);

ind = industry value added, % of GDP (WDI); oil = oil production; fin = bank deposits over GDP. All specifications also include logGDP, logGDP², country and year fixed effects.

Rows ordered by (i) number of designs strongly identified, (ii) number significant at 5%, (iii) at 10%, (iv) worst-case KP-*F*, (v) mean second-stage *p*.

Table 6: Optional Protocol: the 7 covariate combinations retained by both Design II and Design III. No combination is retained by Design I.

Table 7 lists the 15 combinations retained for ICESCR by Designs I and II. Industry value added appears in 13 of them, health in 12 and literacy in 11. The estimates range over $[-15.7, -9.5]$, wider than for ICCPR, reflecting the weaker first stage. Hansen J never rejects in the over-identified column (p between 0.66 and 0.99 where computable). The single strongly identified specification is the first row.

#	Covariates	(I) Broadcasting				(II) Broad.+regional				N
		$\hat{\beta}$ (se)	KP- F	CD- F	AR p	$\hat{\beta}$ (se)	KP- F	CD- F	AR p	
1	hlt, lit, trd, ind, oil	-9.510* (4.694)	10.03 ^a	57.5	0.005	-10.624** (3.752)	5.82 ^b	38.8	<0.001	2292
2	hlt, lit, trd, ind	-10.415* (5.009)	9.48 ^b	53.0	0.003	-10.779** (3.901)	5.65 ^b	37.2	<0.001	2302
3	hlt, lit, ind	-10.644* (5.370)	7.96 ^b	43.7	0.004	-10.759** (4.074)	5.58 ^b	36.8	<0.001	2342
4	hlt, lit, trd, oil	-10.366* (5.088)	9.93 ^b	36.6	0.002	-12.920* (5.524)	5.27 ^b	22.1	<0.001	2647
5	hlt, lit, trd	-11.085* (5.405)	9.63 ^b	35.1	0.002	-12.500* (5.226)	5.10 ^b	21.5	<0.001	2659
6	hlt, ind, oil	-11.246 [†] (6.059)	7.64 ^b	35.2	0.004	-15.037* (6.597)	6.02 ^b	32.6	<0.001	2952
7	hlt, lit, ind, oil	-9.775 [†] (5.035)	8.40 ^b	47.0	0.006	-10.815** (3.876)	5.76 ^b	37.8	<0.001	2332
8	hlt, trd, ind, oil	-11.633 [†] (6.062)	8.26 ^b	40.7	0.002	-14.863* (6.597)	5.62 ^b	29.3	<0.001	2906
9	ind, oil	-11.410 [†] (6.246)	8.18 ^b	35.7	0.003	-15.693* (7.411)	5.55 ^b	33.3	<0.001	2952
10	hlt, lit, ind, oil, fin	-10.595 [†] (5.790)	6.93 ^b	41.7	0.006	-11.201** (4.230)	5.35 ^b	31.8	<0.001	2111
11	lit, ind, oil	-10.102 [†] (5.501)	9.28 ^b	48.5	0.006	-11.557* (4.873)	5.24 ^b	39.1	<0.001	2332
12	hlt, lit, trd, ind, oil, fin	-10.541 [†] (5.445)	8.26 ^b	51.4	0.004	-11.526** (4.391)	5.20 ^b	32.4	<0.001	2071
13	hlt, lit, ind, fin	-11.380 [†] (6.163)	6.53 ^b	38.0	0.005	-11.318* (4.465)	5.12 ^b	30.2	<0.001	2121
14	lit, ind	-10.997 [†] (5.874)	8.78 ^b	45.1	0.004	-11.500* (5.011)	5.04 ^b	38.0	<0.001	2342
15	hlt, ind	-13.141 (8.006)	5.76 ^b	23.2	0.009	-13.035 [†] (6.756)	5.01 ^b	30.4	<0.001	3032

Cluster-robust standard errors (by country) in parentheses. [†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

* strongly identified (KP- $F \geq 10$); ^b borderline ($5 < \text{KP-}F < 10$). All rows clear the Stock-Yogo 10% LML bound on CD- F (16.38 with one excluded instrument, 8.68 with two) and reject Anderson-Rubin at 5% (Stock and Yogo, 2005).

Covariate codes: pol = Polity IV regime score; hlt = life expectancy at birth (WDI); lit = gross adult literacy rate (WDI); trd = trade openness, trade/GDP (WEO);

ind = industry value added, % of GDP (WDI); oil = oil production; fin = bank deposits over GDP. All specifications also include logGDP, logGDP², country and year fixed effects.

Rows ordered by (i) number of designs strongly identified, (ii) number significant at 5%, (iii) at 10%, (iv) worst-case KP- F , (v) mean second-stage p .

Table 7: ICESCR: the 15 covariate combinations retained by both Design I and Design II. Design III retains none.

#	Covariates	FE OLS		2SLS (instrument: <i>BROADCAST</i>)					<i>N</i> OLS	<i>N</i> IV
		$\hat{\beta}$ (se)	flag	$\hat{\beta}$ (se)	KP- <i>F</i>	CD- <i>F</i>	AR <i>p</i>			
1	hlt, lit, trd	-0.627* (0.289)	<i>s</i>	-3.580** (1.287)	22.6 ^s	53.7	0.002		2660	2659
2	lit, trd	-0.627* (0.289)	<i>s</i>	-3.585** (1.324)	21.7 ^s	53.2	0.002		2660	2659
3	hlt, lit, trd, oil	-0.611* (0.273)	<i>s</i>	-3.449** (1.275)	21.1 ^s	52.9	0.002		2648	2647
4	lit, trd, oil	-0.611* (0.273)	<i>s</i>	-3.448** (1.308)	20.1 ^s	52.3	0.002		2648	2647
5	lit	-0.644* (0.280)	<i>s</i>	-3.756** (1.408)	19.6 ^s	45.0	0.001		2744	2744
6	trd	-0.586* (0.246)	<i>s</i>	-3.999* (1.888)	18.9 ^s	34.1	0.006		3517	3517
7	baseline	-0.599* (0.241)	<i>s</i>	-3.963* (1.950)	18.3 ^s	29.9	0.008		3626	3626
8	lit, oil	-0.629* (0.264)	<i>s</i>	-3.656** (1.407)	17.8 ^s	43.9	0.002		2732	2732
9	lit, ind	-0.809* (0.383)	<i>s</i>	-3.784* (1.540)	17.7 ^s	60.6	0.004		2342	2342
10	hlt, trd	-0.586* (0.246)	<i>s</i>	-4.055* (1.936)	17.2 ^s	33.2	0.006		3517	3517
11	lit, ind, oil	-0.785* (0.363)	<i>s</i>	-3.639* (1.548)	16.6 ^s	59.2	0.006		2332	2332
12	pol, lit	-0.566* (0.262)	<i>s</i>	-4.233* (1.960)	16.3 ^s	30.8	0.002		2732	2732
13	pol, lit, oil	-0.556* (0.245)	<i>s</i>	-4.126* (1.954)	15.7 ^s	30.2	0.003		2720	2720
14	pol, lit, trd, oil	-0.504* (0.250)	<i>s</i>	-3.791* (1.865)	15.3 ^s	34.0	0.004		2637	2636
15	pol, hlt, lit, trd, oil	-0.504* (0.250)	<i>s</i>	-3.803* (1.861)	14.2 ^s	33.8	0.004		2637	2636
16	hlt, lit	-0.638* (0.280)	<i>s</i>	-3.806* (1.483)	13.1 ^s	42.5	0.002		2744	2744
17	hlt, lit, oil	-0.624* (0.264)	<i>s</i>	-3.704* (1.476)	12.2 ^s	41.6	0.002		2732	2732
18	pol, hlt, lit	-0.560* (0.262)	<i>s</i>	-4.304* (2.079)	11.7 ^s	28.8	0.002		2732	2732
19	pol, hlt, lit, oil	-0.550* (0.246)	<i>s</i>	-4.194* (2.066)	11.3 ^s	28.3	0.003		2720	2720
20	hlt, lit, ind	-0.780* (0.390)	<i>s</i>	-3.777* (1.576)	11.2 ^s	55.5	0.004		2342	2342
21	hlt, lit, ind, oil	-0.756* (0.371)	<i>s</i>	-3.623* (1.572)	10.7 ^s	54.5	0.006		2332	2332
22	lit, trd, ind	-0.778 [†] (0.404)	<i>b</i>	-3.635* (1.448)	16.7 ^s	73.4	0.003		2303	2302
23	lit, trd, ind, oil	-0.756 [†] (0.385)	<i>b</i>	-3.463* (1.441)	16.0 ^s	72.5	0.005		2293	2292
24	pol, lit, trd	-0.518 [†] (0.267)	<i>b</i>	-3.941* (1.880)	15.7 ^s	34.6	0.003		2649	2648
25	hlt, lit, trd, ind	-0.776 [†] (0.405)	<i>b</i>	-3.591* (1.392)	15.6 ^s	72.6	0.003		2303	2302

continued on next page

Table 8: Cumulated treaty count: the 37 covariate combinations surviving both the FE OLS and the 2SLS filter, best first (1/2).

#	Covariates	FE OLS		2SLS (instrument: <i>BROADCAST</i>)					<i>N</i> OLS	<i>N</i> IV
		$\hat{\beta}$ (se)	flag	$\hat{\beta}$ (se)	KP- <i>F</i>	CD- <i>F</i>	AR <i>p</i>			
26	hlt, lit, trd, ind, oil	-0.753 [†] (0.386)	<i>b</i>	-3.421* (1.385)	15.0 ^s	71.8	0.005		2293	2292
27	pol, hlt, lit, trd	-0.517 [†] (0.267)	<i>b</i>	-3.945* (1.873)	14.4 ^s	34.5	0.003		2649	2648
28	pol, lit, ind	-0.634 [†] (0.353)	<i>b</i>	-4.143* (2.051)	14.3 ^s	44.1	0.008		2332	2332
29	hlt	-0.592* (0.240)	<i>s</i>	-4.054 [†] (2.070)	14.3 ^s	28.0	0.009		3626	3626
30	pol, lit, ind, oil	-0.615 [†] (0.332)	<i>b</i>	-3.970 [†] (2.049)	13.8 ^s	43.9	0.012		2322	2322
31	pol, lit, trd, ind, oil	-0.586 [†] (0.351)	<i>b</i>	-3.736 [†] (1.915)	13.8 ^s	53.4	0.011		2283	2282
32	pol	-0.518* (0.235)	<i>s</i>	-4.464 (2.904)	6.5 ^b	19.2	0.015		3605	3605
33	pol, trd	-0.500* (0.242)	<i>s</i>	-4.484 (2.878)	6.5 ^b	20.9	0.013		3498	3498
34	pol, hlt	-0.510* (0.235)	<i>s</i>	-4.589 (3.087)	6.3 ^b	17.8	0.014		3605	3605
35	pol, hlt, trd	-0.499* (0.242)	<i>s</i>	-4.583 (3.003)	6.2 ^b	19.9	0.012		3498	3498
36	pol, hlt, lit, ind	-0.599 [†] (0.358)	<i>b</i>	-4.147 [†] (2.155)	9.6 ^b	39.6	0.005		2332	2332
37	pol, hlt, lit, ind, oil	-0.579 [†] (0.336)	<i>b</i>	-3.965 [†] (2.136)	9.4 ^b	39.5	0.008		2322	2322

Sample: the 37 of 128 covariate subsets in which the FE OLS *and* the 2SLS estimate of *CUMUTREATY* are both significant at 10%; the same covariate set is used in both estimators of a row.

OLS flag: *s* significant at 5%, *b* at 10% only. IV flag: ^s strongly identified (KP-*F* $\geq$ 10, CD-*F* $>$ 16.38, AR *p* $<$ 0.05), ^b borderline (5 $<$ KP-*F* $<$ 10).

Rows ordered by (i) IV strongly identified, (ii) IV significant at 5%, (iii) OLS significant at 5%, (iv) KP-*F*, (v) mean of the two *p*-values.

Table 9: Cumulated treaty count: the 37 covariate combinations surviving both the FE OLS and the 2SLS filter, best first (2/2).

The resulting set is more robust than for any individual treaty. The sign is negative in 37 of 37 under both estimators; 31 are strongly identified, with $KP-F$ between 6.2 and 22.6 and $CD-F$ between 17.8 and 73.4, and Anderson–Rubin rejects at 5% in every row. The IV estimate is confined to $[-4.59, -3.42]$ and the OLS estimate to $[-0.81, -0.50]$, a ratio of roughly six across the entire surviving space, consistent with the OLS-to-IV amplification observed treaty by treaty. Literacy appears in 29 of the 37 survivors, health in 18 and the political-regime score in 17; *pol* is admissible here, unlike in the single-treaty sets, because the cumulative first stage is strong enough to absorb it, although all six borderline rows contain it and the four in which it enters without literacy carry the weakest first stages in the table ($KP-F$ between 6.2 and 6.5) and lose IV significance. Financial depth appears in none of the 37, as adding *fin* breaks either the OLS or the IV filter. The best-ranked combination is health, literacy and trade openness, with an OLS estimate of -0.627 ($p = 0.032$) and a 2SLS estimate of -3.580 ($p = 0.005$) at $KP-F = 22.6$, the strongest cluster-robust first stage in the paper.