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Abstract

This study contributes to the literature that analyzes the consequences of economic sanctions for the target country's human rights situation. We offer a political economy explanation for different types of human rights infringements or improvements in reaction to economic shocks caused by sanctions. Based on this, we derive hypotheses linking sanctions to four types of human rights: economic rights, political and civil rights, basic human rights, and emancipatory rights. We use endogenous treatment-regression models to test these hypotheses by estimating the causal average treatment effect of US economic sanctions on each type of human rights within a uniform empirical framework. Unlike previous studies, we find no support for adverse effects of sanctions on economic rights or basic human rights, once the endogenous selection of sanctioned countries is modelled. With respect to women's rights, our findings even indicate a positive effect of sanctions. In contrast, our results for political rights and civil liberties suggest that they deteriorate significantly under economic sanctions. We conclude that it is important to account for the potential endogeneity of economic sanctions and to distinguish different dimensions of human rights, as the effects of economic sanctions on these dimensions may vary considerably.

Keywords: Democratization, Discrimination, Economic Sanctions, Endogenous Treatment Model, Human Rights, Repression, United States.

JEL: F51, F52, F53, K10, K11, P14, P16, P26.

1. Introduction

A growing body of economic and political science literature deals with the use of economic sanctions as an instrument in international politics to coerce states to comply with the rules set out by international law. One example is the implementation of sanctions by the United States (US) and the European Union following the 2014 annexation of Crimea by Russia. Sanctions are employed as a response not only to infringements of international law, but also to human rights violations. The US, for example, imposed sanctions on dozens of Russian officials for their involvement in the 2009 death of an imprisoned Russian lawyer who fought against government corruption. Relying on sanctions instead of alternative means of coercion may raise hopes that international military conflicts can be avoided. However, the use of sanctions has been criticized because of the potential damage they inflict on the civil population (de Waart 2015; Peksen 2011). Allen and Lektzian (2013) argue that economic sanctions can have severe public health consequences for the population of a targeted country. Their empirical findings indicate that highly effective sanctions have adverse health effects that are comparable to those resulting from major military conflicts. Gutmann et al. (2017) estimate the average life expectancy at birth of a population to fall by almost half a year when their country of residence is subjected to US sanctions. Indeed, negatively affecting the target country's population is not only an unfortunate side effect of sanctions, but a central element of the causal mechanism, which ideally results in a compliant reaction by the targeted country's political regime.

Hafner-Burton (2014) stresses the theoretically more ambiguous relationship between sanctions and the protection of human rights. On the one hand, sanctions can motivate concessions to improve human rights, if a political regime is starved of the resources it needs to oppress disobedient groups within its population. On the other hand, sanctions may escalate a tense human rights situation by incentivizing the population to dissent and depriving political leaders of the economic means to compensate their supporters for their loyalty. Understanding the human rights consequences of economic sanctions is of fundamental importance for evaluating sanctions as a policy instrument. As noted by Simonen (2015, p. 192): "The discussion, by the judiciary and by the general public, on human casualties and humanitarian suffering, *in numbers*, is an absolute necessity for the definition of *what is acceptable damage* in the light of various human rights commitments assumed by states."

The extant empirical evidence tends to support the notion that economic sanctions are associated with a deterioration of human rights protection. Table A1 in the Appendix surveys 11 published articles that empirically evaluate the effect of economic sanctions on the human rights situation in the target state. The majority of the studies report dispiriting results. The adverse economic shock on a country targeted by sanctions appears to not only motivate infringements of economic and political rights through confiscation of private property (Peksen 2016b) and political repression (Peksen and Drury 2009; 2010), but also infringements of basic human rights (Escribà-Folch 2012; Peksen 2009; Wood 2008). Carneiro and Apolinário (2016) provide evidence that targeted UN sanctions against African states do not have less detrimental consequences. Sanctions also amplify discrimination against marginalized groups in society, especially ethnic minorities (Peksen 2016a). However, there are opposing findings as well. In contrast to Peksen and Drury (2010), Soest and Wahman (2015a) do not find any statistically significant relationship between economic sanctions and the degree of political repression. On the contrary, they report that sanctions aimed at promoting democratization coincide with democratic transitions.

The literature on sanctions not only exhibits some contradictory results, but the tested empirical models also suffer from several drawbacks. First, the potential endogeneity of economic sanctions is ignored, although the imposition of economic sanctions is in many cases motivated by an unfavorable human rights situation and sanctions tend to coincide with political and social transition. In forty-eight percent (113 out of 235) of the cases in our sample, US imposed sanctions were justified by the human rights situation in the target country. Second, empirical studies typically rely on single, narrowly defined indicators for a country's human rights situation. This limited perspective neglects the multi-dimensionality of human rights and the interdependence between these dimensions. Finally, the effects of sanctions on different measures of human rights (economic rights, political rights, basic human rights, and emancipatory rights) are tested using different empirical methods and model specifications, making comparisons across studies very difficult.

This study offers a number of improvements to the literature dealing with the effects of economic sanctions on human rights. First, we systematically evaluate political economy explanations for a political regime's reaction to economic shocks caused by the imposition of sanctions. Based on this theoretical framework, we derive empirically

testable hypotheses that link economic sanctions to four human rights dimensions: economic rights, political and civil rights, basic human rights, and emancipatory rights. Second, we evaluate the effect of US economic sanctions on each of these four human rights dimensions within a uniform empirical framework, where we can also take the interdependence between different human rights dimensions into account. To do so, we draw on two novel datasets for human rights protection (Gutmann and Voigt 2015) and economic sanctions (Neuenkirch and Neumeier 2015; 2016). Third, we take the endogeneity of US economic sanctions into account by using endogenous treatment-regression models. More precisely, we use the potential target country's geographical and genetic distance from the US, as well as its voting alignment with the US in the UN General Assembly (UNGA), as treatment instruments that predict the imposition of US sanctions without directly affecting the human rights situation in a country. The relevance and excludability of our instruments gives us confidence that our estimates can be interpreted causally.

Our key finding is that, once the endogeneity of treatment assignment is taken into account, some of the adverse human rights consequences of sanctions expressed in large parts of the literature are no longer supported by the data. Basic human rights and economic rights appear not to deteriorate under sanctions. Emancipatory rights are, on average, even strengthened when a country faces sanctions imposed by the US. Only political and civil rights are an exception in that we find a causal negative effect of economic sanctions.

In the next section, we develop our theoretical arguments and derive a set of hypotheses. Section 3 describes the dataset and the regression method used to estimate causal average treatment effects. Section 4 discusses our empirical findings and Section 5 concludes.

2. Theory and Hypotheses

To understand the possible human rights consequences of economic sanctions, it is essential to be aware of the economic effects that are associated with the imposition of economic sanctions. Countries subject to sanctions experience both an increase in poverty and income inequality (Choi and Luo 2013; Neuenkirch and Neumeier 2016) as well as a decrease in economic growth (Hufbauer et al. 2009; Neuenkirch and Neumeier

2015). This is important, because it has been widely argued that negative economic shocks such as a decline in income or an increase in inequality help citizens coordinate resistance against the elites (e.g., Acemoglu and Robinson 2001; Knutsen 2014). In other words, adverse economic shocks allow citizens to overcome the collective action problem inherent in revolutions (Tullock 1971). In line with this argument, Allen (2008) shows that anti-government activities do increase under economic sanctions and Marinov (2005) provides empirical evidence that sanctions destabilize political leaders. Obviously, political leaders do well to take the threats caused by economic sanctions seriously. Even though the probability of violent conflict or a coup d'état increases with adverse economic shocks (see Gassebner et al. 2016; Miguel et al. 2004), our argument is that the human rights situation under sanctions depends on how politicians react to the mere threat of such an escalation of conflict.

Wintrobe (2000) argues that dictators have two basic strategies to deal with internal threats. They can redistribute resources to buy the loyalty of the citizens, or they can use repression to discourage the citizens from revolting. The choice between these policy instruments is determined by their relative cost effectiveness in preventing revolutions. In the models of Acemoglu and Robinson (2001, 2006), the elites (which is equivalent to the dictator) can choose a third strategy. They can democratize voluntarily to avoid being removed from office in a violent revolution. After democratization, the majority of the population, that is, the poor, gain control over the state and can decide on the level of redistribution in the present and the future. Why is democratization then different from the use of redistribution by the elites? An increase in tax rates in non-democracies can be reversed as soon as the citizens no longer pose a threat. Thus, the elites cannot credibly commit to permanent redistributive policies if both non-democratic institutions persist and the *de facto* power of citizens to stage a revolution is transitory. Democracy allows such a credible commitment by handing over the *de jure* power to the citizens.

Next, we discuss how different dimensions of human rights should be affected by economic sanctions. The main arguments can be derived from the simple political economy framework we have just sketched. We complement this perspective with additional arguments from the literature.

One important potential effect of sanctions concerns economic rights. A political regime may react to sanctions by redistributing resources to those members of society on whose continued support it depends. Redistribution is not only possible via monetary

transfers, but also by government interference in economic rights. This is a central argument in the rent-seeking literature (Drezner 2011, p. 100; Krueger 1974). Reduced property rights protection and other restrictions on economic liberties, such as price caps, can be used to lower the risk of a revolution by appeasing the majority of the population, or powerful groups within the population. As Peksen (2016b) points out, the ruling elite may not only overtly violate property rights itself and target these violations against the political opposition, but they might also tacitly condone predatory actions of their key supporters by not enforcing laws that would protect private property. However, market interventions not only shield citizens and politically connected business people from the adverse consequences of sanctions, but politicians may also use the scarcity created by sanctions to appropriate rents for themselves. Rowe (2001), for example, explains how scarcity exacerbated by economic sanctions led the government of Rhodesia to organize a public distribution cartel for tobacco (see Kaempfer and Lowenberg (1999) for a more general discussion). These political economy arguments assume that politics are determined by the self-interest of politicians. If that was not the case, economic rights might even improve under sanctions, as well-functioning markets might be the best hope to mitigate the adverse effects of economic sanctions on the economy and eventually the citizens.

H1a: Economic sanctions have a negative effect on the level of economic rights in the target country.

H1b: Economic sanctions have a positive effect on the level of economic rights in the target country.

The effect of economic sanctions on political and civil rights is ambiguous as well. On the one hand, a transfer of *de jure* political power to the citizens might be the *ultima ratio* to stop discontented citizens from revolting, as is argued in the models by Acemoglu and Robinson (2001, 2006). On the other hand, governments targeted by economic sanctions may prefer to repress the population, which is very likely accompanied by violations of political and civil rights. Thus, theoretically either a democratic transition or an authoritarian reversal may occur when sanctions are implemented and it is unclear which of the two effects prevails. Peksen and Drury (2009; 2010) argue that opposition groups may gain momentum when the government

is put under pressure by external actors and that the government will react by limiting political rights to signal its willingness to go against active political dissent. This effect is amplified if the grievances caused by sanctions lead to anti-government violence. Although the argumentation of Peksen and Drury (2009) is somewhat contradictory (opposition groups, e.g., are at the same time weakened and better mobilized due to sanctions), it further supports that the theoretical association between sanctions and political rights is inconclusive. Oechslin (2014) introduces a political economy model to explain why sanctions may fail to bring about regime change, whereas Soest and Wahman (2015a) argue that sanctions specifically aimed at inducing democratic change, so-called democratic sanctions, may lead to more extensive political liberties. Taking the above arguments together we arrive at two opposing hypotheses regarding the relationship between sanctions and political rights.

H2a: Economic sanctions have a negative effect on the level of political rights in the target country.

H2b: Economic sanctions have a positive effect on the level of political rights in the target country.

Repression is one way for the government to react to sanctions and would, likely entail violations of basic human rights. Verwimp's (2003) political-economic analysis of the genocide in Rwanda, for example, shows how desperately a regime can react to threats resulting from economic hardship. We have already noted that repression as a policy instrument is weighed against redistribution in terms of its cost-effectiveness. Acemoglu and Robinson (2000) offer another argument in favor of repression. If there is asymmetric information about the elite's strength, the citizens might interpret economic concessions by the elites as a sign of weakness, which makes the use of repression relatively more attractive. Also, Wood (2008) points out that a regime under economic sanctions may simply lack the necessary resources to placate its citizens and hence has to fall back on repressive measures. Use of repression in response to economic sanctions may indeed be politically cheap, if the regime is able to portray them as an external threat to national unity that requires a harsh reaction (Peksen 2009).

H3a: Economic sanctions lead to more extensive violations of basic human rights in the target country.

Although sanctions may exacerbate human rights violations by instigating repressive measures by the ruling elite, sanctions are frequently employed to put pressure on countries to refrain from these very violations of basic human rights. Hence, target countries face incentives to improve their human rights situation and to end at least the more visible forms of rights violations. Moreover, Peksen (2009) argues that sanctions may weaken the target regime's coercive capacity—by denying them economic and military resources required for maintaining political stability—and thereby reduce basic human rights violations. This would imply the following hypothesis, which is diametrically opposed to H3a.

> H3b: Economic sanctions lead to less severe violations of basic human rights in the target country.

So far, we have focused on the conflict between the general population and the elites of a country. This perspective, however, neglects that the most vulnerable social groups might be threatened the most when societies face income shocks. An extreme case is certainly that of 'witch killings' in rural Tanzania, as studied by Miguel (2005). The literature on the economics of discrimination suggests that discrimination, for example, in the labor market, is less costly during economic downturns for those who discriminate, as there is a temporary excess supply of labor (see, e.g., Becker 1971). In line with this, Drury and Peksen (2014) argue explicitly that economic grievances caused by sanctions lead to increased violations of women's rights.

> H4a: Economic sanctions have a negative effect on the level of women's rights in the target country.

In contrast, the so-called added worker effect predicts that an economic shock may force non-working women to take up a job and contribute to the household income. This can lead to pressure against gender discrimination. Sabarwal et al. (2011) survey the literature on women's (labor market) reactions to economic shocks and conclude that there is a predominant increase in female labor force participation, particularly in the less developed and newly industrialized countries typically sanctioned by the US. Geddes and Lueck (2002) offer a very straightforward explanation of the extension of women's rights based on property rights theory. When women's labor market opportunities improve, husbands initially hold all legal power but are unable to control

the effort level exerted by women at work. Given this principal-agent problem, the family income could be increased by endowing women with economic rights, which would incentivize them to exert higher effort. Similarly, Bertocchi (2011) explains the extension of women's political rights by their labor market opportunities and the resulting reduction in the gender wage gap. If, as a consequence, the gap between the tax rates preferred by (potential) male and female voters or politicians declines, men are more likely to support the extension of women's political rights. This theoretical argument is supported by Hicks' (2013) finding that female suffrage was systematically extended after interstate conflicts, particularly if the disproportionate loss of males in combat led to an increase in female labor force participation. On a general level, Alesina et al. (2013) demonstrate, although in a very different context, that incentivized gender roles can have important consequences for the role of women in society. Doepke et al. (2012) summarize and interpret the literature on culture and women's rights in the same way: "the ultimate cause of political reform was economic change that altered attitudes toward women" (p. 355). A very different explanation for an improvement in women's rights under economic sanctions results from the observation that sanctions are frequently imposed against illiberal human rights violating states. If this is the case, improvements in women's rights might serve as a window dressing to avoid extensive reforms of political and civil rights, which would be more threatening to the survival of the political regime.

H4b: Economic sanctions have a positive effect on the level of women's rights in the target country.

3. Data and Empirical Methodology

3.1 Human Rights and Sanctions Indicators

As dependent variables, we employ four different human rights indicators. They come from a new dataset that measures human rights protection in four empirically distinguishable dimensions as proposed by Blume and Voigt (2007); economic rights, political and civil rights, basic human rights, and emancipatory rights. These four groups include the most important first-generation human rights and some second-generation human rights. Blume and Voigt (2007) apply principal component analysis (PCA) to 24

human rights indicators from different data sources covering a cross-section of 137 countries. Their PCA identifies four distinct latent variables representing each of the theoretically predicted categories of human rights. Gutmann and Voigt (2015) replicate the original PCA of Blume and Voigt (2007) using a panel dataset comprising 19 well-established human rights indicators. The indicators are taken from the CIRI dataset, the Fraser Institute, as well as Freedom House.[1] Table 1 shows the varimax rotated factor loadings with Kaiser normalization as in Gutmann and Voigt (2015).

Table 1: Principal Component Analysis of Human Rights Dimensions

Variable	Comp 1	Comp 2	Comp 3	Comp 4	Unexpl.
Disappearances		0.53			0.40
Extrajudicial Killings		0.56			0.26
Political Imprisonment		0.25			0.40
Torture		0.44			0.35
Freedom of Assembly	0.38				0.27
Freedom of Foreign Movement	0.38				0.31
Freedom of Domestic	0.31				0.56
Freedom of Speech	0.32				0.42
Electoral Self-Determination	0.35				0.26
Freedom of Religion	0.32				0.49
Worker's Rights					0.47
Women's Economic Rights			0.57		0.23
Women's Political Rights			0.42		0.50
Women's Social Rights			0.56		0.21
Legal Structure and Property				0.36	0.23
Regulation				0.63	0.26
Freedom to Trade				0.60	0.20
Political Rights	–0.32				0.18
Civil Liberties	–0.29				0.14

Source: Gutmann and Voigt (2015). Factor loadings are omitted for legibility if |loading|<0.25.

The results of Gutmann and Voigt (2015) are even more clear-cut regarding the empirical distinction of the theoretically prescribed human rights dimensions. The four principal components cover up to 121 countries over the period from 1981 to 2011. The

[1] The concrete indicators are the following. Cingranelli and Richards (2010); disappearances, political or extrajudicial killings, political imprisonment, torture, freedom of assembly and association, freedom of domestic and foreign travel, freedom of speech, electoral self-determination, freedom of religion, workers' rights, and women's political, economic, and social rights. Freedom House (2014); political rights and civil liberties. Gwartney et al. (2014); freedom in the legal system and property rights, freedom to trade internationally, and freedom from regulation.

bivariate correlations among the four components are around 0.60. It should be noted that all four indicators reflect the *de facto* human rights situation in a country. This makes sense in light of our research design, as many policies adopted by a regime in reaction to sanctions do not necessarily require legal changes or, in the case of repressive policies, are often not even legal. Property rights, for example, could be improved or weakened by rewriting parts of the constitution (however, see Voigt and Gutmann (2013) for the limitations of such an approach), but increased expropriation could just as well be based on existing laws. In our analysis, we standardize the four components so that each of them has a mean of 0 and a standard deviation of 1 in order to facilitate the interpretation of our coefficient estimates.

Using principal component analysis for the construction of human rights indicators has an important advantage over the use of the original variables. Since our principal components are based on common variation in the underlying indicators, they are robust to systematic biases and measurement errors in those variables. Consequently, the principal components provide us with a reliable and objective estimate of the *de facto* human rights situation, even in case the validity and objectivity of single indicators might be questioned.

Our main explanatory variable, the sanction indicator, takes the value 1 if a certain country *i* is subject to US economic sanctions in year *t*, and 0 otherwise. We rely on a unique dataset by Neuenkirch and Neumeier (2015) covering all US sanction episodes between 1976 and 2012. This dataset is an extension of the dataset by Hufbauer et al. (2009). After adjusting the sample of Neuenkirch and Neumeier (2015) to the smaller human rights dataset of Gutmann and Voigt (2015), 235 country-year observations with US sanctions in place remain. The countries included in our final dataset as well as the sanction episodes are listed in Table A2 in the Appendix.

In the context of our empirical analysis and following the extant empirical literature, we also estimate separate effects for different types of economic sanctions. First, we evaluate the effect of sanctions that impose *low costs* versus those imposing *high costs* on the target state. To this end, we utilize estimates of the sanction-induced decline of the target state's GNP provided by Hufbauer et al. (2009), which is available for 205 sanction country-years. We consider sanctions that lead to a decline in the target state's GNP by less than 1% as *low cost* sanctions (129 observations) and sanctions associated with a decline of 1% of GNP or more as *high cost* sanctions (76 observations). Second,

we distinguish between *unilateral* sanctions imposed by only the US (133 observations) and *multilateral* sanctions where the US was joined by other nations or international organizations (102 observations). Third, we distinguish sanctions targeted against *democratic* states, as measured by a polity2 score of six or higher before the imposition of sanctions (40 observations), from those targeted against *non-democratic* states (195 observations). Finally, we examine the impact US sanctions have over time by creating three subgroups. We distinguish observations where sanctions have been in place for *less than six years* (91 observations), for *six to ten years* (58 observations), and for *eleven or more years* (86 observations), respectively.

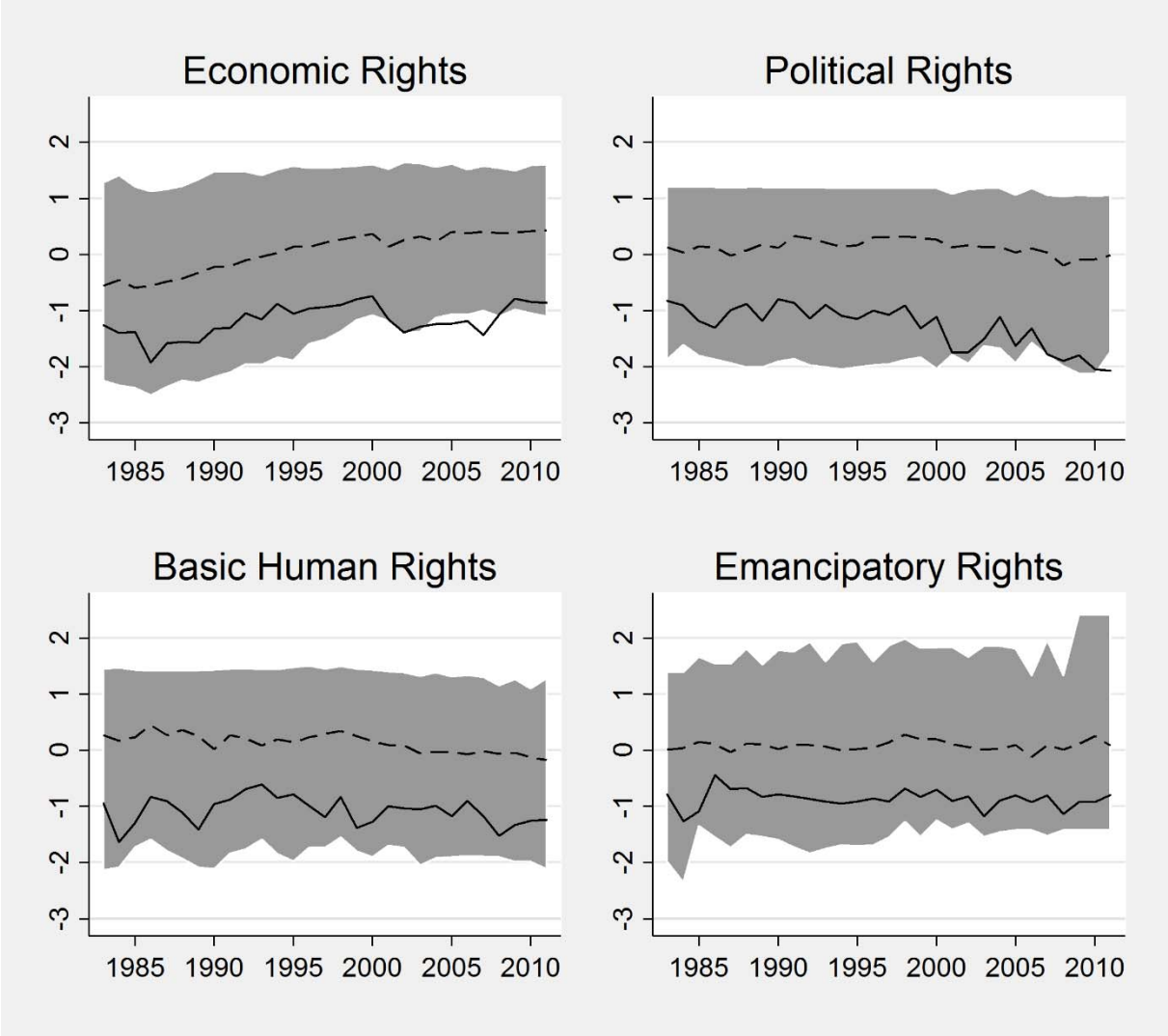
Figure 1 gives a first impression of the association between economic sanctions and human rights. It shows the average human rights conditions for every year in sanctioned countries (solid lines) and non-sanctioned countries (dashed lines). The shaded areas represent the range between the 5% and the 95% quantile for all countries in the sample.

Figure 1 shows a significant upward trend for economic rights in both, non-sanctioned and sanctioned countries. In contrast, the level of political rights appears to deteriorate in countries subject to US sanctions. Basic human rights and emancipatory rights remain approximately constant over time. The dispiriting finding that human rights in general do not improve noticeably over our sample period can be explained by the changing composition of the sample (see also Figure A1 in the Appendix). The number of countries with complete data doubles over time from 55 in 1983 to roughly 110 countries from 2002 onwards. Over this period, more data for less developed and newly industrialized countries became available.

Figure 1 also suggests a striking difference between human rights in sanctioned and non-sanctioned countries that persists over time. On average, the human rights situation in sanctioned countries is roughly one standard deviation worse compared to their non-sanctioned counterparts. Arguably, this difference may be driven by two factors. On the one hand, the worse human rights situation could be a direct consequence of economic sanctions, as the incumbent regime might use repression to secure its power (see Section 2). On the other hand, an already unfavorable human rights situation could be one of the reasons for the imposition of economic sanctions (see also Hufbauer et al. 2009). Therefore, our estimation strategy below is an attempt to disentangle these two

(potentially opposing) explanations, that is, we isolate the treatment effect of economic sanctions from the selection into the treatment.

Figure 1: Human Rights over Time



Notes: Figure shows the average human rights conditions per year in sanctioned countries (solid lines) and non-sanctioned countries (dashed lines). Shaded areas represent the range between the 5% and the 95% quantile for all countries in the sample. Figure A1 in the Appendix shows the number of observations for non-sanctioned and sanctioned countries over time.

3.2 Estimation Strategy

In our empirical analysis, we consider the imposition of US economic sanctions as a treatment. Consequently, our treatment group is comprised of observations on countries in years under sanctions, while country-year observations without sanctions in place are the control group. Our goal is to estimate the average treatment effect on the treated (ATT), which is defined as follows:

$$(1)\ ATT = E[y_{1it}|d_{it} = 1] - E[y_{0it}|d_{it} = 1]$$

The first term on the right-hand side of Equation (1) represents the expected outcome in the treatment group after treatment $E[y_{1it}|d_{it} = 1]$, the second term is the counterfactual outcome, that is, the expected outcome subjects in the treatment group would have achieved if treatment had not been assigned $E[y_{0it}|d_{it} = 1]$. The problem is that the counterfactual outcome is not observable and, thus, a suitable substitute is required to compute the ATT. If treatment is assigned randomly, then the average outcome for units not exposed to treatment constitutes a proper substitute, as selection into treatment is not related to factors affecting the outcome of interest. The imposition of economic sanctions, though, is clearly not random, making the identification of the ATT difficult.

To account for the endogeneity of the treatment, and to evaluate the causal influence of US economic sanctions on the target states' respect for human rights, we employ an endogenous treatment model. Endogenous treatment models allow identification of the causal effect although selection into treatment is based on unobservable factors that also affect the outcome of interest. Identification presupposes the availability of at least one variable that affects treatment assignment, but is not directly related to the outcome.[2]

Suppose that the outcome can be modelled by means of the following equation, which we refer to as the *outcome model*:

$$(2)\ y_{it} = x'_{it}\beta + \delta d_{it} + u_{it}$$

where y is the outcome of interest (i.e., one dimension of human rights), x is a vector of exogenous covariates that potentially explain the outcome, and d is an indicator variable that takes the value 1 if a country is subject to treatment (i.e., it is under US sanctions). Our parameter of interest, the ATT, is denoted by δ. To account for the endogeneity of treatment assignment, Equation (2) is complemented by a binary choice model that explains selection into treatment. We refer to it as the *selection model*:

[2] The endogenous treatment model employed here was first introduced by Heckman (1976; 1978). It is closely related to the Heckman selection model, as it can be interpreted as addressing a double sample selection problem (Clougherty et al. 2016, p. 298). Alternatively, one could estimate two separate Heckman selection models for the treated and untreated units. This would, however, be less efficient, as only the subsample of the treated and untreated units, respectively, could be used to identify the parameter of interest. See Cameron and Trivedi (2005) for a thorough discussion.

$$(3)\ d_{it}^{*} = z_{it}'\gamma + v_{it}$$

where d_{it}^{*} is a latent variable, which is assumed to be standard normally distributed such that

$$d_{it} \begin{cases} 1 \text{ iff } d_{it}^{*} > 0 \\ 0 \text{ iff } d_{it}^{*} \leq 0 \end{cases}$$

and z is a vector of exogenous covariates that affect the likelihood of being selected into treatment. The vector z in the selection model may, but does not have to, overlap with the vector of covariates *x* employed in the outcome model.

To see how the endogeneity of treatment assignment affects the outcome of interest, it is helpful to take a closer look at the relation between the error terms of Equations (2) and (3). Assume that the vector of error terms (u_{it}, v_{it}) comes from a mean zero bivariate normal distribution and has the following covariance matrix:

$$\Sigma = \begin{bmatrix} \sigma^2 & \sigma\rho \\ \sigma\rho & 1 \end{bmatrix}$$

where ρ measures the correlation between the treatment assignment errors and the outcome errors and σ^2 measures the variance of the outcome error. For identification, the variance of v is restricted to 1. Exogeneity of the treatment implies that $\rho = 0$, that is, the outcome of interest is not related to unobservables affecting the likelihood of treatment assignment. The coefficient for ρ allows us to assess the importance of the selection bias for the outcome of interest. For example, a negative (positive) value of ρ implies that unobservables that negatively affect a country's human rights situation tend to concur with unobservables that increase (decrease) the likelihood of being subject to US economic sanctions. Estimating the ATT presupposes the identification of ρ which, in turn, requires that at least one variable in vector *z* must not be included in vector *x*. This non-included variable needs to be significantly correlated with the likelihood of receiving treatment, but uncorrelated with the error term of the outcome model. We refer to a variable fulfilling these conditions as a *treatment instrument*. In case a suitable treatment instrument is available, all parameters that need to be identified to compute the ATT can be estimated simultaneously by Maximum Likelihood (see Maddala 1983 for a formal derivation of the likelihood function).

In the following, we use simple OLS regressions as a benchmark to evaluate the influence of US economic sanctions on the targeted governments' respect for human rights if sanctions were randomly assigned. For this purpose, we estimate the following equation:

$$(4)\ y_{it} = x'_{it}\tilde{\beta} + \tilde{\delta}d_{it} + \tilde{u}_{it}$$

where y, x, and d are defined as in Equation (2). By comparing the findings from simple OLS regressions to those obtained from the endogenous treatment-regression models, we are able to assess how severely the endogeneity of the treatment affects the results presented in the extant empirical literature.

3.3 Control Variables and Treatment Instruments

In our empirical analysis, the vector of covariates in the treatment model (vector z) includes factors that we expect will affect the likelihood of being targeted by US economic sanctions. According to Hufbauer et al. (2009), US sanctions have been primarily imposed for three reasons: (i) to coerce states (or militant groups within states) to stop threatening or infringing the sovereignty of another state by, for example, engaging in violence against another state or destabilizing its government; (ii) to foster democratic change in a country, protect democracy, or destabilize an autocratic regime; and (iii) to protect the citizens of a state from political repression and to enforce human rights. Choi and James (2016) provide evidence that US intervention is primarily due to the third reason.

Consequently, we include one-year lagged realizations of our human rights indicators into vector *z*. We also account for a country's level of democracy. Further, we take into account the occurrence of minor conflicts (defined as any intrastate or interstate armed conflict resulting in between 25 and 999 battle-related deaths in that year) and major conflicts (defined as conflicts resulting in at least 1,000 battle-related deaths in that year). We add US President-fixed effects to control for President-specific and time-specific influences such as differences with respect to the foreign policy stance across tenures of US Presidents (Reagan, Bush Sr., Clinton, Bush Jr., and Obama) and also for

changes in the global political environment (e.g., the fall of the Iron Curtain or the adoption of the Millennium Development Goals).[3]

Additionally, we consider one-year lagged macroeconomic variables in the selection model; real GDP per capita in logs, the growth rate of real GDP per capita, population in logs, trade openness (exports plus imports divided by GDP), the trade share with the US (exports to plus imports from the US divided by the country's total exports plus imports), economic and military aid per capita from the US (both in logs), and foreign direct investment per capita from the US (in logs). Vector *x* of the outcome model includes the same covariates as just described for vector *z* plus country-fixed effects to account for unobserved heterogeneity and year-fixed effects instead of US President-fixed effects.

In our empirical analysis, we employ three treatment instruments to identify the ATT. These variables are included in vector *z*, but not in vector *x*, because we believe that they do not directly affect the outcome variables of interest. First, we use the geographical distance in logs between the capital of each country included in our sample and Washington, D.C. as a treatment instrument. There are several reasons to believe that countries that are close to the US are *ceteris paribus* more likely to be targets of US economic sanctions. First, internal conflicts in a country that is close to the US may represent a greater threat to the US itself. These types of conflicts may also cause direct adverse consequences for the US, such as an impairment of economic relations (Martin et al. 2008), or the danger of contagion (Weidmann and Ward 2010). Moreover, human rights violations that cause safety-seeking refugee flows are more threatening to US interests when the country of origin is close to the US (Nielsen 2013). Second, the closer a country is to the US, the greater the awareness of its political and social situation among the general public in the US, thus increasing the pressure on US politicians to intervene. Nielsen (2013), for example, shows that the likelihood of aid sanctions against repressive states increases with the level of media coverage. Peksen et al. (2014) find the same effect specifically for the imposition of US economic sanctions. Finally, sanctions may be considered more effective if the prospective target nation is close. Neuenkirch and Neumeier (2015) show that the magnitude of the adverse effect US

[3] The results based on our main specifications remain robust when replacing the US President-fixed effects with year-fixed effects. However, as part of our robustness checks, we reduce our sample to glean further insights. Due to the associated decrease in the degrees of freedom, some models do not converge when employing year-fixed effects in the selection model.

economic sanctions have on the target state's GDP is inversely related to the target state's distance to the US. Inasmuch as the US takes the expected effectiveness of its sanction measures into account, there should be a negative association between the likelihood of implementing sanctions and the potential target country's distance to the US. A study that makes use of the same treatment instrument is Bell et al. (2016). They instrument the deployment of US troops with the distance to the US (in logs) and with a dummy that identifies US allies. Their results indicate that US troops reduce human rights violations in countries where they are deployed, as long as these countries are not strategically important to the US.

Our second treatment instrument is an indicator of genetic distance by Spolaore and Wacziarg (2009). Underlying this instrument is the same logic as for the geographic distance indicator. Giuliano et al. (2014) show that genetic distance functions as a proxy for geographical barriers to migration and trade (specifically seas, mountain chains, and the ruggedness of territory), because these factors shaped genetic differences across populations, mostly in the Neolithic Period, beyond what can be explained by a simple measure of distance. These features of geography are important barriers to cultural and economic exchange between countries and we use genetic distance to proxy for these barriers. We expect, in line with our arguments in the previous paragraph, that countries with a higher genetic distance to the US are less likely to be targeted by US sanctions.

Using data taken from Bailey et al. (2017), our third treatment instrument measures the alignment of a country's votes in the UNGA with US votes. To construct this measure, Bailey et al. (2017) propose a dynamic ordinal spatial model to estimate annual state ideal points from 1946 to 2012 on a single dimension. The absolute difference between each country's ideal point and the US's ideal point is then employed as an indicator of voting distance. Arguably, a country that tends to vote in line with the US (i.e., those countries where the values of the voting distance measure are close to zero) can expect a more favorable treatment, thus reducing the likelihood of being targeted by US sanctions. Dreher and Jensen (2013), for example, argue that the US punish governments economically if they take opposing political positions in the UNGA. Nielsen (2013) finds that aid recipients that vote with donors in the UNGA are exempt from aid sanctions in response to human rights violations. The same holds in case of joint membership in military alliances. Soest and Wahman (2015b) show that authoritarian

regimes who vote similarly to the West in the UNGA are less likely to be targeted by EU and US sanctions.[4]

To check the *excludability* of our treatment instruments, we conduct tests analogous to a standard overidentifying restrictions test (Sargan 1958). For that purpose, we regress the structural residuals from Equation (2) on all variables of the vector x plus the treatment instruments and we test for the joint significance of all variables in this auxiliary regression. The test results indicate that the exclusion restriction is met (see Table 2). To illustrate the *relevance* of our treatment instruments, we show the results of the selection model in Table A5 in the Appendix.[5] Countries with a better human rights situation in the previous period, larger countries, more open countries, and countries that received more military aid are less likely to be targeted by US economic sanctions. This is in line with Soest and Wahman's (2015b) result that human rights violations trigger sanctions by the EU and the US. In case of major conflicts, we find that countries are less likely to be sanctioned by the US. This result might seem counterintuitive, but it can be explained by Hultman and Peksen's (2015) finding that economic sanctions, in contrast to weapons embargoes, tend to escalate and not reduce conflict violence.[6] Most importantly, two of our three treatment instruments significantly explain selection into treatment with expected signs as countries that are closer to the US in terms of geographical distance and genetic distance are more likely to be targeted by US sanctions. A joint exclusion test of all three instruments clearly rejects the null hypothesis ($Chi^2(3) = 19.82^{**}$).[7]

4. Empirical Results

4.1 Baseline Results

The results for both the OLS regressions as well as the endogenous treatment models are shown in Table 2. The OLS estimates are presented in the upper panel and the results based on our endogenous treatment models in the lower panel. In addition to the

[4] Table A3 in the Appendix summarizes all variables as well as their definitions and sources. Table A4 provides summary statistics and detailed information on episodes of economic sanctions and conflicts.

[5] These estimates and those in Section 4 below differ slightly, as the latter are based on a simultaneous estimation of Equations (2) and (3), whereas the results reported here are based on Equation (3) only.

[6] The counterintuitive sign for economic aid can be explained by collinearity with military aid.

[7] The corresponding F test statistic when estimating a linear probability model for the selection stage is $F(3,2571) = 13.10^{**}$, which exceeds the threshold for non-weak instruments in 2SLS estimations.

treatment effect estimates of US sanctions in the part labelled outcome model, Table 2 contains the coefficients of the treatment instruments in the part labelled selection model. Moreover, the estimates for ρ, that is, the coefficients of correlation between the treatment assignment errors and the outcome errors are displayed in each table as well as the results of a test in the spirit of an overidentifying restrictions test, that is, a test for the excludability of the treatment instruments (see Section 3.3). Coefficient estimates for control variables, that is, all variables in vector *x*, are not displayed to conserve space.

Table 2: US Sanctions and Human Rights

	Economic	**Political**	**Basic**	**Emancipatory**
Ordinary Least Squares				
US Sanctions	0.000	–0.117**	–0.099*	–0.048
	(0.016)	(0.026)	(0.040)	(0.042)
Endogenous Treatment				
Selection Model				
Log(Geogr. Distance from US)	–0.188*	–0.194*	–0.185*	–0.168*
	(0.083)	(0.083)	(0.083)	(0.081)
Log(Genetic Distance from US)	–0.263**	–0.260**	–0.267**	–0.221**
	(0.079)	(0.079)	(0.079)	(0.077)
Log(Voting Distance from US)	–0.108	–0.115	–0.120	–0.107
	(0.111)	(0.111)	(0.111)	(0.106)
Outcome Model				
US Sanctions	–0.015	–0.094**	–0.064	0.285**
	(0.024)	(0.035)	(0.056)	(0.093)
Model Diagnostics				
ρ	0.059	–0.057	–0.055	–0.485**
	(0.072)	(0.061)	(0.061)	(0.117)
Overid. Restr. F(154,2439)	0.051	0.003	0.005	0.220

Notes: Top panel shows selected OLS estimates based on Equation (4). Bottom panel shows the corresponding estimates of an endogenous treatment-regression model based on Equations (2) and (3). Standard errors are in parentheses. Number of observations: 2,594. Full tables are available on request.

The findings based on OLS estimation suggest that US economic sanctions have an adverse effect on the target state's respect for basic human rights as well as political rights and civil liberties. This finding is well in line with the evidence provided by Peksen (2009) and Wood (2008). In contrast, we do not find a significant association between economic sanctions and the level of economic rights or emancipatory rights. This finding stands in contrast to Peksen (2016b), who finds a negative effect of

sanctions on economic freedom in terms of property rights protection and the use of contract-intensive money.

The results based on the endogenous treatment model, however, draw a different picture. Compared to the OLS regressions, the treatment effect estimates for political rights and civil liberties as well as for basic human rights are smaller and, in case of the latter, even insignificant. The corresponding standard errors remain roughly the same. This indicates that the OLS estimates are biased downward and that the insignificance of the sanction indicator in case of basic human rights in the endogenous treatment model is due to correction for this bias and not due to inefficient estimation. Thus, our results suggest that the widely-offered criticism that economic sanctions lead targeted regimes to become even more repressive, is only backed by the data with respect to political rights. Furthermore, we find a strong and significantly positive influence of US economic sanctions on the target state's respect for emancipatory rights. The effect appears to be quite sizeable. When sanctions are in effect, our women's rights indicator increases by more than a third of a standard deviation. Finally, as in the case of OLS estimation, the endogenous treatment model suggests that there is no significant association between the imposition of economic sanctions and the target state's level of economic rights.

Clearly, our results do not provide support for many of the hypotheses developed in Section 2 and frequently proposed in the literature. Economic rights are not systematically affected by US sanctions. Although our OLS estimates indicate that basic human rights suffer under economic sanctions imposed by the US, the results from the endogenous treatment models lead us to reject the corresponding hypothesis 3a. From the positive effect of US economic sanctions on emancipatory rights (hypothesis 4b) that we find after modelling the endogeneity of selection into treatment, we conclude that our data does not support the widespread concern about strictly negative human rights consequences of economic sanctions. Nevertheless, one robust result across both specifications is the adverse effect of economic sanctions on political rights and civil liberties (supporting hypothesis 2a). All in all, we conclude that it is important to account for potential endogeneity of sanctions and to distinguish different dimensions of human rights, as the effects of economic sanctions might vary across these.

A glance at the coefficient estimates for our treatment instruments confirms the results in Table A5 in the Appendix. Geographical distance from Washington, D.C. and genetic distance from the US are indeed strongly related to the likelihood of being targeted by

US economic sanctions. Our indicator measuring voting alignment, however, is statistically insignificant, implying that the voting behavior of a country in the UNGA is not related to the likelihood of being targeted by US sanctions. The fact that our geographic indicators (remember that genetic distance proxies for barriers between countries, such as mountain chains and seas) constitute better predictors of US sanctions than UNGA voting alignment with the US casts doubt on the reliability of UN voting as an indicator of geostrategic interests of the US and other countries.

In case of emancipatory rights, the significant and sizable negative estimate for ρ indicates that unobservables that adversely affect a country's human rights situation tend to follow a similar pattern as unobservables that increase the likelihood of being targeted by US economic sanctions. This finding underlines the endogeneity of US economic sanctions in case of emancipatory rights: The set of control variables employed in a simple least squares analysis does not capture the differences between countries on which sanctions are imposed and countries not subject to sanctions to a sufficient degree. An analysis of the effects of sanctions that ignores the endogeneity of US economic sanctions, thus, produces biased estimates. In case of political rights and civil liberties as well as for basic human rights the negative estimates for ρ are much smaller (and insignificant), leading only to a small bias in the OLS estimates. Finally, the tests of overidentifying restrictions do not reject the null hypothesis of excludability of our treatment instruments in any of the models reported in Table 2.

4.2 Extensions

To glean additional insights, we distinguish between different types of US economic sanctions and estimate separate treatment effects for each type. First, we evaluate the effect of low cost-sanctions versus high cost-sanctions. To this end, we omit all high cost-sanctions from our sample of country-year observations. That way, the coefficient estimate for our sanction indicator provides us with an estimate of the effect of low cost-economic sanctions. Then, we omit instead country-year observations with low cost-sanctions to obtain an estimate for the effect of high cost-sanctions.[8] Using the same approach, we evaluate the impact of: unilateral versus multilateral sanctions, sanctions

[8] In case of both costs-to-target-indicators, the number of observations is reduced, because the dataset by Hufbauer et al. (2009) does not cover all sanction episodes in our sample. This might be one of the reasons why the significance of the treatment indicator is generally weaker in this extension.

targeted against democracies versus those targeted against non-democratic states, and sanctions that have been in place for 1 to 5 years versus 6 to 10 years versus 10 or more years. The results for both the OLS regressions as well as the endogenous treatment models are shown in Tables 3a–3d. The OLS estimates are again presented in the top panel and the results based on our endogenous treatment model in the bottom panel.

Table 3a: US Sanctions and Human Rights – Low Costs versus High Costs to Target

	Economic	**Political**	**Basic**	**Emancipatory**
Ordinary Least Squares				
Low Costs to Target	0.004	–0.095**	–0.105	0.005
	(0.021)	(0.034)	(0.054)	(0.057)
High Costs to Target	0.003	–0.067	–0.046	–0.110
	(0.026)	(0.042)	(0.065)	(0.072)
Endogenous Treatment				
Low Costs to Target	–0.030	–0.051	–0.095	0.447**
	(0.029)	(0.044)	(0.067)	(0.069)
High Costs to Target	–0.010	–0.059	0.022	–0.042
	(0.035)	(0.050)	(0.081)	(0.153)

Notes: Top panel shows selected OLS estimates based on Equation (4). Bottom panel shows the corresponding estimates of an endogenous treatment-regression model based on Equations (2) and (3). Standard errors are in parentheses. Number of observations: 2,488 (low costs to target) and 2,435 (high costs to target). Full tables are available on request.

Table 3b: US Sanctions and Human Rights – Unilateral versus Multilateral Sanctions

	Economic	**Political**	**Basic**	**Emancipatory**
Ordinary Least Squares				
Unilateral Sanctions	–0.014	–0.101**	–0.135*	–0.030
	(0.021)	(0.034)	(0.054)	(0.057)
Multilateral Sanctions	0.014	–0.136**	–0.051	–0.058
	(0.021)	(0.034)	(0.053)	(0.058)
Endogenous Treatment				
Unilateral Sanctions	–0.035	–0.063	–0.096	0.358**
	(0.031)	(0.043)	(0.067)	(0.084)
Multilateral Sanctions	0.001	–0.116**	–0.043	–0.179
	(0.030)	(0.045)	(0.073)	(0.140)

Notes: Top panel shows selected OLS estimates based on Equation (4). Bottom panel shows the corresponding estimates of an endogenous treatment-regression model based on Equations (2) and (3). Standard errors are in parentheses. Number of observations: 2,492 (unilateral sanctions) and 2,461 (multilateral sanctions). Full tables are available on request.

Table 3c: US Sanctions and Human Rights – Democracies versus Non-Democracies

	Economic	Political	Basic	Emancipatory
Ordinary Least Squares				
Against Democracies	0.035	–0.186**	–0.108	–0.023
	(0.028)	(0.044)	(0.070)	(0.076)
Against Non-Democracies	–0.011	–0.087**	–0.104*	–0.058
	(0.019)	(0.030)	(0.047)	(0.050)
Endogenous Treatment				
Against Democracies	0.047	–0.111	–0.084	0.549**
	(0.052)	(0.069)	(0.109)	(0.119)
Against Non-Democracies	–0.032	–0.091*	–0.063	0.219*
	(0.025)	(0.038)	(0.061)	(0.108)

Notes: Top panel shows selected OLS estimates based on Equation (4). Bottom panel shows the corresponding estimates of an endogenous treatment-regression model based on Equations (2) and (3). Standard errors are in parentheses. Number of observations: 2,399 (against democracies) and 2,554 (against non-democracies). Full tables are available on request.

Table 3d: US Sanctions and Human Rights – Influence Over Time

	Economic	Political	Basic	Emancipatory
Ordinary Least Squares				
1 to 5 Years	0.006	–0.171**	–0.037	–0.028
	(0.019)	(0.031)	(0.049)	(0.053)
6 to 10 Years	–0.018	–0.114**	–0.182**	0.001
	(0.027)	(0.042)	(0.067)	(0.073)
11 Years +	0.005	0.005	–0.101	–0.140
	(0.029)	(0.046)	(0.073)	(0.080)
Endogenous Treatment				
1 to 5 Years	0.003	–0.157**	0.009	0.435**
	(0.033)	(0.043)	(0.069)	(0.087)
6 to 10 Years	–0.030	–0.122*	–0.162	0.312*
	(0.037)	(0.055)	(0.086)	(0.126)
11 Years +	–0.030	0.065	–0.059	–0.321*
	(0.036)	(0.058)	(0.087)	(0.132)

Notes: Top panel shows selected OLS estimates based on Equation (4). Bottom panel shows the corresponding estimates of an endogenous treatment-regression model based on Equations (2) and (3). Standard errors are in parentheses. Number of observations: 2,450 (1 to 5 years), 2,417 (6 to 10 years) and 2,445 (11 years +). Full tables are available on request.

In general, the results are well in line with those presented in the preceding subsection. First, we find no significant influence of US sanctions on economic rights across all specifications. Second, in case of political rights and civil liberties, both sets of estimates suggest that the imposition of multilateral sanctions produces more severe adverse effects on political rights than unilateral sanctions, a finding reported in the

extant empirical evidence (Peksen and Drury 2010). In addition, the negative effect of sanctions declines over time. This result, arguably, could reflect endogeneity beyond that what can be addressed by our empirical approach; more effective sanctions tend to be lifted sooner. Third, we get a somewhat different picture when looking at the target country's basic human rights situation. Here, the adverse effect of sanctions appears to be stronger for unilateral sanctions, albeit only in our OLS estimates Note that, again, the lack of significance of our sanction indicators in the endogenous treatment model is not due to inefficient estimation. Rather, when taking the endogeneity of economic sanctions into account the coefficient estimates tend to decrease, indicating (an admittedly small) bias in the OLS regressions.

Finally, when we look at the effect of sanctions on the level of emancipatory rights, we find a stronger positive effect for sanctions targeted against democracies. This finding is quite intuitive as democratic governments are more accountable to the population and, hence, more likely to react to demands for more liberal women's rights. Interestingly, the positive effect on women's rights is relatively stronger for 'weaker' unilateral sanctions and for sanctions with low costs to the target. This might suggest that the added worker effect is strongest for moderate adverse economic shocks. Larger shocks from the most severe economic sanctions could, in contrast, be too harmful to the economy, undermining economic opportunities for female workers. Finally, the positive impact of sanctions on emancipatory rights is largest during the first five years of imposition, during which the largest change in composition of the labor force can be expected. After a decade under sanctions, no positive effects on women's rights can be expected anymore.

5. Conclusions

We use endogenous treatment regression models to estimate the causal average treatment effect of US economic sanctions on four types of human rights; economic rights, political rights and civil liberties, basic human rights, and emancipatory rights. We take the endogeneity of the imposition of US economic sanctions explicitly into account by using treatment instruments that are directly associated with the likelihood of being targeted by US sanctions, but not with the outcome variables of interest.

In contrast to previous studies, which ignore the endogeneity of economic sanctions, we find no support for adverse effects of sanctions on economic rights or basic human rights. With respect to women's rights, our findings even indicate a positive relationship. Emancipatory rights are, on average, strengthened when a country is sanctioned by the US. This finding supports arguments that in response to economic shocks women in less developed and newly industrialized countries enter the labor market, which makes the extension of economic and political rights of women more likely. However, in case of political rights and civil liberties, our results confirm the previous finding of a detrimental impact of economic sanctions. Therefore, we conclude that it is important to account for the potential endogeneity of sanctions and to distinguish different dimensions of human rights, as the effects of economic sanctions might vary across these.

Economic sanctions do not lead to a deterioration of all human rights dimensions in the targeted country, as claimed by many authors in the extant literature. Our results suggest that this claim is only backed by the data in case of political rights and civil liberties. This adverse effect and the lack of any visible improvement in basic human rights, arguably, is a dispiriting result for the effectiveness of economic sanctions. Particularly, since human rights violations are not the only possible negative consequence of sanctions, as we have acknowledged from the beginning. Increased poverty, reduced economic growth, and adverse health effects are dramatic consequences in themselves.

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Appendix

Table A1: Empirical Studies on the Relationship between Economic Sanctions, and Human Rights

Author(s)	Subject and Data	Dependent variable(s)	Sanction indicator(s)	Method	Results
Carneiro and Apolinário (2016)	Effect of targeted UN economic sanctions on human rights (data covering UN sanction episodes against African countries over the period 1992-2008)	Political terror scale (data taken from Gibney et al. 2016)	Binary UN economic sanction indicator (data taken from Morgan et al. 2014), binary indicator for targeted UN economic sanctions (data taken from Biersteker et al. 2016)	Pooled ordered logistic regression	Targeted UN economic sanctions are associated with greater political repression, non-targeted sanctions are not significantly related to political repression
Drury and Li (2006)	Effect of US sanction threats on human rights situation in China (time-series data covering the period 1989-1995 at a daily frequency)	Indicators for political unrest, repression, and accommodation	Binary indicators for US sanction threats (Congressional speeches and presidential comments related to China's MFN status) and US threatening actions (passing of an anti-MFN bill in House or Senate)	Three-equation SUR model using 28-days moving sums	US rhetorical threats and threatening actions are associated with a decrease in the level of accommodations by the Chinese government, but are not significantly related to political unrest and repression

Table A1 (cont.)

Drury and Peksen (2014)	Effect of international economic sanctions on women's rights (panel data covering 146 countries over the period 1971-2005)	Women's economic, political, and social rights (all data taken from the Cingranelli and Richards 2010), female labor participation (data taken from the World Bank's World Development Indicators)	Binary economic sanction indicator, binary indicators for multilateral sanctions and sanctions with the aim of preventing human rights violations, continuous sanction cost indicator (data taken from Hufbauer et al. 2009)	Pooled ordered logistic regression and pooled OLS regression	Economic sanctions are associated with less respect for women's economic and social rights, but only in low-income countries (per capita GDP below 1,500); no association between economic sanctions and women's political rights and female labor participation; economic sanctions with humanitarian goals are associated with an improvement of women's economic rights and female labor participation
Escribà-Folch (2012)	Effect of international sanctions on political repression in authoritarian regimes (panel data covering 90 countries over the period 1976-2001)	Political terror scale/state violations of physical integrity rights (data taken from Hafner-Burton and Tsutsui 2007)	Binary economic sanction indicator (data taken from Marinov's (2005) update of the Hufbauer et al. (2009) data)	Pooled ordered logistic regression	Economic sanctions are associated with increased political repression; the effect is larger in personalist regimes than in single-party and military regimes

Table A1 (cont.)

Peksen (2016a)	Effect of international economic sanctions on discriminatory practices against ethnic groups (panel data covering more than 900 ethnic groups over the period 1950-2003)	Binary indicators for economic discrimination and political discrimination against an ethnic group (data taken from Gurr 2000)	Binary economic sanction indicator, ordinal economic sanction indicator (0-3) accounting for the severity of sanctions, binary indicators for multilateral sanctions and sanctions with the aim of preventing human rights violations (data taken from Hufbauer et al. 2009)	Heckman-selection probit model that accounts for the fact that only ethnic groups with more than 100,000 people are included in the main dataset	Economic sanctions are associated with an increase in the level of economic and political discrimination against ethnic groups; the effect tends to increase with the severity of sanctions and is stronger for multilateral sanctions than for unilateral sanctions
Peksen (2016b)	Effect of international economic sanctions on private property and wealth (panel data covering countries over the period 1960-2005)	Contract intensive money (monetary aggregate M2 minus currency in circulation as a share of M2), country investment profile taken from the International Country Risk Guide (Knack and Keefer 1995)	Binary indicators for partial economic sanctions vs. extensive sanctions, high-cost sanctions vs. low-cost sanctions, US sanctions vs. multilateral sanctions (data taken from Hufbauer et al. 2009)	Panel fixed-effects vector decomposition regression with AR(1) disturbances	Economic sanctions are associated with a decrease in contract intensive money and the country investment profile indicator; the effects tend to be larger for high-cost sanctions and extensive sanctions

Table A1 (cont.)

Peksen (2009)	Effect of international economic sanctions on physical integrity rights (panel data covering 95 countries over the period 1981-2000)	Extrajudicial killings, disappearances, political imprisonment, torture (all data taken from Cingranelli and Richards 2010), political terror scale (data taken from Gibney et al. 2016)	Ordinal economic sanction indicator (0-2) accounting for the severity of sanctions, binary indicators for unilateral vs. multilateral economic sanctions, as well as sanctions with vs. without the aim of preventing human rights violations (data taken from Hufbauer et al. 2009)	Pooled ordered probit regression	Economic sanctions are associated with more human rights violations (i.e., an increase in each of the four human rights indicators); the effect tends to be stronger for multilateral sanctions and for sanctions that aim at preventing human rights violations
Peksen and Drury (2010)	Effect of international economic sanctions on the level of democracy (panel data covering 102 countries over the period 1972-2000)	Freedom House (2014) index of political rights and civil liberties	Binary economic sanction indicator, ordinal sanction indicator (0-2) accounting for the severity of sanctions, count variable indicating the duration of sanctions (data taken from Hufbauer et al. 2009 and from Morgan et al. 2014)	Panel fixed-effects vector decomposition regression	Economic sanctions are associated with a decrease in political rights and civil liberties; the effect is stronger for extensive sanctions than for limited sanctions and decreases with the number of years sanctions are in place
Pond (2015)	Effect of international economic sanctions on protectionism (panel data covering the period 1988-2012)	Average tariff rate (data taken from the World Bank's World Development Indicators)	Binary trade sanction indicator, number of trade sanctions in place in a given target country-year (data taken from Morgan et al. 2014)	Pooled OLS regression, FGLS regression, autoregressive distributed lag model	Number of trade sanctions in place is associated with an increase in the average tariff rate

Table A1 (cont.)

Soest and Wahman (2015a)	Effect of UN, US, and EU economic sanctions on the level of democracy (panel data covering 117 authoritarian countries over the period 1990-2010)	Democracy measure combining the Freedom House (2014) index for political and civil rights and polity2 by Marshall et al. (2016)	Separate binary indicators for economic sanctions with the aim of promoting democratization, peace, preventing human rights violations, fighting terrorism, and other sanctions (data taken from Hufbauer et al. 2009)	Pooled OLS regression	Economic sanctions aiming at promoting democratization are associated with an increase in the level of democracy; other sanction types do not have a significant effect
Wood (2008)	Effect of UN and US economic sanctions on human rights (panel data covering 157 countries over the period 1976-2001)	Political terror scale (data taken from Gibney et al. 2016)	Ordinal indicators (0-3) for UN and US economic sanctions accounting for the severity of sanctions (data taken from Hufbauer et al. 2009)	Pooled ordered probit regression	UN and US economic sanctions are associated with an increase in political repression; the effect is stronger for UN sanctions than for US sanctions and increasing with the severity of sanctions

Table A2: List of Countries in Sample

Albania (16/0), Algeria (21/0), Argentina (27/0), Australia (28/0), Austria (29/0), Bahrain (26/0), Bangladesh (29/0), Belgium (14/0), Benin (11/0), Bolivia (18/0), Botswana (26/0), Brazil (27/2), Bulgaria (21/0), Burundi (11/0), Cameroon (20/1), Canada (29/0), Central African Republic (6/3), Chad (11/0), Chile (16/8), China (14/12), Colombia (22/3), Congo (21/0), Costa Rica (29/0), Croatia (16/0), Cyprus (26/0), Democratic Republic Congo (14/0), Denmark (29/0), Dominican Republic (27/0), Ecuador (24/5), Egypt (29/0), El Salvador (20/6), Estonia (16/0), Fiji (10/6), Finland (29/0), France (29/0), Gabon (11/0), Germany (29/0), Ghana (25/0), Greece (29/0), Guatemala (11/16), Guinea-Bissau (8/2), Guyana (11/0), Haiti (5/6), Honduras (20/1), Hungary (26/0), India (24/3), Indonesia (20/9), Iran (0/24), Ireland (29/0), Israel (28/1), Italy (29/0), Jamaica (29/0), Japan (29/0), Jordan (24/5), Kenya (25/4), Kuwait (20/0), Latvia (16/0), Lithuania (16/0), Luxembourg (14/0), Madagascar (26/0), Malawi (27/2), Malaysia (28/0), Mali (29/0), Mauritius (26/0), Mexico (29/0), Morocco (29/0), Myanmar (3/23), Namibia (17/0), Nepal (11/0), Netherlands (29/0), New Zealand (29/0), Nicaragua (16/10), Niger (9/0), Nigeria (21/8), Norway (29/0), Oman (26/0), Pakistan (11/18), Panama (25/4), Papua New Guinea (26/0), Paraguay (20/1), Peru (24/5), Philippines (27/0), Poland (22/2), Portugal (29/0), Romania (18/3), Russia (16/0), Senegal (29/0), Sierra Leone (19/0), Singapore (29/0), Slovakia (16/0), Slovenia (16/0), South Africa (15/1), South Korea (21/0), Spain (29/0), Sri Lanka (29/0), Sweden (29/0), Switzerland (10/0), Syria (3/25), Thailand (27/2), Togo (11/0), Trinidad and Tobago (29/0), Tunisia (28/0), Turkey (29/0), Uganda (20/0), Ukraine (16/0), United Arab Emirates (11/0), United Kingdom (29/0), Uruguay (29/0), Venezuela (27/0), Zambia (26/3), Zimbabwe (11/11) .

Notes: The first figure in parentheses indicates the number of non-sanctioned observations for a particular country; the second figure indicates the number of years with US sanctions against that country in place.

Table A3: Variable Definitions and Sources

Basic Human Rights, Economic Rights, Emancipatory Rights, Political Rights. Principal component scores predicted after varimax rotation of a matrix with Kaiser normalized rows resulting from 19 rights indicators, standardized to mean of 0 and standard deviation of 1. *Source*: Gutmann and Voigt (2015). Original data are taken from the CIRI Human Rights Data Project, the Fraser Institute's Economic Freedom of the World Project, and Freedom House's Freedom in the World Report.

Log Real GDP/Capita. Natural logarithm of real GDP per capita in 2005 US dollars. *Source*: United Nations.

Real GDP/Capita Growth. First difference of natural logarithm of real GDP per capita in 2005 US dollars. *Source*: United Nations.

Log Population. Natural logarithm of total population size. *Source*: United Nations.

Openness. Sum of exports and imports over GDP. *Source*: United Nations.

Trade with the US. Sum of exports to the US and imports from the US, expressed as percentage of GDP. *Source*: IMF.

Log Economic Aid/Capita. Economic aid per capita from the US, log plus one transformation. *Source*: USAID.

Log Military Aid/Capita. Military aid per capita from the US, log plus one transformation. *Source*: USAID.

Log FDI/Capita. Foreign direct investment per capita from the US, log plus one transformation. *Source*: Bureau of Economic Analysis.

Polity2. Polity scale variable; ranges from strongly democratic (+10) to strongly autocratic (–10). *Source*: Marshall et al. (2016).

Table A3 (cont.)

Major Conflicts. Interstate armed conflict or internal armed conflict with or without intervention from other states resulting in at least 1000 battle-related deaths in a given year. *Source*: Gleditsch et al. (2002).

Minor Conflicts. Interstate armed conflict or internal armed conflict with or without intervention from other states resulting in between 25 and 999 battle-related deaths in a given year. *Source*: Gleditsch et al. (2002).

US Sanctions. As defined in Table 1. *Source*: Wood (2008), Hufbauer et al. (2009), Neuenkirch and Neumeier (2015).

Geographical Distance from US. Distance of the target country's capital from Washington, D.C. in logs of 1,000 kilometers, standardized to mean of 0 and standard deviation of 1. *Source*: Gleditsch and Ward (2001).

Genetic Distance from US. Indicator of genetic distance in logs, standardized to mean of 0 and standard deviation of 1. *Source*: Spolaore and Wacziarg (2009).

Voting Distance from US. Distance of the target country's voting in the UN General Assembly (UNGA) from US votes in logs, based on a dynamic ordinal spatial model, standardized to mean of 0 and standard deviation of 1. *Source*: Bailey et al. (2017).

Table A4: Descriptive Statistics

	Mean	Std. Dev.	Min	Max
Basic Human Rights	0.00	1.00	–2.43	1.57
Economic Rights	0.00	1.00	–3.05	1.94
Emancipatory Rights	0.00	1.00	–2.62	2.49
Political Rights	0.00	1.00	–2.52	1.30
Lag(Log Real GDP/Capita)	8.22	1.57	4.32	11.39
Lag(Real GDP/Capita Growth)	2.02	4.57	–39.23	59.47
Lag(Log Population)	16.38	1.51	12.95	21.03
Lag(Openness)	74.99	49.00	0.18	444.10
Lag(Trade with the US)	8.98	11.32	0.00	80.30
Lag(Log Economic Aid/Capita)	1.10	1.24	0.00	6.81
Lag(Log Military Aid/Capita)	0.48	1.03	0.00	6.77
Lag(Log FDI/Capita)	3.95	2.73	0.00	13.26
Polity2	4.59	6.33	–10.00	10.00
Log(Geographical Distance from US)	0.00	1.00	–4.41	1.48
Log(Genetic Distance from US)	0.00	1.00	–1.51	1.78
Log(Voting Distance from US)	0.00	1.00	–8.91	1.55

	Freq. (X = 1)
US Sanctions	235
… Unilateral	133
… Multilateral	102
… Against Democracies	40
… Against Non-Democracies	195
… Low Costs to Target	129
… High Costs to Target	76
… 1 – 5 Years	91
… 6 – 10 Years	58
… 11 Years +	86
Minor Conflicts	374
Major Conflicts	105

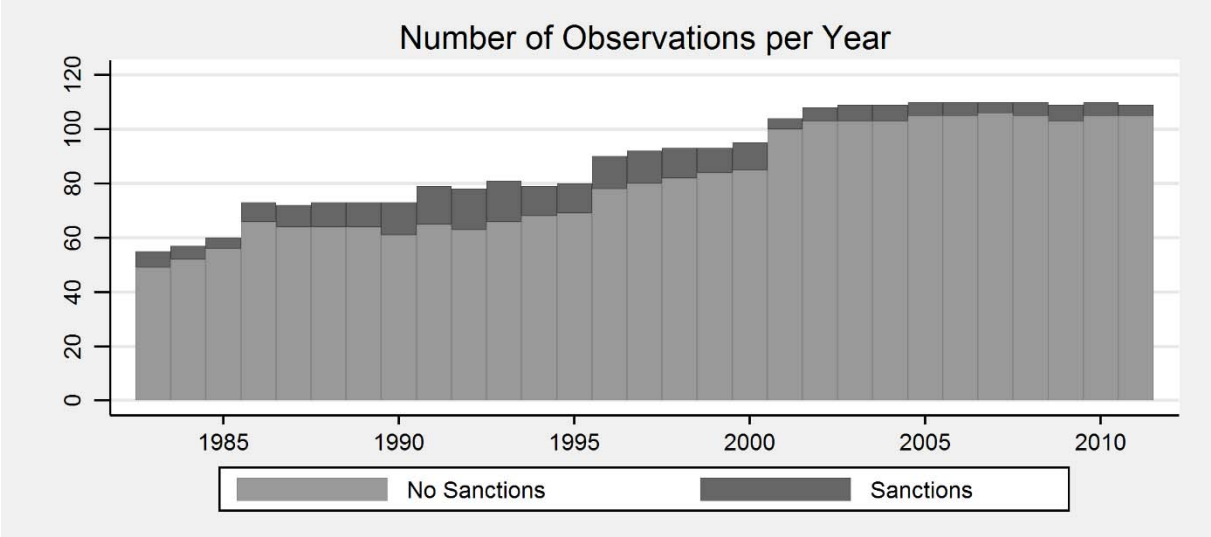
Notes: Number of observations: 2,594. In case of both costs to target indicators, the number of observations is 2,564 as the dataset by Hufbauer et al. (2009) does not contain all sanction episodes in our sample.

Table A5: Results of the Selection Model

	Coefficients		**Marginal Effects**	
	Coef.	Std. Err.	Marg. Eff.	Std. Err.
Log(Geographical Distance from US)	–0.1895*	(0.0828)	–0.0181*	(0.0079)
Log(Genetic Distance from US)	–0.2619**	(0.0793)	–0.0250**	(0.0075)
Log(Voting Distance from US)	–0.1112	(0.1117)	–0.0106	(0.0106)
Lag Basic Human Rights	–0.5855**	(0.0755)	–0.0559**	(0.0070)
Lag Economic Rights	–0.2993**	(0.0859)	–0.0285**	(0.0081)
Lag Emancipatory Rights	–0.0741	(0.0763)	–0.0071	(0.0073)
Lag Political Rights	–0.8153**	(0.0989)	–0.0778**	(0.0091)
Lag(Log Real GDP/Capita)	–0.0905	(0.0774)	–0.0086	(0.0074)
Lag(Real GDP/Capita Growth)	–0.0087	(0.0091)	–0.0008	(0.0009)
Lag(Log Population)	–0.1173*	(0.0477)	–0.0112*	(0.0045)
Lag(Openness)	–0.0047*	(0.0021)	–0.0005*	(0.0002)
Lag(Trade with the US)	0.0051	(0.0067)	0.0005	(0.0006)
Lag(Log Economic Aid/Capita)	0.1277*	(0.0639)	0.0122*	(0.0061)
Lag(Log Military Aid/Capita)	–0.3076**	(0.0752)	–0.0293**	(0.0071)
Lag(Log FDI/Capita)	0.0399	(0.0365)	0.0038	(0.0035)
Polity2	0.0092	(0.0129)	0.0009	(0.0012)
Minor Conflict	–0.2124	(0.1284)	–0.0203	(0.0122)
Major Conflict	–0.8490**	(0.2114)	–0.0810**	(0.0200)
Constant	0.4849	(1.1713)	–––	
President-Fixed Effects	Yes			
Observations	2594			
Pseudo R^2	0.44			
Chi^2 Test Instruments	19.82**			

Notes: Table shows the coefficients and average marginal effects of an estimation of the selection model (Equation (3)) without a simultaneous estimation of the outcome model (Equation (2)). Standard errors are in parentheses. Number of observations: 2,594.

Figure A1: Number of Observations in Sample



Note: Figure shows the number of observations for non-sanctioned and sanctioned countries over time.