Dream of Californication

-

Trade, Human Rights and the California Effect

Jonathan Bothner[ab] and Tim Röthel[ac]

Abstract: For decades, a narrative dominating public discourse in many Western countries suggested that trade with countries with a lower level of institutional quality could induce democratic change and good governance. One potential explanation for a change in the institutions in exporting countries is the so-called "California effect". However, developments in countries like Russia or China have led to disappointment regarding this hypothesis. Whether this disappointment is justified or only based on anecdotal evidence remains. In this article, we examine human rights spillovers through trade. We focus on the California effect of human rights in developed importing countries on the standards in developing exporting countries. Our sample includes 173 countries and covers the time period from 2000 to 2019. For four 5-year cross-sections, we estimate a spatial lag model by applying the generalized spatial two-stage least squares estimator using trade flows to construct the relevant weighting matrices. The results indicate positive human rights spillovers through trade and seem to be driven by spillovers from OECD to non-OECD countries, especially through trade in non-resource sectors. Our findings suggest the existence of the California effect and thus provide evidence contrasting the public opinion.

Keywords:

JEL classification:

Declarations of interest: none.

[a]University of Bayreuth, Universitätsstraße 30, 95447 Bayreuth, Germany.
[b]Phone: +49 921 55 6047; Email: jonathan.bothner@uni-bayreuth.de.
[c]Phone: +49 921 55 6223; Email: tim.roethel@uni-bayreuth.de.

1 Introduction

Recent geopolitical events have led to a public condemnation of long-believed narratives. In Germany, one such narrative is called "Wandel durch Handel" or change through trade (Bahr, 1963; Moens, 2022; The Economist, 2022). This idea stems from the Cold War era, postulating that Western countries could induce democratic change in the Soviet Union through trade and cooperation instead of pure confrontation. After the fall of the iron curtain, the "Wandel durch Handel" idea lived on and until recently was often applied when discussing trade between Western countries and Russia. Initially, the idea was based on a speech held by German politician Egon Bahr (1963). One widespread interpretation of this idea was that if Europe imported Gas from Russia, this might have a positive effect on Russian institutions due to institutional spillover. Thus, when Russia invaded Ukraine in early 2022, many people in the West believed that this principle had failed (Deutsche Welle, 2022; Dodman, 2022; Strupczewski, 2022). One might conclude, somewhat pessimistically, that institutional spillovers via trade are at best small and at worst non-existent.

However, deriving this conclusion from a single experience, i.e., the Western European experience with Russia, could be considered eurocentric. What did not work with Russia in the past might still work in other constellations. To understand why a convergence of trading partners' institutions might occur or not, it is worthwhile to think about the mechanisms at play which may induce such a change. Countries or firms are often not put under pressure by other countries' governments but rather by non-governmental actors such as consumers, firms, or non-governmental organizations. Incidents like the Rana Plaza collapse in 2013 led to public outrage about workers' safety conditions in the textile industries, especially in lower-income countries (e.g. Chandran, 2016). Parts of the civil society often argue that Western countries should not buy products from lower-income countries in which human rights are not respected.[1] This may put pressure on these countries to improve their human rights standards in order for domestic firms to gain access to export opportunities. The outcome of this phenomenon is consistent with the "Wandel

[1] See for example https://www.business-humanrights.org/en/ or https://www.ethicalconsumer.org/ethicalcampaigns/boycotts.

durch Handel" narrative. It posits that human rights standards of countries in which these standards are high spill over to countries with low human rights standards if these are allowed to trade with them. That is, we can think of countries with low human rights standards as exporting goods and services to countries with high human rights standards and importing their regulations, values, or institutions. This is often referred to as the "California effect" Vogel (1997). In recent years, Western countries tried to push for such changes by introducing further regulation on supply chains (e.g. Bundesministerium der Justiz, 2021).

The hypothesis of the "California effect" hence proposes that change through trade occurs through exporting firms and their governments being pressured to adjust their human rights standards to the preferences of consumers, non-governmental organizations, and governments of importing countries in order to gain market access. This may explain why change through trade does not always "work": A high bargaining power of exporting firms and countries may undermine the "California effect". Hence the market structure of the goods and services being traded may determine whether convergence in human rights standards occurs through trade or not. Products such as oil and gas which are strategic resources for importing countries for which trading partners cannot be easily replaced can thus be expected to be less effective as a transmission vehicle of the "California effect" than others.

In this article, we intend to examine human rights spillovers through trade empirically. We try to answer three questions: First, do human rights in importing countries affect human rights in exporting countries? Second, do human rights in powerful importing countries affect human rights in less powerful exporting countries (California effect)? Third, is there a difference concerning the previous question when differentiating between resource and non-resource exports?

We start with a simple bilateral ordinary least squares (OLS) estimation, including an export-weighted average of human rights. Then, we apply the generalized spatial two-stage least squares (GS2SLS) estimator proposed by Badinger and Egger (2011) to estimate a spatial autoregressive (SAR) model with spatially dependent errors by applying the generalized spatial two-stage least squares estimator. We try to overcome the problem

of an endogenous weighting matrix by applying the control function approach by Qu, Lee, and Yang (2021).

This article contributes to the literature in several ways. While the international diffusion of human rights via trade flows has been studied before (e.g. Cao, Greenhill, & Prakash, 2013), there are various characteristics which make our approach unique. To the best of our knowledge, this is the first study which examines spillovers which are expected under the hypothesis of the "California effect" in particular. We do so by splitting up the weighting matrix of interest into two matrices, one containing trade flows relevant for the "California effect" and one containing all other trade flows. In previous studies two additional problems arose. Often spatial studies only include a small fraction of countries and only one weighting matrix accounting for spatial dependence. In this article, we include up to 173 countries in our sample and we simultaneously control for several weighting matrices, thus limiting the endogeneity problem. Further, we apply the recent approach by Qu et al. (2021) to deal with endogenous weighting matrices.

Our results provide evidence for the existence of spillovers of human rights through trade. Moreover, when estimating the California effect, we find significant and positive effects. However, the effects are only significant from 2010 onwards. They remain significant when adding additional weighting matrices and when applying the control function approach. Our extensions concerning the differentiation of resource and non-resource exports provide similar results. The California effect for non-resource exports is significant and positive. Interestingly, we also find evidence for the California effect when looking at resource exports.

The remainder of this paper is structured as follows: Section 2 provides an overview of the effect of trade on human rights in general, an introduction to the California effect, and other spatial approaches in the field of human rights. In section 3, the empirical specification is introduced, the data is briefly described. Also, origins of and solutions to potential issues of endogeneity are discussed. Section 4 presents the results with respect to the hypotheses formulated and section 5 extends our approach to resource exports and a different groupings of countries. Section 6 summarizes the results and concludes.

2 Literature Review

We start our literature review rather broadly by looking at the relationship between institutions and trade in general. This literature is important since it provides insights about the general effect of trade relationships between countries. Several empirical studies find a positive link between trade openness and democracy (Liu & Ornelas, 2014; López-Córdova & Meissner, 2008). Proponents of such a positive link often do not argue for a direct effect of trade on democratization, but rather hypothesize an indirect link between the two (López-Córdova & Meissner, 2008). One such indirect link is proposed to be economic growth, with international trade leading to increased growth (Alcala & Ciccone, 2004; Feyrer, 2019; Frankel & Romer, 1999), which in turn fosters democratization and institutional development (Barro, 1999; Heid, Langer, & Larch, 2012; Lipset, 1959). A second variable which may provide a channel for an indirect effect of trade on institutional development is income inequality. According to Acemoglu and Robinson (2000) democratization can work as a commitment device for elites to give the prospect of future redistribution efforts, in order to prevent social unrest in the face of rising inequality. By affecting income inequality within countries due to Stolper-Samuelson effects, international trade can thus affect democratization (Acemoglu & Robinson, 2006). Liu and Ornelas (2014) further argue, that increased international trade through participation in free trade agreements reduces protectionist rents and thus reduces the incentive of autocratic groups to seek power in order to get a hold of them. Thus, the authors argue, free trade agreements can have a stabilizing effect on democracy.

Additionally, some studies look at the effect in the opposite direction, examining if trade is affected by democracy. Again, the literature provides evidence for a positive relationship between democracy and trade (Aidt & Gassebner, 2010; Milner & Kubota, 2005) and democracy and foreign direct investment (FDI) (Lacroix, Méon, & Sekkat, 2021).

While these studies examine the effect of trade on institutional development in general, they focus primarily on democratization and they do not examine heterogeneity in the effects depending on the trading partners. Such a heterogeneity would be expected if trade flows merely provide the vehicle for international spillovers of institutions to take place.

In this study we examine trade-induced international spillovers of institutions other than democracy. Specifically, we look at human rights standards. Thus, we will now examine the literature on policy diffusion in more detail. Dobbin, Simmons, and Garrett (2007) provide an introduction to different theories of policy diffusion from a social science point of view. They compare constructivism, coercion theory, competition theory, and learning theory and provide detailed explanations of each of the theories. Our argument in this article will be most closely related to constructivism. Cao et al. (2013) provide an intuitive explanation for the international diffusion of human rights standards through trade. They base their argument on insights by Vogel (1997) regarding the geographic spread of regulation standards.

Vogel (1997), who examines the diffusion of environmental standards within the United States (US), describes two opposing scenarios of how trade and regulation could affect each other. First, regulation could lead to costly and complicated processes, which makes products uncompetitive on the world market. Thus, a country would need to lower its standards in order to be competitive again. If other countries respond to this lowering of standards, we could end up in a downward spiral, or race to the bottom. This race to the bottom is also known as the "Delaware effect" since Delaware was well-known for having a very low standard of corporate chartering law. Second, countries could instead introduce higher standards for their domestic markets, making market access for foreign firms or products subject to adherence to these standards. Vogel (1997) adds that, in general, producers favor similar regulations across countries since this lowers their production cost. The European Union (EU), for example, adopted German car emission regulation in the 1980s. They did not only choose the German regulations since Germany is the largest car exporter in Europe but also since the German regulation was similar to the one in the US, which was one of the most important export destinations back then. This phenomenon, that exporting countries align their regulation to export destinations with stricter regulation, is called the "California effect". The name stems from the example of California which had the highest environmental standards among the US states. Instead of imposing lower standards, many other states followed California by setting standards of the same level as California. Vogel (1997) identifies three mechanisms which lead to the

California effect: First, stricter regulation may be a competitive advantage for domestic firms in potential export destinations as it serves as a trade barrier for foreign competitors. Thus, domestic firms will be in favor of such regulation and foreign firms seeking to gain market access may lobby their respective governments to align the regulation. Second, richer countries with higher standards restrict foreign firms' market access to the adherence to these standards. If foreign firms follow these stricter standards, foreign standards might increase as well. Third, free trade negotiations might be a tool for richer nations to pressure their counterparts into adopting higher standards. The question remains if the empirical literature supports the California effect or the Delaware effect.

The literature on spillovers of institutions through trade or trade-based diffusion mainly focuses on labor market regulation, democratic governance, liberalization and women's empowerment. Bernauer and Caduff (2004) directly provide support for the argument made by Vogel (1997). They argue that environmental regulation has become stricter since the 70s and that this has been forced by large green jurisdictions as trading partners. A large fraction of studies focuses on labor market regulation. Drezner (2001) provides an overview of studies examining the effect of globalization on labor standards. Overall, he does not find conclusive evidence for a race to the bottom but rather positive effects of globalization on labor standards. This positive evidence is also supported with respect to FDI stocks and flows (Messerschmidt & Janz, 2023; Mosley & Uno, 2007). Additionally, trade seems to be positively related to a lower level of child labor (Davies & Voy, 2009; Neumayer & de Soysa, 2005). However, Lim and Prakash (2017) show that worker safety in the global south is affected by economic conditions in their exports markets in the global north. Greenhill, Mosley, and Prakash (2009) find that strong legal protection of labor rights in the importing country is associated with relatively stronger labor rights in the partner country. This is in line with the hypothesis of Vogel (1997). Other strands of the literature look at the spillover of democracy (e.g. Doces & Magee, 2015; Gleditsch & Ward, 2006; Simmons & Elkins, 2004) or women's rights (e.g. Neumayer & de Soysa, 2007; Potrafke & Ursprung, 2012). The effects of trade and globalization are largely positive. Another related debate discusses the effect of trade between developed and developing countries on women's wages and employment (Berik, van der Rodgers, &

Zveglich, 2004; Kucera & Milberg, 2000; Oostendorp, 2009; Wood, 1991).

In order to examine spillover of human rights through trade, we will next examine the study by Cao et al. (2013) who extend the argument of Vogel (1997) to the case of human rights. They argue that stakeholders, non-governmental organizations, trade unions and consumer groups in exporting countries might pressure firms and the government in exporting countries to push for improvements of human rights in importing countries. Additionally, exporting firms might be concerned to lose access to foreign markets if human rights standards in their countries diverge too far from human rights standards in their export destinations. Thus, these firms will also lobby the government in the exporting countries to increase the human rights standards. The findings of Peterson, Murdie, and Asal (2018) support this argument. If countries abuse human rights and human rights organizations shame this abuse, then this will lead to relatively lower exports. However, it will not affect exports if importers have a similar level of human rights abuse.

The empirical examination of trade induced human rights spillovers has been the aim of earlier research. Cao et al. (2013) conduct an empirical analysis to find support for their hypothesis of human rights spilling over to trade partners in accordance with the California effect. They use the physical integrity rights index by Cingranelli, Richards, and Clay (2021) to measure the adherence to human rights standards within countries and examine how a trade weighted average of human rights in trading partners affects human rights at home. Our approach differs from that of Cao et al. (2013): While the approach of Cao et al. (2013) is appropriate to examine the existence of human rights spillovers via trade overall, it cannot answer the question of whether the spillovers actually occur between those groups of countries between which one would expect them in accordance with the California effect. That is, the approach does not allow for a separate examination of human rights spillovers from importing countries with high human rights to exporting countries with low human rights standards. Our study aims at addressing this shortcoming through the construction of differentiated weighting matrices which are simultaneously included in the spatial regression. This is one of our key contributions to the literature. Similarly, Neumayer and de Soysa (2011) examine the effect of a spatially lagged women's rights indicator on women's rights to analyze women's rights spillovers

through trade. They too, however, do not differentiate different country groups when it comes to the spillovers. Another difference between our study and that of Cao et al. (2013) is the data on human rights used for the analysis. The physical integrity rights index by Cingranelli et al. (2021) which Cao et al. (2013) use measures human rights adherence on an ordinal scale ranging from 0 to 3. In this study, we use a human rights measure from the v-dem dataset by Coppedge et al. (2023b) and Pemstein et al. (2023) which has the advantage of being more precise than the measure by Cingranelli et al. (2021).

Several studies use spatial econometric approaches in order to capture potential spillovers between countries or regions. Prominent examples can be found in the literature on the determinants of economic growth. Ho, Wang, and Yu (2013) and Amidi and Fagheh Majidi (2020), for example, use trade flows to examine spatial dependence of the gross domestic product (GDP). However, in this article, we will focus on spillovers of human rights. Bell, Clay, and Murdie (2012) analyze the spillover effects of international human rights organizations on neighboring countries. They find positive effects on the level of human rights of the neighboring country if countries share the same border and if members of the human rights organizations can move across the border. Similarly, Kopstein and Reilly (2000) analyse the transformation of former communist countries. They identify the distance to non-communist countries as one of the leading factors of transformation. Chyzh (2016) examines spillovers of rule of law across countries. They find that both contiguity and shared membership in an international organization (IO) lead to positive spillover effects when estimated separately. However, when both weighting matrices are used in the same specification the effect of IO membership dominates the common border effect. Goderis and Versteeg (2014) analyze the diffusion of constitutional rights among countries. They find that spillovers occur through shared characteristics of countries, such as a common colonizer, a common legal origin, a common religion, or the same aid donor. Edwards, Kernohan, Landman, and Nessa (2018) estimate the effect of human rights spillovers using distance as the transmission mechanism. They find positive spillovers among all countries in their sample. Faber and Gerritse (2017), on the other hand, do not find evidence of human rights spillovers using inverse distances as spatial weights in a

panel setting. Regarding spatial spillovers of institutional quality, the empirical evidence is similarly inconclusive with Faber and Gerritse (2012) and Kelejian, Murrell, and Shepotylo (2013) finding positive geographic spillovers across countries whereas Claeys and Manca (2011) do not find such an effect. Naveed, Ahmad, Naz, and Zhuparova (2023) find spatial dependence in women's rights standards for neighboring countries. Greenhill (2010) finds positive human rights spillovers between members of intergovernmental organizations.

Overall, our main contribution to the literature is the following: To the best of our knowledge, this is the first study examining spillovers expected under the "California effect" in a proper way. Previous studies have often not examined spillovers between country groups separately but overall. We do so by splitting up the relevant weighting matrix into two matrices. This allows us to examine exports from countries with relatively low human rights to countries with relatively high human rights as a potential channel of human rights spillovers.

3 Empirical Framework

We conduct four cross-section analyses for the time periods 2000–2004, 2005–2009, 2010–2014, and 2015–2019. Each cross-section includes up to 173 countries. Throughout the study, we estimate several variations of the following spatial autoregressive model:

$$y_i = \sum_{q=1}^{s} (\rho_q \sum W_{qij} y_j) + X_i \beta + \epsilon_i, \tag{1}$$

$$\epsilon_i = \sum_{r=1}^{t} (\theta_r \sum W_{rij} u_i) + \mu_i \tag{2}$$

The dependent variable y_i indicates a measure of human rights in country i. $\sum W_{qij} y_j$ is a spatial lag of the dependent variable. It is a linear combination of the values of the dependent variable in all countries in the sample. The elements W_{qij} assign a spatial weight to each country pair ij, describing the spatial dependence relation in the dependent

variable between the respective countries (Lesage & Pace, 2009). We allow for higher order spatial dependence in the dependent variable. That is, depending on the model specification, we control for multiple spatial lags of the dependent variable simultaneously with s ranging from one to seven. X_i is a vector of control variables, which includes an intercept. ϵ_i indicates the error term for country i, which we allow to be spatially dependent. Again, depending on the model specification, we allow for the simultaneous inclusion of multiple error lags $W_{rij}u_i$. The parameters to be estimated are ρ_q, β, and θ_r with the estimates of ρ_q being of primary interest in this study. A positive ρ_q indicates an overall positive spatial dependence in the dependent variable between countries in accordance with the weights W_{qij}.

In matrix notation, the model to be estimated can be expressed in the following form:

$$y = \sum_{q=1}^{s}(\rho_q W_q y) + X\beta + \epsilon, \tag{3}$$

$$\epsilon = \sum_{r=1}^{t}(\theta_r W_r u) + \mu. \tag{4}$$

With N denoting the number of individuals and K denoting the number of controls, including the intercept, other than the spatial lags, y and ϵ are $N \times 1$ vectors, W_q and W_r are $N \times N$ matrices, and X is an $N \times K$ matrix. The model expressed by equations (3) and (4) is equivalent to the model in equations (1) and (2).

Data

As a proxy for human rights, we use the Civil Liberties Index from the Varieties of Democracy (V-Dem) dataset by Coppedge et al. (2023b) and Pemstein et al. (2023). This index measures the extent to which civil liberty is respected in a given country. It is constructed as the average of three sub-indices measuring freedom from physical violence committed by the state, private liberties, and political liberties, respectively (Coppedge et al., 2023a). The country-specific control variables include the natural logarithm of GDP per capita in constant US Dollars (USD), the natural logarithm of the population size, as well as

the squares of the two variables to account for potential non-linear relationships between economic development or country size and human rights. Since there is evidence that a country's openness to trade and FDI may affect its institutions and the respect for civil and political rights (Hafner-Burton, 2005; López-Córdova & Meissner, 2008; Neumayer & de Soysa, 2011), we also control for trade openness, measured as the sum of exports and imports as a percentage of GDP, and for FDI inflows as a percentage of GDP. The data on GDP per capita stem from the World Development Indicators (WDI) database of the World Bank (2023). The data on population size stem from the Dynamic Gravity Dataset (DGD) by Gurevich and Herman (2018). We construct the variable measuring trade openness using export and import data from the International Trade and Production Database for Estimation (ITPD-E) by Borchert, Larch, Shikher, and Yotov (2021, 2022) and data on nominal GDP from the WDI by the World Bank (2023). We aggregate all exports from a country to any other country and in any sector in the ITPD-E to obtain a country's total exports. We obtain a country's total imports analogously. The data on FDI inflows stem from the United Nations Conference on Trade an Development Statistics (UNCTADstat) data centre of the UNCTAD (2023). We also control for the Liberal Democracy index from the V-Dem dataset (Coppedge et al., 2023b; Pemstein et al., 2023). This index measures the extent to which individual and minority rights are protected against the tyranny of the state (Coppedge et al., 2023a).

The human rights in a country may be influenced by cultural traits such as the country's religious composition (Potrafke & Ursprung, 2012). To account for the possibility of a country's religious composition being a confounding factor, we control for the shares of the Christian and Muslim populations in the total population. The percentages of Christians and Muslims in the population are obtained from the Pew Research Center (2022). Due to limited data availability, the shares of Christians and Muslims are those from 2010 in all the cross sections.[1] Finally, we also control for a conflict variable, which indicates whether there is an ongoing armed conflict in a country in a given year. To construct this conflict variable, we use data from the Major Episodes of Political Violence (MEPV)

[1]There are no data on the religious composition of North Makedonia in the data from the Pew Research Center (2022). We use the shares of Christians and Muslims in North Makedonia in 2023, as reported by the World Factbook by the CIA (2023).

dataset from the Armed Conflict and Intervention Datasets by the Center for Systemic Peace (2022). Our conflict variable takes a value of one for a given country and year if there has been an episode of civil violence, civil warfare, ethnic violence, or ethnic warfare of any magnitude in the respective country and year and zero otherwise.[1] All variables are averaged over the respective five-year interval in each of the four cross-sections.

Examining the spatial dependence of human rights in cross-sectional analyses has the advantage that it allows us to control for multiple spatial lags in the dependent variable simultaneously and include multiple error lags. This allows us to address one potential source of endogeneity, as explained later in this section. This would not be possible in a panel setting as this would require too much computing power. Moreover, the informativeness of these cross-sectional analyses should not be underestimated. Lesage and Pace (2009) point out that there is a dynamic motivation for a cross-sectional spatial autoregressive model, which is the one we are interested in estimating. They show that the cross-sectional spatial autoregressive model can be interpreted as the outcome of a corresponding long-run equilibrium of a space-time lagged autoregressive process, with the dependent variable of individual i being influenced by the dependent variable of other individuals in the previous period.

As we are interested in examining spatial spillovers between countries, we are concerned about any incompleteness of our sample of countries. Not including a country in our sample is akin to constraining all spillovers from this country to the countries in our sample to be zero. If the spillovers are non-zero, this can lead to biased estimates of the spatial relation in the dependent variable, especially later when we examine spillovers from different isolated country groups. We thus try to obtain samples covering as many countries as possible in each cross-sectional analysis. We do so by imputing certain data, being careful only to fill out gaps in our data that can be easily filled without risking any inappropriate data manipulation. A detailed description of the imputation procedure can be found in the Appendix: Imputation.

Using these imputation techniques to fill out some gaps in our dataset, we can increase

[1]For a more detailed description of the data used to create the conflict variable, see the MEPV codebook by Marshall (2019).

the number of countries in our samples to 168 in the cross-section with the smallest sample and 173 in the cross-section with the largest sample. The summary statistics for all variables are shown in table 1.

Weighting matrices

The key to examining the nature of human rights spillovers is the specification of the weights in the spatial lags of the dependent variable, i.e. the elements W_{qij} in equation (1) or, equivalently, the matrices W_q in equation (3). Our first spatial weighting matrix of interest is constructed using the exports from country i to country j as a weight. This allows us to test our first hypothesis:

> $H1_1$*: Human rights in importing countries affect human rights in exporting countries.*

We apply row sum normalization so that each weight W_{ij} represents the share of exports from country i to country j in the total exports from country i. Thus, the spatial lag of the dependent variable takes the form $\sum \frac{exports_{ij}}{exports_i} y_j$ with $exports_{ij}$ indicating the exports from country i to country j and $exports_i$ indicating total exports from country i. In matrix notation, the spatial weighting matrix of interest W_{exp} thus takes the following form, with N being the number of countries in the respective cross-section:

$$W_{exp} = \begin{pmatrix} 0 & Ex_{1,2} & Ex_{1,3} & Ex_{1,4} & ... & Ex_{1,N} \\ Ex_{2,1} & 0 & Ex_{2,3} & Ex_{2,4} & ... & Ex_{2,N} \\ Ex_{3,1} & Ex_{3,2} & 0 & Ex_{3,4} & ... & Ex_{3,N} \\ Ex_{4,1} & Ex_{4,2} & Ex_{4,3} & 0 & ... & Ex_{4,N} \\ ... & ... & ... & ... & ... & ... \\ Ex_{N,1} & Ex_{N,2} & Ex_{N,3} & Ex_{N,4} & ... & 0 \end{pmatrix}$$

Here, $Ex_{i,j}$ indicates the yearly exports from country i to country j, averaged over the period of the respective cross-section. The data on bilateral exports used to construct this weighting matrix stem from the ITPD-E by Borchert et al. (2021, 2022). This is a highly comprehensive dataset that includes data on bilateral exports for 265 countries in

170 industries across the sectors of agriculture, mining and energy, manufacturing, and services over the time period from 2000 until 2019. We construct the total exports for a given country pair by summing up the exports in all sectors for the respective country pair. The spatial weights described above are appropriate to examine whether there are spillovers from importing to exporting countries overall. That is, the weighting matrix does not make any differentiation in the weights based on other characteristics of the exporters and importers. In accordance with the California effect, however, we would not expect human rights spillovers to occur from importers to exporters across the board. We would specifically expect human rights to spill over from importing countries with large market sizes and high human rights standards to exporting countries with small market sizes and lower human rights standards. This leads us to our second hypothesis:

> *$H1_2$: Human rights in powerful importing countries affect human rights in less powerful exporting countries.*

To be able to examine this specific spillover, we use Organisation for Economic Co-operation and Development (OECD) membership as a proxy for being a 'powerful' country, i.e. a country with a large market size. In contrast, we proxy small market size with not being an OECD member. Next, we decompose the spatial lag described above into two separate spatial lags. Our spatial weighting matrix of interest, W_{Cali}, uses the exports from country i to country j as a share of country i's total exports as weights, as described above. However, unlike in the spatial lag described above, all weights not corresponding to exports from non-OECD countries to OECD countries are set to zero. We then construct another complementary spatial weighting matrix W_{Other}, in which the exports from non-OECD countries to OECD countries are set to zero, and all the other bilateral exports are included as weights. In matrix notation, these spatial weighting matrices thus can be thought of as follows, with i and j being OECD countries and k and l being non-OECD countries in this exemplary representation:

$$W_{Cali} = \begin{pmatrix} 0 & 0 & 0 & 0 & ... \\ 0 & 0 & 0 & 0 & ... \\ Ex_{k,i} & Ex_{k,j} & 0 & 0 & ... \\ Ex_{l,i} & Ex_{l,j} & 0 & 0 & ... \\ ... & ... & ... & ... & ... \end{pmatrix} \quad W_{Other} = \begin{pmatrix} 0 & Ex_{i,j} & Ex_{i,k} & Ex_{j,l} & ... \\ Ex_{j,i} & 0 & Ex_{j,k} & Ex_{j,l} & ... \\ 0 & 0 & 0 & Ex_{k,l} & ... \\ 0 & 0 & Ex_{l,k} & 0 & ... \\ ... & ... & ... & ... & ... \end{pmatrix}$$

Since in each cross-section, every country is either an OECD country or a non-OECD country, the sum of the two matrices W_{Cali} and W_{Other} is equal to the matrix using all exports as weights, W_{exp}, in each cross section. By simultaneously controlling for both spatial lags of the dependent variable in each cross-sectional analysis, we can examine human rights spillovers from importing OECD countries to exporting non-OECD countries in isolation.

We also examine whether the manifestation of the California effect depends on the type of good being exported. Specifically, we differentiate between oil and gas exports and non-oil-and-gas exports. Natural resources like oil and gas can only be imported from countries that are endowed with these natural resources due to geographical conditions. Oil and gas are also strategic resources that importing countries need for their general supply and are costly to substitute. Hence, it is plausible that exports of oil and gas are associated with more bargaining power on the part of the exporter relative to exports of other goods, which might undermine the California effect. We thus formulate a third hypothesis to be tested:

> *$H1_3$: Human rights in powerful importing countries affect human rights in less powerful exporting countries through non-oil-and-gas exports.*

To do so, we further split up the matrices W_{Cali} and W_{Other} into two matrices each, one only using oil and gas exports between i and j as a share of i's total exports as weights and one only using the shares of non-oil-and-gas exports as weights. We use sectoral bilateral export data from the ITPD-E by Borchert et al. (2021, 2022) to make this differentiation. To construct the matrices weighting the spatial dependence in the dependent variable by oil and gas exports, we only use aggregate exports in the sectors "extraction of crude

petroleum and natural gas", "gas production and distribution", and "refined petroleum products". Conversely, we use aggregate exports in all sectors except for these three to construct the non-oil-and-gas exports weighting matrices.

In each cross-section we allow for spatial dependence in the disturbances in accordance with one or more weighting matrices, as indicated by equations (2) and (4). To choose the spatial weighting matrices determining the spatial dependence in the disturbances, we conduct Moran's I test of spatial dependence in the residuals. That is, we first estimate the model expressed by equations (1) and (3) without controlling for a spatially lagged dependent variable, using OLS. We then run the Moran test, testing for spatial dependence in the residuals in accordance with each of the spatial weighting matrices, which are to be used to construct the spatial lags of the dependent variable in the respective specification. Whenever we reject the null hypothesis of the residuals being independent and identically distributed at the 10 percent level, we include an error lag using the weighting matrix for which the null is rejected in the respective model.

Identification

We face three potential issues of endogeneity. The first endogeneity problem results from the spatial autoregressive structure of our model. The spatial lags of the dependent variables in equations (1) and (3) are endogenous. Hence, the OLS estimator is inconsistent (Anselin, 1988; Ord, 1975). This endogeneity issue arises because equations (1) and (3) imply that the dependent variable in country i is not only determined by the values of the dependent variable in country j but also vice-versa. This leads to a simultaneous equation bias if estimated using OLS. We address this issue by applying the GS2SLS estimator derived by Badinger and Egger (2011) and Prucha, Drukker, and Egger (2019). This estimator is based on the GS2SLS estimator proposed by Kelejian and Prucha (1998, 1999, 2004, 2010) but it allows for higher-order spatial lags of the dependent variable. Since we control for more than one spatial lag of the dependent variable in our spatial regression, this estimator is appropriate for us to use.

To illustrate the idea of this estimator, let us follow Badinger and Egger (2011) – who

build upon the insights of Kelejian and Prucha (1998, 1999, 2004) – and rewrite equation (3) in reduced form as

$$y = (I - \sum_{q=1}^{s} \rho_q W_q)^{-1}(X\beta + \epsilon), \tag{5}$$

with I being the $N \times N$ identity matrix. Equation (5) implies a mean of y of

$$E[y] = (I - \sum_{q=1}^{s} \rho_q W_q)^{-1}(X\beta) \tag{6}$$

and hence

$$E[\sum_{q=1}^{s} W_q y] = \sum_{q=1}^{s} W_q (I - \sum_{q=1}^{s} \rho_q W_q)^{-1}(X\beta). \tag{7}$$

Assuming $\sum_{q=1}^{s} |\rho_q| < 1$ we can use

$$(I - \sum_{q=1}^{s} \rho_q W_q)^{-1} = I + \sum_{i=1}^{\infty} (\sum_{q=1}^{s} \rho_q W_q)^i \tag{8}$$

to rewrite equation (7) as

$$E[\sum_{q=1}^{s} W_q y] = \sum_{q=1}^{s} W_q [I + \sum_{i=1}^{\infty} (\sum_{q=1}^{s} \rho_q W_q)^i](X\beta). \tag{9}$$

Equation (9) suggests X and any of the terms in $\sum_{i=1}^{G} (\sum_{q=1}^{s} \rho_q W_q)^i X$ as instruments for $\sum_{q=1}^{s} W_q y$ in the GS2SLS estimation, with G being any constant (Badinger & Egger, 2011). We choose $G = 2$ as suggested by the Monte Carlo simulation of Kelejian and Prucha (2004).

A second endogeneity problem arises from the possibility of other relevant spillovers of human rights through channels that are correlated with trade flows, leading to omitted variable bias. We address this issue by controlling for three potential confounding spatial lags in each cross-sectional analysis. The first one accounts for the possibility of human rights spillovers generally occurring across borders. We thus construct a spatial weighting

matrix W_{Cont} in which the weight W_{ij} is assigned the value 1 if the countries i and j are contiguous and 0 otherwise.

The second spatial lag we control for is constructed using a spatial weighting matrix W_{Dist} in which the inverse geographical distances between countries serve as weights. Under row sum normalization, this spatial lag thus takes on the following form: $\sum(\frac{1}{distance_{ij}} / \sum \frac{1}{distance_i})y_j$.

For the third spatial lag, accounting for spillovers related to the cultural proximity of two countries, we use a spatial weighting matrix W_{Lang}, which is constructed using weights W_{ij}, which are given the value 1 if countries i and j share a common official language and a value of 0 if they do not. Partner countries j are thus only given a positive weight in this matrix if they share an official language with country i. Under row sum normalization, this weight of j will be larger if there are only few other countries that also share an official language with i. On the other hand, country j is given a smaller positive weight if it is one country out of many sharing an official language with country i. Similarly, in W_{Cont}, country j is given a larger positive weight if i and j are neighbors and country i has few other neighbors, and a lower positive weight if i and j are neighbors and i has many neighbors.

Lastly, a third endogeneity concern that arises when using trade flows as weights is the potential endogeneity of trade flows themselves and, thus, the endogeneity of the weighting matrix. There is literature suggesting that a country's institutions or human rights affect its trade policies or economic openness (e.g. Aidt & Gassebner, 2010; Blanton & Blanton, 2007; Milner & Kubota, 2005). It is plausible that the similarity of human rights standards between two countries causes these two countries to trade more with each other, thus resulting in a reverse causality issue regarding our estimation procedure. One way this endogeneity of the weighting matrix has been dealt with in the literature is simply using lagged values of trade flows when constructing the spatial weight matrix (e.g. Amidi & Fagheh Majidi, 2020). We address the endogeneity of the export weights using a more novel control function approach proposed by Qu et al. (2021) instead. To implement this approach, for each cross-section, we first estimate the following equation:

$$LogExports_{ij} = \alpha LogDistance_{ij} + \gamma Contiguity_{ij} + \theta Language_{ij} + \delta_{1i} + \delta_{2j} + \xi_{ij}, \quad (10)$$

That is, we first regress the natural logarithm of bilateral exports from i to j, $LogExports_{ij}$, on variables which we can safely assume to be exogenous. These are $LogDistance_{ij}$, which is the geographical distance between i and j, $Contiguity_{ij}$, which is a dummy variable indicating whether i and j share a common border, and $Language_{ij}$, a dummy variable indicating whether i and j share a common official language. As Qu et al. (2021) suggest, we control for the fixed effects δ_{1i} and δ_{2j}. These fixed effects capture exporter- and importer-specific multilateral resistance and thus other determinants of exports from i to j which may give rise to endogeneity in our estimations. We then estimate the model in equation (1) while controlling for the estimates on the multilateral resistance terms $\widehat{\eta_i}$:

$$y_i = \sum_{q=1}^{s} \rho_q \sum W_{qij} y_j + X_i \beta + \widehat{\eta_i} \lambda + \widehat{\epsilon_i}, \tag{11}$$

Here, $\widehat{\eta_i} = (\widehat{\delta_{1i}}, \widehat{\delta_{2i}})$, and $\widehat{\epsilon_i} = \epsilon_i + (\eta_i - \widehat{\eta_i})\lambda$. In other words, we pull potential unknown sources of endogeneity out of the error term by controlling for $\widehat{\eta_i}$.

4 Results

Before starting with the results, we need to test for a potential spatial correlation in the residuals. As described above, if we cannot reject the null hypothesis of spatial correlation at the 10 %-level using Moran's I test, we include an error lag for the respective weighting matrix. Table 2 presents the results.

We start with the simple OLS estimation in table 3. Columns 1 to 4 show the 5-year average coefficients for the four different cross-sections between 2000 and 2019. In contrast to the following specifications, the OLS specification is of a bilateral nature. Thus, the number of observations is the square of the number of countries. Our constructed export-weighted spatial lag is positive and significant at the 1%-level for all four periods. The effect gets slightly stronger over time. When looking at the control variables, we find significant and positive effects of liberal democracy. The effects of both real GDP and real GDP squared are negative and significant. The latter result might be surprising but can be explained by the inclusion of liberal democracy. This variable already catches

a lot of the variation of the other explanatory variables. Population has a negative and significant effect in the first two periods. Additionally, trade openness positively affects the level of human rights in the last two periods. The other control variables are insignificant in this specification. Our first estimation results already indicate that exports might be an important determinant for the spillover of human rights between countries.

However, in order to overcome the endogeneity issues, we will move to proper spatial estimations using the GS2SLS estimator proposed by Badinger and Egger (2011). Table 4 presents the results using a spatial lag of human rights weighted by exports, i.e. the lag is constructed using the weighting matrix W_{exp} presented above. The coefficients of the control variables are mostly similar to the ones in the OLS estimation concerning their magnitude and significance level. However, the coefficient we are most interested in is the one indicating the export-related spatial dependence in the dependent variable. Compared to table 3, the coefficient of the spatial lag is larger in magnitude but not significant in every period. In the first two periods, there is no significant effect at all. However, starting in 2010, we find a positive, strong and significant effect of the spatial lag. This indicates that over the last couple of years, we can find international spillovers of human rights via exports overall. If this result is robust, it can lead us to a conclusion regarding our first hypothesis: We can reject the null hypothesis that human rights in importing countries do not affect human rights in exporting countries. Finally, the attentive reader may have already observed that the sample size differs across periods. This is due to missing values in some cross sections.

In order to investigate the existence of the California effect, we need to have a closer look at the export weighting matrix. As described in the previous section, we will divide the exports matrix into two different matrices, one for exports from non-OECD countries to OECD countries and one for all other exports. Table 5 presents the results. Again, the estimates on the control variables are somewhat similar to the ones in table 4. Turning to the two spatial lags weighted by exports, the most important is considering spillovers from OECD to non-OECD countries. This spatial lag represents the California effect. Similar to the overall exports, the coefficient is positive and turns significant in 2010. This result supports the existence of the California effect with respect to human rights. Moreover, it

indicates that the positive spatial dependence of human rights found for exports overall is mainly driven by human rights spillovers in accordance with the California effect, i.e. spillovers from importing OECD countries to exporting non-OECD countries. There is a weakly significant positive effect in the last period for the spillovers between all other export combinations of OECD and non-OECD countries. However, this coefficient is rather difficult to interpret since it captures all other combinations of spillover through exports. In this paper, our primary emphasis is on examining the California effect. Thus, we will not pay too much attention to this second spatial lag but rather use it as a control variable. Eventually, we are now able to discuss the second hypothesis. Since our coefficient for the California effect is positive and significant in the last two periods, we can reject the null hypothesis that human rights in powerful importing countries do not affect human rights in less powerful exporting countries.

Having established the main results of our article already, we will try to eliminate some problems of our approach in the following. One direct problem could be an omitted variable bias in the weighting matrices. Our spatial lag of exports might spuriously measure other geographic variables, for example, a common border, the distance, or a common language between countries. Thus, we include these additional spatial lags in our estimation. Table 6 presents the results for overall exports, and table 7 shows the split of total exports. The spatial lags weighted by a common border and a common language are insignificant in both specifications. However, the inverse distance seems to be an important determinant of spillover as well. Its coefficient is significant and positive, starting in 2010, as shown in table 6. The addition also leads to a reduction of the magnitude of the spatial lag weighted by exports. However, the coefficient is still positive and significant. Similarly, in table 7, inverse distance is significant and positive starting in the second period. Our spatial lag of interest, the California effect, loses its significance in the period 2010-2014. However, it remains significant in the last period. We can conclude that both results with respect to our hypothesis are robust to the inclusion of additional control spatial lags.

After tackling the endogeneity problem using a spatial estimator and several weighting matrices, we still need to deal with a possible problem of reversed causality. As described

in the previous section, we address this issue by using the control function approach proposed by Qu et al. (2021). Countries might export to other countries due to some unobserved factors that affect the level of human rights in the country of destination in a similar way. Thus, to solve this problem, we include the predicted multilateral resistance terms of the first-stage equation in the second-stage equation in tables 8 and 9. As explained above, if the coefficients of these terms are significant, our previous results may have been biased. As before, we include error lags if Moran's I test suggests rejection of the null hypothesis of no spatial dependence in the residuals at the 10 %-level. The results of Moran's I test for the control function approach are shown in table 12. Table 8 presents the corresponding results for the spatial lag weighted by overall exports, including additional spatial lags as controls, as before. The exporter and importer effects are partly significant, indicating a potential endogeneity problem in the previous estimations. Once they are included, our results remain qualitatively the same. We still find significant and positive spatial spillovers through exports starting in 2010. Table 9 shows the same approach for the split exports weighting matrix. Again, the coefficients of our predicted variables from the first-stage equation are significant. Our coefficients of interest, the spatial lags weighted by exports from non-OECD to OECD countries, are significant and positive in the last two periods. Thus, our results obtained using the control function approach support the previous ones.

5 Extensions

The third hypothesis in section 3 refers to a difference between resource exports and non-resource exports. Since we assume OECD importers to have less bargaining power over non-OECD exporters when it comes to oil and gas exports, we expect the California effect to be particularly relevant for non-resource exports. Thus, in table 10 we include spatial lags weighted by common border, inverse distance, common language, and four more export matrices: resource exports from non-OECD to OECD countries, non-resource exports from non-OECD to OECD countries, resource exports between all other country pairs, and non-resource exports between all other country pairs. Thus, we can now look

specifically at resource and non-resource exports from non-OECD to OECD countries. The coefficients for the California effect for non-resources are positive and significant in the last two periods. This effect is similar to the ones we already found in our previous specifications. However, the California effect for resources is also positive and significant in the last period. Since both coefficients are positive and significant, we cannot argue that the California effect solely stems from non-resource exports. Nevertheless, we can come to a conclusion regarding hypothesis three. Human rights in powerful importing countries affect human rights in less powerful exporting countries through non-oil-and-gas exports. However, the same seems to be true for oil and gas exports, albeit only in the period from 2015 to 2019.

Finally, we conduct one more extension concerning the country groups. One could argue that the OECD is not simply a group of high-income countries which coincidentally all have relatively high human rights but a community sharing the same values respecting democracy, human rights, and many more. Thus, the California effect could be simply a phenomenon of this community and not a general matter between different groups of countries. To test this, we split the sample into a high and a low group. The high group comprises countries with a real GDP and human rights above the respective 75th percentiles. So, the high group consists of rich countries with high human rights standards only. Table 11 presents the results. The spatial lag weighted by exports from low to high represents the California effect. Its coefficients are significant and positive in the last two periods. Thus, the results are similar to those in the previous examples. We can conclude that it is not only the OECD that fosters spillover through trade but also other groups consisting of such high countries. However, many OECD countries are part of this high group. So, the effect could still be driven by OECD countries.

6 Conclusion

For many years, a common narrative has posited that increased trade between Western countries and countries with poor human rights records could lead to spillovers of human rights and democracy and thus improve living conditions around the globe. Due to recent

geopolitical events, this "Wandel durch Handel" narrative has been called into question, a potential implication being that rich countries should not trade with countries that do not respect human rights or democratic values. A conclusion on this matter should not be made carelessly as it could have detrimental consequences for the poorest of this earth. An empirical analysis can help in determining whether doubts about the existence of beneficial human rights spillovers are based only on anecdotal evidence of singular unfortunate events or whether they are systematically justified.

One potential mechanism through which international diffusion of human rights may occur is the so-called "California effect": firms in importing and exporting countries are often pressured by non-governmental actors such as consumers, downstream firms, or non-governmental organizations to respect human rights. This may lead to firms in exporting countries trying to improve their standards or to lobby their respective governments in this regard in order to be able to export to countries where such practices are valued. In this article, we test the existence of this effect.

Our sample comprises four cross-sections between 2000 and 2019 with up to 173 countries. We estimate a spatial autoregressive model with spatially dependent errors by applying the GS2SLS estimator. As weighting matrices, we use contiguity, inverse distance, common language, and exports. The latter is the one we are interested in to test the existence of the California effect. Additionally, we use a recent control function approach to tackle the problem of an endogenous weighting matrix.

Overall, we test three hypotheses. First, we test if there are human rights spillovers through trade. While our coefficients of interest are insignificant in the first periods, we find these positive spillovers in the cross-sections starting from 2010. Second, we examine the California effect, focusing on spillovers from OECD to non-OECD countries. Again, our coefficients are positive and significant, suggesting the existence of the California effect. Both results are robust to various robustness tests. Finally, we differentiate between resource and non-resource exports. The results suggest that non-resource exports are a major driver of the California effect. However, in the most recent cross-section, we also find the California effect in resource exports.

Our results are at odds with the anecdotal evidence that spillovers through trade do not

exist. When systematically examining human rights spillovers through trade, we find evidence for positive and significant spillovers. Trade seems to be an important vehicle for the improvement of human rights around the globe. An important policy implication of this study is that Western trade relationships with lower human rights standards should not be abandoned for supposedly ethical reasons. Instead, trade should be considered a transmission mechanism for human rights and other kinds of institutions.

As indicated before, our study has some limitations. Our estimated coefficients concerning the California effect are positive and significant after 2010. We interpret these estimates to indicate positive spillover effects from OECD to non-OECD countries. However, theoretically, this could also suggest spillovers from non-OECD to OECD countries through exports. This could imply that human rights standards in OECD countries may decrease if human rights standards in non-OECD trading partners decrease. Yet, we consider it unlikely that such an adverse spillover effect on OECD human rights standards is an important driver of our results. Additionally, we do not conduct a panel data analysis and thus ignore any time dimension for technical reasons. With most current statistical tools, it is not possible to simultaneously control for multiple weighting matrices when estimating spatial autoregressive models in a panel setting. If we had done this manually by treating all country-year combinations as individual observations in a cross-section and controlling for the appropriate fixed effects, the sizes of the weighting matrices would have risen to dimensions that would have made computation with conventional technical equipment difficult. Lastly, the typical shortcomings of cross-sectional studies apply, e.g. we cannot generalize our result to every country-pair but need to view it as an average result across all countries. However, this would have also been the case if we had applied a panel study.

References

Acemoglu, D., & Robinson, J. A. (2000). Why did the west extend the franchise? democracy, inequality, and growth in historical perspective. *The Quarterly Journal of Economics*, *115*(4), 1167–1199. doi: 10.1162/003355300555042

Acemoglu, D., & Robinson, J. A. (2006). *Economic origins of dictatorship and democracy* (1. publ ed.). Cambridge: Cambridge Univ. Press. Retrieved from `http://bvbr.bib-bvb.de:8991/F?func=service&doc_library=BVB01&doc_number=014717386&line_number=0001&func_code=DB_RECORDS&service_type=MEDIA`

Aidt, T. S., & Gassebner, M. (2010). Do autocratic states trade less? *The World Bank Economic Review*, *24*(1), 38–76. doi: 10.1093/wber/lhp022

Alcala, F., & Ciccone, A. (2004). Trade and productivity. *The Quarterly Journal of Economics*, *119*(2), 613–646. doi: 10.1162/0033553041382139

Amidi, S., & Fagheh Majidi, A. (2020). Geographic proximity, trade and economic growth: a spatial econometrics approach. *Annals of GIS*, *26*(1), 49–63. doi: 10.1080/19475683.2020.1714727

Anselin, L. (1988). *Spatial econometrics: Methods and models* (Vol. 4). Dordrecht: Springer Netherlands. doi: 10.1007/978-94-015-7799-1

Badinger, H., & Egger, P. (2011). Estimation of higher–order spatial autoregressive cross–section models with heteroscedastic disturbances. *Papers in Regional Science*, *90*(1), 213–235. doi: 10.1111/j.1435-5957.2010.00323.x

Bahr, E. (1963). *Wandel durch annäherung.* Tutzing. Retrieved 16.01.2024, from `https://www.ev-akademie-tutzing.de/60-jahre-wandel-durch-annaeherung/`

Barro, R. J. (1999). Determinants of democracy. *Journal of Political Economy*, *107*(S6), S158-S183. doi: 10.1086/250107

Bell, S. R., Clay, K. C., & Murdie, A. (2012). Neighborhood watch: Spatial effects of human rights ingos. *The Journal of Politics*, *74*(2), 354–368. doi: 10.1017/S0022381611001642

Berik, G., van der Rodgers, Y. M., & Zveglich, J. E. (2004). International trade and gender

wage discrimination: Evidence from east asia. *Review of Development Economics*, *8*(2), 237–254. doi: 10.1111/j.1467-9361.2004.00230.x

Bernauer, T., & Caduff, L. (2004). In whose interest? pressure group politics, economic competition and environmental regulation. *Journal of Public Policy*, *24*(1), 99–126. Retrieved from http://www.jstor.org/stable/4007804

Blanton, S. L., & Blanton, R. G. (2007). What attracts foreign investors? an examination of human rights and foreign direct investment. *The Journal of Politics*, *69*(1), 143–155. doi: 10.1111/j.1468-2508.2007.00500.x

Borchert, I., Larch, M., Shikher, S., & Yotov, Y. V. (2021). The international trade and production database for estimation (itpd-e). *International Economics*, *166*, 140–166. doi: 10.1016/j.inteco.2020.08.001

Borchert, I., Larch, M., Shikher, S., & Yotov, Y. V. (2022). *The international trade and production database for estimation - release 2 (itpd-e-r02): Usitc working paper 2022–07–a.*

Bundesministerium der Justiz. (2021). *Gesetz über die unternehmerischen sorgfaltspflichten in lieferketten.* Retrieved 08.01.2024, from https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl121s2959.pdf#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl121s2959.pdf%27%5D__1704732107299

Cao, X., Greenhill, B., & Prakash, A. (2013). Where is the tipping point? bilateral trade and the diffusion of human rights. *British Journal of Political Science*, *43*(1), 133–156. doi: 10.1017/S000712341200018X

Center for Systemic Peace. (2022). *Inscr data page.* Retrieved 13.10.2023, from https://www.systemicpeace.org/inscrdata.html

Chandran, R. (2016). *Three years after rana plaza disaster, has anything changed?* Mumbai. Retrieved 22.12.2023, from https://www.reuters.com/article/us-bangladesh-garments-lessons-analysis-idUSKCN0XJ02G/

Chyzh, O. (2016). Keeping up with which joneses: Spatial diffusion of rule of law through economic international organizations. *Foreign Policy Analysis*, orw023. doi: 10.1093/fpa/orw023

CIA. (2023). *North macedonia - the world factbook.* Retrieved 08.09.2023, from https://www.cia.gov/the-world-factbook/countries/north-macedonia/

Cingranelli, D. L., Richards, D. L., & Clay, K. C. (2021). *The ciri human rights dataset, version 2014.04.14.* Harvard Dataverse. doi: 10.7910/DVN/UKCPXT

Claeys, P., & Manca, F. (2011). A missing spatial link in institutional quality. *Applied Economics Letters*, *18*(3), 223–227. doi: 10.1080/13504850903559542

Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., ... Ziblatt, D. (2023a). *V-dem codebook v13: Varieties of democracy (v-dem) project.*

Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., ... Ziblatt, D. (2023b). *V-dem dataset v13: Varieties of democracy (v-dem) project.* Varieties of Democracy (V-Dem) Project. doi: 10.23696/vdemds23

Davies, R. B., & Voy, A. (2009). The effect of fdi on child labor. *Journal of Development Economics*, *88*(1), 59–66. doi: 10.1016/j.jdeveco.2008.02.001

Deutsche Welle. (2022). *German president steinmeier admits mistakes over russia.* Retrieved 22.12.2023, from https://www.dw.com/en/german-president-steinmeier-admits-mistakes-over-russia-policy/a-61362153

Dobbin, F., Simmons, B., & Garrett, G. (2007). The global diffusion of public policies: Social construction, coercion, competition, or learning? *Annual Review of Sociology*, *33*(1), 449–472. doi: 10.1146/annurev.soc.33.090106.142507

Doces, J. A., & Magee, C. S. P. (2015). Trade and democracy: A factor-based approach. *International Interactions*, *41*(2), 407–425. doi: 10.1080/03050629.2015.984065

Dodman, B. (2022). *'wrong about putin': Did germany and france turn a blind eye to the threat from russia?* Retrieved 22.12.2023, from https://www.france24.com/en/europe/20220405-wrong-about-putin-did-germany-and-france-turn-blind-eye-to-threat-from-russia

Drezner, D. W. (2001). Globalization and policy convergence. *International Studies Review*, *3*(1), 53–78. doi: 10.1111/1521-9488.00225

Edwards, T. H., Kernohan, D., Landman, T., & Nessa, A. (2018). Good neighbours matter: economic geography and the diffusion of human rights. *Spatial Economic Analysis*, *13*(3), 319–337. doi: 10.1080/17421772.2018.1412087

Faber, G., & Gerritse, M. (2012). Foreign determinants of local institutions: Spatial dependence and openness. *European Journal of Political Economy*, *28*(1), 54–63. doi: 10.1016/j.ejpoleco.2011.09.005

Faber, G., & Gerritse, M. (2017). Does institutional change spread across countries? explaining spatial patterns in human rights. *The World Economy*, *40*(5), 906–930. doi: 10.1111/twec.12416

Feyrer, J. (2019). Trade and income—exploiting time series in geography. *American Economic Journal: Applied Economics*, *11*(4), 1–35. doi: 10.1257/app.20170616

Frankel, J. A., & Romer, D. (1999). Does trade cause growth? *American Economic Review*, *89*(3), 379–399. doi: 10.1257/aer.89.3.379

Gleditsch, K. S., & Ward, M. D. (2006). Diffusion and the international context of democratization. *International Organization*, *60*(04). doi: 10.1017/S0020818306060309

Goderis, B., & Versteeg, M. (2014). The diffusion of constitutional rights. *International Review of Law and Economics*, *39*, 1–19. doi: 10.1016/j.irle.2014.04.004

Greenhill, B. (2010). The company you keep: International socialization and the diffusion of human rights norms. *International Studies Quarterly*, *54*(1), 127–145. doi: 10.1111/j.1468-2478.2009.00580.x

Greenhill, B., Mosley, L., & Prakash, A. (2009). Trade-based diffusion of labor rights: A panel study, 1986–2002. *American Political Science Review*, *103*(4), 669–690. Retrieved from `http://www.jstor.org/stable/27798531`

Gurevich, T., & Herman, P. (2018). *The dynamic gravity dataset: 1948–2016: Usitc working paper 2018-02-a.*

Hafner-Burton, E. M. (2005). Right or robust? the sensitive nature of repression to globalization. *Journal of Peace Research*, *42*(6), 679–698. doi: 10.1177/0022343305057887

Heid, B., Langer, J., & Larch, M. (2012). Income and democracy: Evidence from system gmm estimates. *Economics Letters*, *116*(2), 166–169. doi: 10.1016/j.econlet.2012.02.009

Ho, C.-Y., Wang, W., & Yu, J. (2013). Growth spillover through trade: A spatial dynamic panel data approach. *Economics Letters*, *120*(3), 450–453. doi: 10.1016/

j.econlet.2013.05.027

International Monetary Fund. (2023). *Direction of trade statistics - dots home - imf data.* Retrieved 24.07.2023, from `https://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85`

Kelejian, H. H., Murrell, P., & Shepotylo, O. (2013). Spatial spillovers in the development of institutions. *Journal of Development Economics*, *101*, 297–315. doi: 10.1016/j.jdeveco.2012.12.003

Kelejian, H. H., & Prucha, I. R. (1998). A generalized spatial two-stage least squares procedure for estimating a spatial autoregressive model with autoregressive disturbances. *The Journal of Real Estate Finance and Economics*, *17*(1), 99–121. doi: 10.1023/A:1007707430416

Kelejian, H. H., & Prucha, I. R. (1999). A generalized moments estimator for the autoregressive parameter in a spatial model. *International Economic Review*, *40*(2), 509–533. doi: 10.1111/1468-2354.00027

Kelejian, H. H., & Prucha, I. R. (2004). Estimation of simultaneous systems of spatially interrelated cross sectional equations. *Journal of Econometrics*, *118*(1-2), 27–50. doi: 10.1016/S0304-4076(03)00133-7

Kelejian, H. H., & Prucha, I. R. (2010). Specification and estimation of spatial autoregressive models with autoregressive and heteroskedastic disturbances. *Journal of Econometrics*, *157*(1), 53–67. doi: 10.1016/j.jeconom.2009.10.025

Kopstein, J. S., & Reilly, D. A. (2000). Geographic diffusion and the transformation of the postcommunist world. *World Politics*, *53*(1), 1–37. doi: 10.1017/S0043887100009369

Kucera, D., & Milberg, W. (2000). Gender segregation and gender bias in manufacturing trade expansion: Revisiting the "wood asymmetry". *World Development*, *28*(7), 1191–1210. doi: 10.1016/S0305-750X(00)00020-6

Lacroix, J., Méon, P.-G., & Sekkat, K. (2021). Democratic transitions can attract foreign direct investment: Effect, trajectories, and the role of political risk. *Journal of Comparative Economics*, *49*(2), 340–357. doi: 10.1016/j.jce.2020.09.003

Lesage, J. P., & Pace, R. K. (2009). *Introduction to spatial econometrics* (Vol. 196). Boca

Raton and London and New York: CRC Press Taylor & Francis Group.

Lim, S., & Prakash, A. (2017). Do economic problems at home undermine worker safety abroad?: A panel study, 1980–2009. *World Development*, *96*, 562–577. doi: 10.1016/j.worlddev.2017.03.038

Lipset, S. M. (1959). Some social requisites of democracy: Economic development and political legitimacy. *American Political Science Review*, *53*(1), 69–105. doi: 10.2307/1951731

Liu, X., & Ornelas, E. (2014). Free trade agreements and the consolidation of democracy. *American Economic Journal: Macroeconomics*, *6*(2), 29–70. doi: 10.1257/mac.6.2.29

López-Córdova, J. E., & Meissner, C. M. (2008). The impact of international trade on democracy: A long-run perspective. *World Politics*, *60*(4), 539–575. Retrieved from http://www.jstor.org/stable/40060211

Marshall, M. G. (2019). *Major episodes of political violence (mepv) and conflict regions , 1946-2018.* Retrieved 16.01.2024, from https://www.systemicpeace.org/inscr/MEPVcodebook2018.pdf

Messerschmidt, L., & Janz, N. (2023). Unravelling the 'race to the bottom' argument: Foreign direct investment and different types of labour rights. *World Development*, *161*, 106097. doi: 10.1016/j.worlddev.2022.106097

Milner, H. V., & Kubota, K. (2005). Why the move to free trade? democracy and trade policy in the developing countries. *International Organization*, *59*(01). doi: 10.1017/S002081830505006X

Moens, B. (2022). *Ukraine presses the eu to get real about trading with the enemy.* Retrieved 22.12.2023, from https://www.politico.eu/article/ukraine-geopolitics-in-eu-trade-china-russia/

Mosley, L., & Uno, S. (2007). Racing to the bottom or climbing to the top? economic globalization and collective labor rights. *Comparative Political Studies*, *40*(8), 923–948. doi: 10.1177/0010414006293442

Naveed, A., Ahmad, N., Naz, A., & Zhuparova, A. (2023). Economic development through women's economic rights: a panel data analysis. *International Economics*

and Economic Policy, *20*(2), 257–278. doi: 10.1007/s10368-023-00560-1

Neumayer, E., & de Soysa, I. (2005). Trade openness, foreign direct investment and child labor. *World Development*, *33*(1), 43–63. doi: 10.1016/j.worlddev.2004.06.014

Neumayer, E., & de Soysa, I. (2007). Globalisation, women's economic rights and forced labour. *The World Economy*, *30*(10), 1510–1535. doi: 10.1111/j.1467-9701.2007.01060.x

Neumayer, E., & de Soysa, I. (2011). Globalization and the empowerment of women: An analysis of spatial dependence via trade and foreign direct investment. *World Development*, *39*(7), 1065–1075. doi: 10.1016/j.worlddev.2010.12.008

Oostendorp, R. H. (2009). Globalization and the gender wage gap. *The World Bank Economic Review*, *23*(1), 141–161. doi: 10.1093/wber/lhn022

Ord, K. (1975). Estimation methods for models of spatial interaction. *Journal of the American Statistical Association*, *70*(349), 120. doi: 10.2307/2285387

Pemstein, D., Marquardt, K. L., Tzelgov, E., Wang, Y.-t., Medzihorsky, J., Krusell, J., ... von Römer, J. (2023). *The v-dem measurement model: Latent variable analysis for cross-national and cross-temporal expert-coded data: V-dem working paper no. 21* (8th ed.). University of Gothenburg: Varieties of Democracy Institute.

Peterson, T. M., Murdie, A., & Asal, V. (2018). Human rights, ngo shaming and the exports of abusive states. *British Journal of Political Science*, *48*(3), 767–786. doi: 10.1017/S0007123416000065

Pew Research Center. (2022). *Religious composition by country, 2010-2050 | pew research center.* Retrieved 08.09.2023, from `https://www.pewresearch.org/religion/interactives/religious-composition-by-country-2010-2050/`

Potrafke, N., & Ursprung, H. W. (2012). Globalization and gender equality in the course of development. *European Journal of Political Economy*, *28*(4), 399–413. doi: 10.1016/j.ejpoleco.2012.04.001

Prucha, I. R., Drukker, D. M., & Egger, P. H. (2019). *Simultaneous equations models with higher-order spatial or social network interactions: Technical report, working paper, department of economics, university of maryland.*

Qu, X., Lee, L.-f., & Yang, C. (2021). Estimation of a sar model with endogenous

spatial weights constructed by bilateral variables. *Journal of Econometrics*, *221*(1), 180–197. doi: 10.1016/j.jeconom.2020.05.011

Simmons, B., & Elkins, Z. (2004). The globalization of liberalization: Policy diffusion in the international political economy. *American Political Science Review*, *98*(1), 171–189. doi: 10.1017/S0003055404001078

Strupczewski, J. (2022). *Ukraine war shows 'end of globalisation as we know it' - eu's gentiloni.* Washington. Retrieved 22.12.2023, from https://www.reuters.com/world/ukraine-war-shows-end-globalisation-we-know-it-eus-gentiloni-2022-04-21/

The Economist. (2022). *Why gerhard schröder won't unfriend vladimir putin: Germany's former leader shrugs off the invasion of ukraine.* Berlin. Retrieved 22.12.2023, from https://www.economist.com/europe/2022/04/28/why-gerhard-schroder-wont-unfriend-vladimir-putin

UNCTAD. (2023). *Unctadstat.* Retrieved 30.09.2023, from https://unctadstat.unctad.org/datacentre/

Vogel, D. (1997). *Trading up: Consumer and environmental regulation in a global economy* (2. printing ed.). Cambridge, Mass.: Harvard Univ. Press.

Wood, A. (1991). North–south trade and female labour in manufacturing: An asymmetry. *Journal of Development Studies*, *27*(2), 168–189. doi: 10.1080/00220389108422191

World Bank. (2023). *World development indicators | databank.* Retrieved 24.07.2023, from https://databank.worldbank.org/source/world-development-indicators#

Tables

Table 1: Summary statistics of the four cross-sections

	Observations	Mean	Std. Dev.	Min	Max
Civil liberties	684	0.70	0.24	0.03	0.98
Liberal Democracy	684	0.42	0.27	0.01	0.90
Log GDP real	684	8.43	1.45	5.59	11.58
Log Population	684	16.02	1.68	11.32	21.06
FDI flows % in GDP	684	5.34	14.16	-4.69	264.27
Trade Openness in % of GDP	684	77.39	56.19	3.92	627.69
Conflict	684	0.24	0.37	0	1
Share of Muslim Population	684	27.52	37.90	0	100
Share of Christian Population	684	53.24	37.55	0	100
Exports	684	555.37	1485.41	0.07	15179.71

Table 2: Moran's I Test: Test for spatial correlation among the residuals

	Chi-squared statistic			
Weighting Matrix	2000-2004	2005-2009	2010-2014	2015-2019
Contiguity	1.21	2.60	3.43*	5.49**
Inverse Distance	0.17	1.04	3.73*	6.58**
Common Language	1.45	1.16	0.11	0.03
Total Exports	0.45	0.44	2.51	5.50**
Exports from non-OECD to OECD	0.57	0.18	0.00	0.67
Other Exports	0.02	0.26	3.83*	5.35**
Resource Exports from non-OECD to OECD	0.00	0.03	0.03	0.02
Non-Resource Exports from non-OECD to OECD	0.74	0.18	0.00	0.78
Other Resource Exports	2.46	3.47*	2.32	2.29
Other Non-Resource Exports	0.66	1.72	2.24	3.55*
Exports from Low to High Income and Human Rights	0.47	0.21	0.06	0.62
Other Exports Income and Human Rights	0.05	0.25	3.48*	5.59**

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level.

Table 3: Baseline Estimation

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Export-weighted spatial Lag	0.0204***	0.0231***	0.0282***	0.0314***
	(0.0071)	(0.0067)	(0.0057)	(0.0057)
Liberal Democracy	0.8531***	0.8333***	0.8059***	0.8600***
	(0.0575)	(0.0554)	(0.0544)	(0.0560)
Log GDP real	-0.0217***	-0.0247***	-0.0247***	-0.0260***
	(0.0082)	(0.0071)	(0.0075)	(0.0070)
Log GDP real squared	-0.0082***	-0.0089***	-0.0097***	-0.0118***
	(0.0029)	(0.0032)	(0.0035)	(0.0040)
Log Population	-0.0129***	-0.0103***	-0.0053	-0.0073*
	(0.0040)	(0.0038)	(0.0044)	(0.0043)
Log Population squared	-0.0009	-0.0015	-0.0014	-0.0010
	(0.0018)	(0.0016)	(0.0019)	(0.0018)
FDI flows	0.0005	0.0001	0.0002	0.0002
	(0.0013)	(0.0002)	(0.0004)	(0.0012)
Trade Openness in % of GDP	-0.0000	0.0002	0.0004*	0.0004**
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0098	-0.0100	-0.0320	-0.0442
	(0.0269)	(0.0265)	(0.0270)	(0.0323)
Share of Muslim Population	-0.0003	-0.0002	-0.0002	0.0000
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Share of Christian Population	0.0003	0.0003	0.0003	0.0004
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.3659***	0.3563***	0.3569***	0.3283***
	(0.0551)	(0.0500)	(0.0506)	(0.0526)
R-Squared	0.818	0.805	0.797	0.815
Number of Countries	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Standard errors are in parentheses. Standard errors are clustered at the country level.

Table 4: Overall Exports

	(1)	(2)	(3)	(4)
	2000-2004	2010-2014	2010-2014	2015-2019
Liberal Democracy	0.8390***	0.8237***	0.7760***	0.8174***
	(0.0580)	(0.0554)	(0.0535)	(0.0517)
Log GDP real	-0.0214***	-0.0260***	-0.0298***	-0.0296***
	(0.0082)	(0.0071)	(0.0071)	(0.0072)
Log GDP real squared	-0.0085***	-0.0088***	-0.0084**	-0.0089**
	(0.0029)	(0.0032)	(0.0033)	(0.0039)
Log Population	-0.0130***	-0.0107***	-0.0061	-0.0104**
	(0.0040)	(0.0038)	(0.0042)	(0.0040)
Log Population squared	-0.0010	-0.0015	-0.0023	-0.0023
	(0.0018)	(0.0017)	(0.0018)	(0.0016)
FDI flows in % of GDP	0.0006	0.0001	0.0004	0.0002
	(0.0013)	(0.0002)	(0.0004)	(0.0011)
Trade Openness in % of GDP	-0.0001	0.0002	0.0003*	0.0003*
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0098	-0.0072	-0.0186	-0.0352
	(0.0266)	(0.0263)	(0.0251)	(0.0290)
Share of Muslim Population	-0.0003	-0.0003	-0.0003	0.0001
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Share of Christian Population	0.0002	0.0003	0.0001	0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.2843***	0.2710***	0.1792**	0.1470*
	(0.1061)	(0.0890)	(0.0763)	(0.0842)
Spatial Lag weighted by				
Total Exports	0.1104	0.1150	0.2653***	0.2735***
	(0.1136)	(0.0883)	(0.0792)	(0.0793)
Pseudo R-Squared	0.818	0.805	0.808	0.828
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results in table 2. Columns 1, 2, and 3 do not include any error lags. Column 4 includes an error lag for Total Exports.

Table 5: Exports by Country Group

	(1)	(2)	(3)	(4)
	2000-2004	2010-2014	2010-2014	2015-2019
Liberal Democracy	0.8717***	0.8589***	0.8086***	0.8429***
	(0.0597)	(0.0595)	(0.0558)	(0.0528)
Log GDP real	-0.0166*	-0.0212***	-0.0236***	-0.0197***
	(0.0086)	(0.0076)	(0.0081)	(0.0075)
Log GDP real squared	-0.0045	-0.0060*	-0.0044	-0.0036
	(0.0031)	(0.0035)	(0.0037)	(0.0040)
Log Population	-0.0112***	-0.0096**	-0.0052	-0.0085**
	(0.0042)	(0.0039)	(0.0044)	(0.0042)
Log Population squared	-0.0009	-0.0018	-0.0029*	-0.0028*
	(0.0018)	(0.0016)	(0.0016)	(0.0015)
FDI flows in % of GDP	0.0002	0.0000	0.0001	-0.0008
	(0.0013)	(0.0002)	(0.0004)	(0.0009)
Trade Openness in % of GDP	-0.0001	0.0002	0.0003*	0.0004**
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0161	-0.0044	-0.0106	-0.0329
	(0.0260)	(0.0263)	(0.0241)	(0.0271)
Share of Christian Population	0.0003	0.0003	0.0001	0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0003)
Share of Muslim Population	-0.0003	-0.0002	-0.0003	-0.0000
	(0.0005)	(0.0004)	(0.0004)	(0.0004)
Constant	0.3486***	0.3104***	0.2180**	0.1895**
	(0.1003)	(0.0828)	(0.0857)	(0.0837)
Spatial Lag weighted by				
Exports from non-OECD to OECD	0.0453	0.0829	0.2285***	0.2607***
	(0.1072)	(0.0857)	(0.0803)	(0.0776)
Other Exports	-0.0435	-0.0035	0.1538*	0.1485*
	(0.1145)	(0.0986)	(0.0913)	(0.0876)
Pseudo R-Squared	0.824	0.811	0.814	0.837
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results in table 2. Columns 1 and 2 do not include any error lags. Columns 3 and 4 include an error lag for Other Exports.

Table 6: Overall Exports incl. Control Weights

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Liberal Democracy	0.8317***	0.7995***	0.7434***	0.7651***
	(0.0576)	(0.0557)	(0.0503)	(0.0533)
Log GDP real	-0.0231***	-0.0275***	-0.0310***	-0.0281***
	(0.0088)	(0.0075)	(0.0080)	(0.0083)
Log GDP real squared	-0.0076**	-0.0075**	-0.0059*	-0.0056
	(0.0030)	(0.0032)	(0.0034)	(0.0039)
Log Population	-0.0123***	-0.0098**	-0.0039	-0.0072
	(0.0045)	(0.0044)	(0.0049)	(0.0049)
Log Population squared	-0.0010	-0.0015	-0.0023	-0.0021
	(0.0018)	(0.0017)	(0.0019)	(0.0019)
FDI flows in % of GDP	0.0005	0.0001	0.0003	0.0001
	(0.0013)	(0.0002)	(0.0004)	(0.0010)
Trade Openness in % of GDP	-0.0000	0.0002	0.0003	0.0003
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0113	-0.0063	-0.0219	-0.0443
	(0.0280)	(0.0274)	(0.0255)	(0.0301)
Share of Christian Population	0.0002	0.0002	0.0001	0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Share of Muslim Population	-0.0003	-0.0003	-0.0002	0.0000
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Constant	0.2168	0.1248	-0.0493	-0.1230
	(0.1403)	(0.1376)	(0.1390)	(0.1573)
Spatial Lag weighted by				
Common Border	-0.0193	-0.0199	-0.0434	-0.0257
	(0.0281)	(0.0305)	(0.0286)	(0.0319)
Inverse Distance	0.1321	0.2843	0.3716	0.3904*
	(0.2172)	(0.2172)	(0.2283)	(0.2296)
Common Language	0.0265	0.0090	0.0448	0.0347
	(0.0538)	(0.0536)	(0.0483)	(0.0609)
Total Exports	0.0741	0.0677	0.2280**	0.2517***
	(0.1241)	(0.1004)	(0.0915)	(0.0837)
Pseudo R-Squared	0.819	0.807	0.811	0.823
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results in table 2. Columns 1 and 2 do not include any error lags. Column 3 includes error lags for Common Border and Inverse Distance. Column 4 includes error lags for Common Border, Inverse Distance, and Total Exports.

Table 7: Exports by Country Group incl. Control Weights

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Liberal Democracy	0.8582***	0.8306***	0.7723***	0.8003***
	(0.0590)	(0.0578)	(0.0490)	(0.0520)
Log GDP real	-0.0181**	-0.0214***	-0.0250***	-0.0196**
	(0.0090)	(0.0080)	(0.0076)	(0.0078)
Log GDP real squared	-0.0024	-0.0032	-0.0022	-0.0014
	(0.0034)	(0.0037)	(0.0038)	(0.0041)
Log Population	-0.0112**	-0.0096**	-0.0047	-0.0074
	(0.0047)	(0.0045)	(0.0047)	(0.0048)
Log Population squared	-0.0006	-0.0014	-0.0028*	-0.0022
	(0.0018)	(0.0016)	(0.0015)	(0.0016)
FDI flows in % of GDP	0.0001	0.0000	0.0001	-0.0007
	(0.0013)	(0.0002)	(0.0004)	(0.0009)
Trade Openness in % of GDP	-0.0001	0.0002	0.0003*	0.0004*
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0137	0.0021	-0.0121	-0.0405
	(0.0275)	(0.0282)	(0.0247)	(0.0287)
Share of Muslim Population	-0.0003	-0.0003	-0.0003	-0.0001
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Share of Christian Population	0.0002	0.0001	-0.0000	0.0001
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.2453*	0.1293	-0.1262	-0.0978
	(0.1363)	(0.1356)	(0.1282)	(0.1333)
Spatial Lag weighted by				
Common Border	-0.0023	0.0003	-0.0370	-0.0227
	(0.0292)	(0.0319)	(0.0297)	(0.0325)
Inverse Distance	0.2453	0.3932*	0.5923***	0.5263***
	(0.2243)	(0.2272)	(0.2150)	(0.1968)
Common Language	0.0253	0.0101	0.0686	0.0424
	(0.0604)	(0.0557)	(0.0492)	(0.0587)
Exports from non-OECD to OECD	-0.0396	-0.0146	0.1339	0.1739**
	(0.1272)	(0.1011)	(0.0948)	(0.0850)
Other Exports	-0.1452	-0.1243	0.0307	0.0548
	(0.1428)	(0.1239)	(0.1104)	(0.0949)
Pseudo R-Squared	0.826	0.815	0.819	0.838
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results in table 2. Columns 1 and 2 do not include any error lags. Columns 3 and 4 include error lags for Common Border, Inverse Distance, and Other Exports.

Table 8: Control function approach: Overall Exports

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Liberal Democracy	0.8034***	0.7811***	0.7276***	0.7471***
	(0.0566)	(0.0540)	(0.0481)	(0.0509)
Log GDP real	-0.0516***	-0.0516***	-0.0600***	-0.0489***
	(0.0119)	(0.0134)	(0.0126)	(0.0123)
Log GDP real squared	-0.0103***	-0.0081**	-0.0082**	-0.0079**
	(0.0032)	(0.0033)	(0.0034)	(0.0039)
Log Population	-0.0422***	-0.0380***	-0.0373***	-0.0295***
	(0.0111)	(0.0127)	(0.0110)	(0.0086)
Log Population squared	-0.0041*	-0.0043**	-0.0049**	-0.0039*
	(0.0022)	(0.0021)	(0.0022)	(0.0020)
FDI flows in % of GDP	0.0009	0.0002	0.0006	0.0005
	(0.0012)	(0.0002)	(0.0004)	(0.0010)
Trade Openness in % of GDP	-0.0002	0.0001	0.0002	0.0002
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	0.0022	0.0074	-0.0061	-0.0343
	(0.0275)	(0.0266)	(0.0252)	(0.0292)
Share of Muslim Population	0.0000	-0.0002	-0.0003	-0.0000
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Share of Christian Population	0.0004	0.0003	0.0001	0.0004
	(0.0004)	(0.0005)	(0.0004)	(0.0004)
Exporter Effects	0.0296	-0.0322	-0.0471**	-0.0639***
	(0.0234)	(0.0228)	(0.0221)	(0.0218)
Importer Effects	0.0305	0.0892***	0.1087***	0.1124***
	(0.0285)	(0.0296)	(0.0278)	(0.0276)
Constant	0.2557*	0.2616*	0.0312	-0.1044
	(0.1408)	(0.1423)	(0.1239)	(0.1739)
Spatial Lag weighted by				
Common Border	-0.0126	-0.0125	-0.0262	-0.0086
	(0.0266)	(0.0293)	(0.0274)	(0.0318)
Inverse Distance	0.0208	0.0608	0.2411	0.3574
	(0.2279)	(0.2417)	(0.2238)	(0.2573)
Common Language	0.0361	0.0315	0.0540	0.0265
	(0.0533)	(0.0500)	(0.0461)	(0.0561)
Total Exports	0.1188	0.0873	0.2545***	0.2834***
	(0.1223)	(0.1038)	(0.0859)	(0.0770)
Pseudo R-Squared	0.828	0.818	0.829	0.837
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results. Error lags are included according to Moran test results in table 12. Columns 1 and 3 do not include any error lags. Column 2 includes an error lag for Contiguity. Column 4 includes error lags for Common Border, Inverse Distance, and Total Exports.

Table 9: Control function approach: Exports by Country Group

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Liberal Democracy	0.8317***	0.8095***	0.7641***	0.7708***
	(0.0569)	(0.0547)	(0.0488)	(0.0517)
Log GDP real	-0.0509***	-0.0490***	-0.0531***	-0.0419***
	(0.0119)	(0.0131)	(0.0123)	(0.0122)
Log GDP real squared	-0.0041	-0.0040	-0.0030	-0.0036
	(0.0034)	(0.0036)	(0.0038)	(0.0041)
Log Population	-0.0469***	-0.0423***	-0.0397***	-0.0310***
	(0.0109)	(0.0123)	(0.0107)	(0.0084)
Log Population squared	-0.0040*	-0.0045**	-0.0056***	-0.0040**
	(0.0021)	(0.0020)	(0.0020)	(0.0019)
FDI flows in % of GDP	0.0004	0.0000	0.0003	-0.0002
	(0.0012)	(0.0002)	(0.0004)	(0.0009)
Trade Openness in % of GDP	-0.0002	0.0001	0.0002	0.0003
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	0.0018	0.0188	0.0056	-0.0290
	(0.0266)	(0.0270)	(0.0250)	(0.0287)
Share of Muslim Population	0.0000	-0.0002	-0.0003	-0.0001
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Share of Christian Population	0.0004	0.0002	-0.0000	0.0004
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Exporter Effects	0.0305	-0.0298	-0.0474**	-0.0588***
	(0.0223)	(0.0216)	(0.0217)	(0.0206)
Importer Effects	0.0424	0.0942***	0.1128***	0.1090***
	(0.0282)	(0.0281)	(0.0261)	(0.0263)
Constant	0.3044**	0.2586*	0.0558	-0.1427
	(0.1349)	(0.1379)	(0.1320)	(0.1774)
Spatial Lag weighted by				
Common Border	0.0113	0.0144	-0.0058	0.0160
	(0.0274)	(0.0308)	(0.0297)	(0.0338)
Inverse Distance	0.1378	0.1900	0.3100	0.4947*
	(0.2272)	(0.2415)	(0.2334)	(0.2573)
Common Language	0.0364	0.0276	0.0645	0.0175
	(0.0616)	(0.0518)	(0.0423)	(0.0514)
Exports from non-OECD to OECD	-0.0185	0.0066	0.1719**	0.2374***
	(0.1220)	(0.1017)	(0.0849)	(0.0730)
Other Exports	-0.1528	-0.1195	0.0692	0.1262
	(0.1368)	(0.1228)	(0.0966)	(0.0881)
Pseudo R-Squared	0.839	0.828	0.838	0.842
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results. Error lags are included according to Moran test results in table 12. Column 1 does not include any error lags. Column 2 includes an error lag for Contiguity. Column 3 includes an error lag for Other Exports. Column 4 includes error lags for Common Border, Inverse Distance, and Other Exports.

Table 10: Exports by Country Group: Resources vs. Non-Resources

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Liberal Democracy	0.8137***	0.8090***	0.7323***	0.7546***
	(0.0626)	(0.0575)	(0.0538)	(0.0542)
Log GDP real	-0.0107	-0.0156**	-0.0260***	-0.0255***
	(0.0096)	(0.0079)	(0.0091)	(0.0089)
Log GDP real squared	-0.0034	-0.0036	-0.0047	-0.0050
	(0.0033)	(0.0034)	(0.0039)	(0.0042)
Log Population	-0.0107**	-0.0105**	-0.0027	-0.0067
	(0.0050)	(0.0045)	(0.0051)	(0.0052)
Log Population squared	-0.0012	-0.0026	-0.0023	-0.0024
	(0.0018)	(0.0017)	(0.0020)	(0.0020)
FDI flows in % of GDP	0.0002	-0.0001	0.0003	0.0000
	(0.0013)	(0.0002)	(0.0004)	(0.0010)
Trade Openness in % of GDP	-0.0001	0.0001	0.0003	0.0003
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0101	0.0010	-0.0210	-0.0417
	(0.0275)	(0.0262)	(0.0259)	(0.0306)
Share of Muslim Population	-0.0002	-0.0000	-0.0001	-0.0000
	(0.0005)	(0.0004)	(0.0004)	(0.0004)
Share of Christian Population	0.0003	0.0003	0.0001	0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.3081**	0.1949	-0.0678	-0.0580
	(0.1428)	(0.1347)	(0.1431)	(0.1597)
Spatial Lag weighted by				
Common Border	0.0002	-0.0003	-0.0382	-0.0309
	(0.0284)	(0.0312)	(0.0293)	(0.0305)
Inverse Distance	0.1782	0.2708	0.4195*	0.3977*
	(0.2297)	(0.2284)	(0.2386)	(0.2247)
Common Language	0.0268	0.0052	0.0149	0.0179
	(0.0599)	(0.0541)	(0.0485)	(0.0594)
Resource Exports from non-OECD to OECD	-0.0886	-0.0237	0.1424	0.2091**
	(0.1355)	(0.1055)	(0.1129)	(0.1062)
Other Resource Exports	-0.3040*	-0.1742	0.3294**	0.2533**
	(0.1845)	(0.1557)	(0.1419)	(0.1271)
Non-Resource Exports from non-OECD to OECD	-0.0328	0.0271	0.2611***	0.2664***
	(0.1207)	(0.0998)	(0.0988)	(0.0834)
Other Non-Resource Exports	-0.1292	-0.0784	0.1995*	0.2338**
	(0.1351)	(0.1155)	(0.1124)	(0.0937)
Pseudo R-Squared	0.831	0.817	0.815	0.828
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results in table 2. Column 1 does not include any error lags. Column 2 includes an error lag for Other Resource Exports. Column 3 includes error lags for Common Border and Inverse Distance. Column 4 includes an error lag for Common Border, Inverse Distance, and Other Non-Resource Exports.

Table 11: Exports by Country Group: High Income and High Human Rights

	(1)	(2)	(3)	(4)
	2000-2004	2005-2009	2010-2014	2015-2019
Liberal Democracy	0.8410***	0.8149***	0.7345***	0.7607***
	(0.0582)	(0.0569)	(0.0489)	(0.0514)
Log GDP real	-0.0216**	-0.0250***	-0.0308***	-0.0273***
	(0.0090)	(0.0077)	(0.0077)	(0.0080)
Log GDP real squared	-0.0059*	-0.0058	-0.0068*	-0.0063
	(0.0033)	(0.0036)	(0.0036)	(0.0041)
Log Population	-0.0117**	-0.0095**	-0.0025	-0.0065
	(0.0046)	(0.0045)	(0.0049)	(0.0049)
Log Population squared	-0.0010	-0.0016	-0.0026	-0.0024
	(0.0018)	(0.0017)	(0.0017)	(0.0018)
FDI flows in % of GDP	0.0003	0.0001	0.0003	0.0000
	(0.0013)	(0.0002)	(0.0004)	(0.0011)
Trade Openness in % of GDP	-0.0001	0.0002	0.0004*	0.0003
	(0.0002)	(0.0001)	(0.0002)	(0.0002)
Conflict	-0.0129	-0.0071	-0.0184	-0.0450
	(0.0277)	(0.0274)	(0.0264)	(0.0304)
Share of Muslim Population	-0.0003	-0.0003	-0.0002	-0.0000
	(0.0005)	(0.0005)	(0.0004)	(0.0004)
Share of Christian Population	0.0002	0.0001	0.0002	0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.2474*	0.1514	-0.1368	-0.0812
	(0.1414)	(0.1354)	(0.1488)	(0.1596)
Spatial Lag weighted by				
Common Border	-0.0123	-0.0085	-0.0541*	-0.0485
	(0.0293)	(0.0319)	(0.0287)	(0.0303)
Inverse Distance	0.1645	0.3279	0.5258**	0.4257**
	(0.2210)	(0.2237)	(0.2302)	(0.2140)
Common Language	0.0217	0.0072	0.0688	0.0434
	(0.0561)	(0.0541)	(0.0535)	(0.0628)
Exports from Low to High	0.0214	0.0157	0.1644*	0.2235**
	(0.1335)	(0.1075)	(0.0979)	(0.0926)
Other Exports	-0.0199	-0.0427	0.1938*	0.2391**
	(0.1515)	(0.1312)	(0.1146)	(0.1056)
Pseudo R-Squared	0.821	0.809	0.808	0.826
Number of observations	168	171	173	172

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Heteroskedasticity-robust standard errors are in parentheses. Error lags are included according to Moran test results in table 2. Columns 1 and 2 do not include any error lags. Columns 3 and 4 include error lags for Common Border, Inverse Distance, and Other Exports.

Table 12: Moran's I Test: Control function approach

	Chi-squared statistic			
Weighting Matrix	2000-2004	2005-2009	2010-2014	2015-2019
Contiguity	0.45	2.92*	2.30	3.31*
Inverse Distance	0.00	0.41	0.97	3.34*
Common Language	0.88	0.64	0.02	0.00
Total Exports	0.18	0.04	2.53	5.96**
Exports from non-OECD to OECD	0.03	0.85	0.88	0.23
Other Exports	0.72	1.24	7.51***	11.13***

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level.

Table 13: Imputation

	(1)	(2)	(3)	(4)	(5)
	Population_{DGD}	GDP_{WDI}	FDI_{UNCTAD}	Openness_{WDI}	Openness_{WDI}
Population_{WDI}	0.9973***				
	(0.0076)				
GDP_{IMF}		0.9100***			
		(0.0160)			
FDI_{WDI}			0.8821***		
			(0.0843)		
Openness_{DGD}				0.8348***	
				(0.1800)	
Implied Openness_{WDI}					0.9285***
					(0.0781)
Constant	212257.2	545.0131***	0.4091	39.0860***	6.6289
	(217238.5)	(136.74)	(0.3315)	(6.8953)	(5.1865)
R-Squared	1	0.960	0.797	0.623	0.841
Number of observations	2904	3367	3350	2900	3423

Notes: *, ** and *** denote significance at the 10%-, 5%- and 1%-level, respectively. Standard errors are in parentheses. Standard errors are clustered at the country level.

Appendix: Imputation

The first variable which we subject to imputation is population size. The data on population from the DGD by Gurevich and Herman (2018) is quite comprehensive. However, in this dataset, we are missing population size data for Taiwan. In the WDI by the World Bank (2023), however, there are data on the population size of Taiwan in the time periods that interest us. We impute the population size of Taiwan by first regressing population size according to the DGD on population size according to the WDI, including all countries for which data on population size is available in both datasets. The results are shown in column 1 of table 13. We then obtain the estimates to obtain the predicted population size of Taiwan in the respective years.

We analogously impute missing data on GDP per capita in constant 2015 USD in the World Bank (2023) data. In the data from the International Monetary Fund (2023) there is data on nominal GDP per capita in USD for several countries for which real GDP is missing in the data of the World Bank (2023). We thus first use the nominal GDP per capita data from the International Monetary Fund (2023) and a USD GDP deflator obtained from the WDI to obtain a variable measuring GDP per capita in 2015 USD implied by the nominal GDP per capita data of the International Monetary Fund (2023). We then regress GDP per capita in 2015 USD from the World Bank (2023) on the GDP per capita in 2015 USD implied by the data from the International Monetary Fund (2023) to obtain the predicted values of real GDP per capita for those countries for which the variable is missing in our data. The results of this regression are shown in column 2 of table 13. We use the predicted values from this regression for imputation.

For FDI flows as a percentage of GDP, there are data from the World Bank (2023), which partially complement our data from the UNCTAD (2023). As before, we impute the missing data from the UNCTAD (2023) by first regressing the FDI data from the UNCTAD (2023) on the FDI data from the World Bank (2023) and then using the predicted values for imputation. The results are shown in column 3 of table 13.

Lastly, we use imputation to complement our data on trade openness. Our variable of trade openness, as described above, is constructed by dividing the sum of a country's

exports and imports by its nominal GDP. This share is multiplied by 100 to obtain a percentage value. For some countries, this variable is missing due to missing data on nominal GDP from the World Bank (2023) data. We thus construct a variable measuring trade openness in the same way as described above, while using nominal GDP data from the DGD by Gurevich and Herman (2018), which partially complements the nominal GDP data from the World Bank (2023). We then regress this alternative measure of trade openness on our original measure to obtain the predicted values for trade openness which we use for imputation. The results are shown in column 4 of table 13.

Since we still have missing values on nominal GDP, we construct a third measure of trade openness by using another measure of nominal GDP. For some countries, there is no data on nominal GDP in the WDI, for which there is data on GDP per capita in constant USD and on population size. We thus obtain a value of nominal GDP implied by the World Bank (2023) data by multiplying the GDP per capita in constant 2015 USD by a USD GDP deflator for 2015 obtained from the World Bank (2023) and by the population size. As before, we then regress our original measure of trade openness on the newly constructed measure of trade openness and use the predicted values for imputation. The results are shown in column 5 of table 13.