ONLINE APPENDIX

"Pitfalls in the Study of Democratization: Testing the Emancipatory Theory of Democracy"[1]

Christian Welzel[2], *Ronald Inglehart*[3] & *Stefan Kruse*[4]

This is the Online Appendix to our article "Pitfalls in the Study of Democratization: Testing the Emancipatory Theory of Democracy," published in the *British Journal of Political Science* (volume 46) in 2015. The article is in large part a response to the criticism by Dahlum and Knutsen (2015) in the same journal. This Online Appendix documents our simulated data, the procedure to estimate emancipative values for the years 1980 and 2010, and our replication of Dahlum and Knutsen's analysis. Our data are available for download on the Internet, at https://dataverse.harvard.edu/dataverse/BJPolS.

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1 *British Journal of Political Science*, 2015 (volume 46). Exact page numbers were not known at the time of finalizing this Online Appendix.

2 Center for the Study of Democracy, Leuphana University, Lueneburg, Germany; Laboratory for Comparative Social Research (LCSR), National Research University – Higher School of Economics, Moscow and St. Petersburg, Russia. Email: cwelzel@gmail.com.

3 Institute for Social Research (ISR), University of Michigan, Ann Arbor, USA; National Research University – Higher School of Economics, Moscow and St. Petersburg, Russia. Email: rfi@umich.edu.

4 Center for the Study of Democracy, Leuphana University, Lueneburg, Germany. Email: stefan_kruse@gmx.de.

1. SIMULATION

For our article, we have created virtual data in a typical TSCS framework. It matches 36 hypothetical countries and 20 years, generating 780 country-year observations. We created this virtual reality as follows:

(1) In year 1, both democratic demands and supplies exist at low, medium and high levels, so that all combinations between the two are present.
(2) From year 1 to 20, demands change in incremental moves on stable country trajectories, mostly on increasing slopes but sometimes also declining.
(3) Demands follow at a one-year lag similar trajectories in economic development.
(4) Supplies do not change until year 15, but from year 15 to 16, sudden shifts occur in some countries though not in others and in opposite directions and to different extents.
(5) These shifts move supply levels *exactly* to where the demands were in the year before the shifts.
(6) From year 16 to 20, supplies are stable again.
(7) From year 1 to 15, supply shifts in countries with incongruent demands are blocked by an international constellation that shields incongruent regimes from domestic pressures—like the situation that existed during the Cold War. In year 15 this constellation dissolves. We represent this condition by a dummy variable called "switch" which we code 1 for year 15 and 0 otherwise.

To download the simulated data, visit the Internet and go to https://dataverse.harvard.edu/dataverse/BJPolS.

2. ESTIMATION

For 107 countries, rounds one to six of the World Values Surveys include at least two separate measures of emancipative values. When we take these 107 countries and regress the score of the latest available survey on (a) that of the earliest available one, (b) the temporal distance between the two surveys in years and (c) the interaction between the earliest score and the temporal distance, we explain 86 percent of the variation in emancipative values at the latest point in time. This is a very high explained variance, showing a very strong path dependency and stability in country trajectories. The coefficients we obtain from this regression are as follows (all significant at the 0.001-level):

$EVI_{latest} = 0.442 + 1.134 * a + 0.004 * b + 0.13 * ab$

a: EVI score in earliest survey (mean centered)

b: distance in years from earliest to latest survey (mean centered)

ab: *a* * *b*

This formula shows that later emancipative values are higher (1) when earlier emancipative values are higher, (2) when more time has passed since the earlier measures (indicating a growth trend) and (3) when the product term between *a* and *b* is higher, indicating growth with increasing marginal returns: in countries with higher levels of emancipative values, these values grow on a steeper slope. The best case in point for the latter aspect is Sweden: this country started out with one of the highest levels of emancipative values in the early 1980s and then experienced the steepest further growth among all surveyed countries.

We used this formula to estimate each country's emancipative values in 2010 from the latest available survey, as follows:

Compute $EVI_{2010} = 0.442 + 1.134 * a + 0.004 * b + 0.13 * ab$

a: EVI score in latest survey (mean centered)

b: distance in years from latest survey to 2010 (mean centered)

ab: *a* * *b*

Now, we can turn the direction of the prediction and estimate backward the scores in emancipative values in the earliest surveys from those of the latest, again taking temporal distance and its interaction with the base score into account. We obtain again an 86 percent explained variance but the coefficients of the temporal distance and the interaction now switch signs since we estimate into the opposite temporal direction (predicting backward, an increase turns into a decline):

Compute $EVI_{earliest} = 0.405 + 0.706 * a - 0.003 * b - 0.02 * ab$

a: EVI score in latest survey (mean centered)

b: distance in years from latest to earliest survey (mean centered)

ab: *a* * *b*

Accordingly, we used this formula to estimate each country's emancipative values in 1980 from the earliest available survey, as follows:

Compute EVI_{1980} = 0.405 + 0.706 * *a* - 0.003 * *b* - 0.02 * *ab*

a: EVI score in earliest survey (mean centered)

b: distance in years from earliest survey to 1980 (mean centered)

ab: *a* * *b*

Note that the accuracy of these estimations is at 86 percent, perhaps even higher because we estimate scores in both 1980 and 2010 from the temporally closest real measures, which keeps the uncertainty in the temporal distance term of our equation at bay and leaves the really observed score with by far the greatest impact.

Having estimates of emancipative values for 1980 and 2010, we further estimated the amount and direction of change in these values over the last 30 years (by subtracting the 1980 scores from the 2010 scores). Moreover, we estimated the misfit of democracy in 1980 (using Welzel's citizen rights index) to emancipative values in 1980 (by regressing the former on the latter and saving the unstandardized residuals).[5] We also estimated the inverse misfit, that of emancipative values to democracy in 1980 (again by regressing the former on the latter and saving the residuals).

These are the estimates used in Figure 3 of our article. The dataset is available for download on the Internet at https://dataverse.harvard.edu/dataverse/BJPolS.

[5] Welzel, 2013, 256-263.

3. REPLICATION

We point out in our article the incapacity of country-year data to uncover the impact of glacially rising emancipative values on disruptive shifts in democracy levels. There is nothing one can do to resolve this inherent weakness of country-year data and our replication is no exception. Its sole purpose is to demonstrate that Dahlum/Knutsen's findings do not even hold in an already weak framework. Specifically, our replication shows that emancipative values have a consistently significant effect on later democracy when the effective democracy index is used. It should be noted in this context that Alexander/Welzel's (2011) detailed validity test has shown the effective democracy index to be the most reliable and valid measure of democracy. Responding to false criticism, Alexander/Inglehart/Welzel (2012) have further solidified this conclusion. What is more, when we compare the impact of emancipative values on democracy with the impact in the opposite direction, the impact of values on democracy is always much stronger. Again, the conclusion is this: Dahlum/Knutsen's claim that mass values consistently show no significant impact on subsequent democracy and are instead themselves produced by democracy does not hold—not even in the weak TSCS framework they rely on.

One should also note that our replication improves on Dahlum/Knutsen's original analysis in various ways. First, our replication uses considerably more countries; second, it uses data from a wider set of cross-national surveys; third, it applies more variegated imputation techniques; and, fourth, it focuses on an improved version of self-expression values, named emancipative values by Welzel (2013).

3.1 COUNTRY COVERAGE

Our sample size benefits from the recently released 6th wave of the World Values Surveys (WVS). We therefore have observed emancipative values for 52 additional country-year observations during 2010-2013 in comparison to Dahlum/Knutsen. Our sample includes all societies ever surveyed by the European Values Study (EVS) and the WVS, provided that at least two different surveys in time exist (Appendix-Table 1). We also test whether including all societies that were surveyed at least once by the EVS/WVS affects our results.

In contrast to Dahlum/Knutsen we include China because information on socio-economic power resources is available, WVS-data for China have few missings and the Asianbarometer provides additional information for imputing missing values. We also include Bosnia as it has two observations for emancipative values. Against this backdrop our imputed panel dataset covers 103 countries over the period from 1980 to 2010: N = 3,090 country-year units.

Appendix-Table 1: Country coverage and the number of available EVS/WVS surveys

Country	*Total number of WVS surveys*	*Total number of EVS surveys*	*Total number of EVS/WVS surveys*	*Country*	*Total number of WVS surveys*	*Total number of EVS surveys*	*Total number of EVS/WVS surveys*
Albania	2	1	3	Libya	1	0	1
Algeria	2	0	2	Lithuani	1	3	4
Andorra	1	0	1	Luxemb.	0	2	2
Argentin	5	0	5	Macedoni	2	1	3
Armenia	2	1	3	Malaysia	2	0	2
Australi	4	0	4	Mali	1	0	1
Austria	0	3	3	Malta	0	4	4
Azerbaij	2	1	3	Mexico	7	0	7
Banglade	2	0	2	Moldova	3	1	4
Belarus	3	2	5	Monteneg	2	1	3
Belgium	0	4	4	Morocco	3	0	3
Bosnia	2	1	3	Netherld	2	4	6
Brazil	2	0	2	New Zeal	3	0	3
Bulgaria	2	3	5	Nigeria	4	0	4
Burkina	1	0	1	Norway	2	3	5
Canada	2	2	4	Pakistan	3	0	3
Chile	5	0	5	Peru	4	0	4
China	5	0	5	Philippi	3	0	3
Colombia	4	0	4	Poland	4	3	7
Croatia	1	2	3	Portugal	0	3	3
Cyprus	2	1	3	Qatar	1	0	1
Czech Republic	0	3	3	Romania	3	3	6
Denmark	0	4	4	Russia	4	2	6
Dominican Rep	1	0	1	Rwanda	2	0	2
Ecuador	1	0	1	Saudi Ara-	1	0	1
Egypt	3	0	3	Serbia	2	1	3
El Salva	1	0	1	Singapor	2	0	2
Estonia	2	3	5	Slovakia	2	3	5
Ethiopia	1	0	1	Slovenia	3	3	6
Finland	3	3	6	South Afri-	5	0	5
France	1	4	5	South Ko	6	0	6
Georgia	2	1	3	Spain	5	4	8
Germ-W.	3	4	7	Sweden	5	4	8
Ghana	2	0	2	Switzerl	3	1	4
Greece	0	2	2	Taiwan	2	0	2
Guatemal	1	0	1	Tanzania	1	0	1
Hungary	3	3	6	Thailand	1	0	1
Iceland	0	4	4	Trin-Tob	2	0	2
India	4	0	4	Tunisia	1	0	1
Indonesi	2	0	2	Turkey	5	2	6
Iran	2	0	2	U.S.A.	5	2	7
Iraq	3	0	3	UK	2	4	6
Ireland	0	4	4	Uganda	1	0	1
Israel	1	0	1	Ukraine	3	2	5
Italy	1	4	5	Uruguay	3	0	3
Japan	5	0	5	Uzbekistan	1	0	1
Jordan	3	0	3	Venezuel	2	0	2
Kazakhstan	1	0	1	Vietnam	2	0	2
Kuwait	1	0	1	Yemen	1	0	1
Kyrgyzsta	2	0	2	Zambia	1	0	1
Latvia	1	3	4	Zimbabwe	2	0	2
Lebanon	1	0	1				

3.2 VARIABLES AND INDEX CONSTRUCTION

Freedom House Index

The Freedom House Index (FHI) used here is based on the sum of the inverted Freedom House ratings for "civil liberties" and "political rights" (each ranging from 1 to 7) minus 2. The resulting scores range from 0 to 12 (higher scores indicate more freedom) and have been normalized into a scale ranging from 0 to 1.

Effective Democracy Index

The Effective Democracy Index (EDI) reflects the extent to which democratic rights are effectively respected in the practice of power: it is the product of the 0-1 standardized FHI with the also 0-1 standardized mean score of the World Bank's rule of law and control of corruption indicators (ROL). The FHI represents the "democracy" base-component of "effective democracy." The ROL represents the "effective-making" factor relative to the base-component. In producing effective democracy, the two components interact, hence their multiplicative combination: EDI = FHI * ROL. Thus, the EDI is a strictly conditional measure of democracy: it does not measure just democracy but democracy *insofar as* its empowering rights are put into real practice by rule of law. The EDI's construction and its empirical qualities are described in Alexander/Welzel (2011: 275) and re-validated against erroneous criticism in Alexander/Inglehart/Welzel (2012). Dahlum/Knutsen's re-construction of the EDI differs from the original methodology suggested by Alexander/ Welzel because the authors only use either the rule of law or control of corruption scores to calculate the EDI, instead of using the mean of both sub-components to obtain an overall index of rule of law (2011: 276). We stick to the original methodology because it produces a more reliable ROL score.

Emancipative values

Our analysis builds on "*emancipative values*" because this construct is both a conceptual and empirical improvement of the older construct of *self-expression values* used by Dahlum/Knutsen. The construct of emancipative values excludes anything that is not directly related to the definition of emancipation. The orientations included in "*self-expressive values*" are too broad against the definition of emancipation, as for instance it includes happiness, trust and signing petitions—none of which is a value orientation. Emancipative values, by contrast, represent an additive twelve-item index, composed of four sub-indexes: an autonomy values index (based on independence, imagination but not obedience as desired child qualities), a voice values index (based on priorities for freedom of speech and people's say ion national as well as local and job affairs), an equality values index (based on desiring women's equal access to education, jobs and power), and a choice values index (based on the acceptance of divorce, abortion and homosexuality). The index construction is described in further detail and positively tested under reliability and validity criteria in Welzel (2013: 66-69). The theoretical scale range of emancipative values is from 0 to 1.0. Empirically, scores at the country level range from a low of about 0.20 in Pakistan to a high of about 0.75 in Sweden. Individual-level scores are strongly mean-clustered and single-peaked in each national sample. Hence, country-wise arithmetic means in emancipative values reliably represent "central tendencies" in emancipative values.

Socioeconomic Resources

To measure the resources available to the average resident of a country we use *Vanhanen's Index of Power Resources*, which indicates the level and spread of economic, cognitive and social resources. The distribution of property and de-concentration of companies reflect the dispersion of economic resources. Literacy and enrollment in higher education measure cognitive resources. Social resources are proxied by the size of the non-agricultural laborforce and urbanization. Assuming that the constituent components amplify rather than supplement each other we follow Vanhanen and use the multiplicative instead of the additive combination of these sub-indexes to measure overall socioeconomic resources. Vanhanen`s index is just given for the years 1948, 1958, 1968, 1978, 1988, 1998. Therefore missing values in Vanhanen`s index are replaced with respective values for the ten-year period.

Democratic tradition

To measure the persistence of democracy we use the "democracy stock" index from Gerring et al. (2005), which we label *democratic tradition*. This variable is the sum of the Polity2 index scores (from -10 to +10) for each country from 1900 to the present, adjusted by a one percent annual depreciation rate, in order to reflect that more distant years receive less weight than recent ones. Data on the democratic stock are just available till 2005. We impute every missing value for this variable from 2005.

Years of schooling

To measure a society's intellectual resources we use the number of schooling years obtained by the average person in a society (Barro/Lee 2010). Missing values are linearly interpolated.

Ethnic fractionalization

Ethnic fractionalization indicates the probability that two randomly selected people from a given country will not share the same racial and linguistic characteristics (Alesina et al. 2003). We control for the effect of ethnic diversity on democracy because racial and linguistic characteristics can be used to create hostilities between groups within a community of equals. The degree of ethnic fractionalization ranges from 0 to 1.

Economic Inequality

Economic inequality is measured by the Gini index from the World Bank, which reflects the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. The index ranges from of 0 (equality) to 100 (inequality).

Public expenditures for welfare minus military

We calculate public investment in education and health as a percentage of total government expenditures minus investment in defense as a percentage of total government expenditures, yielding a percentage difference index from –100 to +100.

Exports

Assuming that countries with higher levels of economic integration are more likely to be exposed to diverse new ideas we control for the potential effect of trade on democracy. We use exports in percent of GDP from the World Bank as an indicator of trade.

Percent Protestants minus Muslims

We combine the share of Protestants and the share of Muslims as percentage of population in 1980 into a percentage difference index ranging from -100 to +100 and finally normalize this index into a scale ranging from 0 to 1.

3.3 MULTIPLE IMPUTATION - THE PREDICTIVE MODEL

To replicate the results of Dahlum/Knutsen we apply multiple imputation and create five rectangular datasets. In comparison to single imputation, which treats imputed values as if they were observed and hence underestimates the standard errors, multiple imputation corrects for the uncertainty of imputed values by taking into account the variation in the parameter estimates across different imputations. To obtain a single set of parameter estimates the results for each imputed dataset are collapsed (Little/Rubin 2002).

To apply multiple imputation we use the AMELIAII algorithm, which extracts relevant information from the observed portions of a dataset to impute multiple values for each missing cell constructing multiple "completed" datasets (Honaker/King/Blackwell 2010: 561). Multiple imputation involves imputing *m* different values for each missing value by creating *m* different datasets. The imputed values across these created datasets reflect the uncertainty about the missing data (Honaker/King/Blackwell 2013: 3).

In order to achieve the maximum predictive power of the imputation we include every variable that is used in the analysis as well as any other available information with predictive content borrowing from the regional barometer studies in Africa, Asia, Latin America and the Arab countries (Appendix-Table 2). In contrast to Dahlum/Knutsen we also use data from the Asiabarometer, which contains additional information for thirteen countries from East and Southeast Asia over the period of 2002 to 2012.

Appendix-Table 2: Variables used in the predictive model

Variable name	**Data source**
Citizen Rights Index CRI	Welzel (2013)
Effective Democracy Index	Alexander/Welzel (2011)
Freedom House – normalized	Freedom House (2013)
Ethnic fractionalization	Alesina et al. (2003)
Average Schooling Years, Female and Male (15+)	Barro/Lee (2010)
Average Schooling Years, Female and Male (25+)	Barro/Lee (2010)
Democratic stock	Gerring et al. (2005)
Emancipative values	Welzel (2013)
% Protestants minus % Muslims	Vanhanen (2011)

to be continued …

… continuation (Appendix-Table 2):

Variable name	**Data source**
Index of Power Resources (multiplicative)	Vanhanen (2011)
Public spending on education, total (% of government expenditure)	World Bank
Health expenditure, public (% of government expenditure)	World Bank
Exports (% of GDP)	World Bank
Gini Index	World Bank
Regime Durability	PolityIV Project Data Set
Revised Combined Polity Score	PolityIV Project Data Set
Corruption Perceptions Index	Transparency International
Control of Corruption – Estimate	World Bank
Rule of Law – Estimate	World Bank
Fuel Exports (% of Merchandise Exports)	World Bank
GDP per Capita, PPP (Constant International USD)	World Bank
Military Expenditure (% of Government Expenditure)	World Bank
Ores and Metals Exports (% of Merchandise Exports)	World Bank
Physical Integrity Rights Index	Cingranelli/Richards 2010
Rule of Law	Freedom House
question the actions of leades or more respect for authority	Afrobarometer
attend demonstration	Afrobarometer
Satisfaction with democracy	Afrobarometer
1st 2nd most important problem: "Discrimination/inequality"	Afrobarometer
1st 2nd most important problem: "Gender issues/women rights"	Afrobarometer
Most people can betrusted OR you must be very careful	Afrobarometer
Which Identity group you feel most strongly attached? national OR group ID	Afrobarometer
trust in army	Afrobarometer
trust in courts	Afrobarometer
trust in electoral commission	Afrobarometer
trust in government broadcast	Afrobarometer
trust in government news	Afrobarometer
trust in indipendent news	Afrobarometer
trust in indipendent broadcast	Afrobarometer
trust in known others	Afrobarometer
trust in local government	Afrobarometer
trust in neighbours	Afrobarometer
trust in opposition party	Afrobarometer
trust in other identity group	Afrobarometer
trust in others	Afrobarometer
trust in own identity group	Afrobarometer
trust in parlament	Afrobarometer
trust in police	Afrobarometer
trust in president	Afrobarometer
trust in relatives	Afrobarometer
trust in ruling party	Afrobarometer
trust in traditional leaders	Afrobarometer
1st 2nd most important: Giving people more say AND Protecting peoples right to	Afrobarometer
Have you ever done: attend demonstration	Arabbarometer
Most people can betrusted OR you must be very careful	Arabbarometer
Have you ever done: signing a petition	Arabbarometer
trust in army	Arabbarometer
trust in courts	Arabbarometer
trust in government	Arabbarometer
trust in parliament	Arabbarometer
trust in police	Arabbarometer
trust in president	Arabbarometer
Abortion justifiable	Asiabarometer
Greater respect for authority is good, bad, dont mind	Asiabarometer

to be continued …

… continuation (Appendix-Table 2):

Variable name	**Data source**
Joining a boycott	Asiabarometer
Attending lawful demonstration	Asiabarometer
Most people can be trusted	Asiabarometer
How important is god	Asiabarometer
Feeling of happiness	Asiabarometer
Homosexuality justifiable	Asiabarometer
Signing a petition	Asiabarometer
trust in army	Asiabarometer
trust in courts	Asiabarometer
trust in central government	Asiabarometer
trust in local government	Asiabarometer
trust in media	Asiabarometer
trust in parliament	Asiabarometer
trust in police	Asiabarometer
political leaders is to accomplish their goals even	Asianbarometer
political leader really believes in his position, he should refuse to compromise	Asianbarometer
political leader should tolerate the views of those who challenge his political	Asianbarometer
political leader enjoys majority support, he should implement his own agenda	Asianbarometer
Government leaders are like the head of a family	Asianbarometer
government should decide whether certain ideas should be allowed to be discussed	Asianbarometer
get rid of parliament and elections and have a strong leader decide	Asianbarometer
If we have political leaders who are morally upright, we can let them decide	Asianbarometer
Being a student, one should not question the authority of their teacher	Asianbarometer
Have you ever done: attend demonstration	Asianbarometer
Most people can betrusted OR you must be very careful	Asianbarometer
How important is God in your life	Asianbarometer
Have you ever done: signing a petition	Asianbarometer
trust in army	Asianbarometer
Trustcourts	Asianbarometer
trust in electoral commission	Asianbarometer
trust the press	Asianbarometer
Trustparl	Asianbarometer
trust in police	Asianbarometer
trust in TV	Asianbarometer
% of households with	ITU/ICT Indicators
% of households with	ITU/ICT Indicators
% of households with	ITU/ICT Indicators
% of households with	ITU/ICT Indicators
% of households with	ITU/ICT Indicators
% of households with	ITU/ICT Indicators
Rating on level of civil disorder	Int. Country Risk Guide
Rating on deaths in organized conflict	Economist Intelligence Unit
Rating on likelihood of violent demonstrations	Economist Intelligence Unit
Rating on level of internal conflict	Int. Country Risk Guide
Log assassinations per log capita	Banks CNTS Data Archive
Log riots per log capita	Banks CNTS Data Archive
Whether abortion can be justified	Latinobarometer
Wether changes in way of life towards greater respect for authority would be good	Latinobarometer
Question the actions of leades or more respect for authority	Latinobarometer
Have you ever done: attend demonstration	Latinobarometer
Would you describe yourself devout	Latinobarometer
Most people can betrusted OR you must be very careful	Latinobarometer
How important is God in your life	Latinobarometer

to be continued …

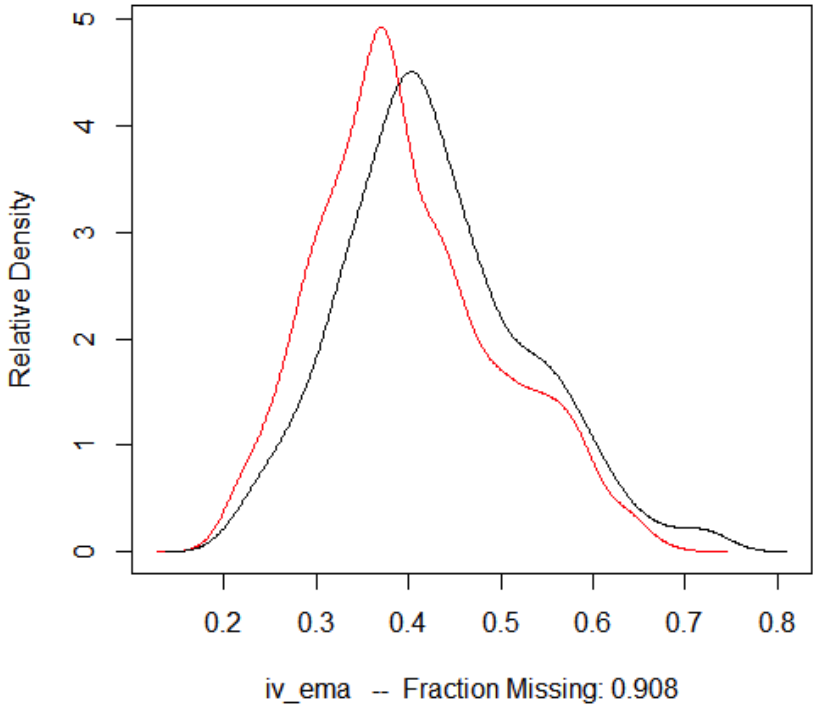
… continuation (Appendix-Table 2):

Variable name	**Data source**
Whether homosexuality can be justified	Latinobarometer
are you satisfied with your life	Latinobarometer
How proud are you to be (nationality)	Latinobarometer
How frequently do you go to church	Latinobarometer
Have you ever done: signing a petition	Latinobarometer
Do you practice your religion	Latinobarometer
trust in army	Latinobarometer
trust in church	Latinobarometer
trust in government	Latinobarometer
trust the press	Latinobarometer
trust in parliament	Latinobarometer
trust in police	Latinobarometer
trust in president	Latinobarometer
trust in TV	Latinobarometer
1st 2nd most important: increase citizen participation + protect freedom of speech	Latinobarometer
Aims of country: giving people more say	EVS/WVS
Aims of country: fight against crime	EVS/WVS
Approval of Abortion	EVS/WVS
Attending demonstration	EVS/WVS
Attitude on making major changes	EVS/WVS
Autonomy Index	EVS/WVS
Feeling of Happiness	EVS/WVS
Importance of God	EVS/WVS
Interpersonal trust	EVS/WVS
Life Satisfaction	EVS/WVS
Most important: 1st and 2nd choice	EVS/WVS
Most important: stable economy	EVS/WVS
National Pride	EVS/WVS
National trust	EVS/WVS
Participation in boycott	EVS/WVS
Participation in strike	EVS/WVS
Post-Materialist Index	EVS/WVS
Qualities that children can be encouraged to learn at home: faith	EVS/WVS
Qualities that children can be encouraged to learn at home: hard work	EVS/WVS
Qualities that children can be encouraged to learn at home: perseverance	EVS/WVS
Qualities that children can be encouraged to learn at home: independence	EVS/WVS
Secular-rational Values	EVS/WVS
Signing petitions	EVS/WVS
Tolerance of Homosexuality	EVS/WVS
Aims of respondent: Protecting freedom of speech	EVS/WVS
Aims of respondent: giving people more say	EVS/WVS
Using violence for pol. Goals	EVS/WVS
Prostitution justifiable	EVS/WVS

To impute values for variables that vary only slightly within countries but largely between them the imputation model includes second order polynomials of time, which is similar to the specification by Dahlum/Knutsen.

As a result we obtain five rectangular datasets, each with 81x31 observations including all societies that were surveyed by WVS/EVS at least twice.[6] Appendix-Figure 1 shows the distribution of the mean imputations (red line) and the distribution of observed values (black line).

Appendix-Figure 1: Observed and imputed scores of emancipative values



3.4 RESULTS

We estimate the effect of emancipative values on democracy measured by the EDI and the FHI. In order to compare the effect of values on both measures, the two democracy variables are normalized into a scale range from a theoretical minimum of 0 to a theoretical maximum of 1. Since temporal order and non-spuriousness are necessary conditions for causality in statistical relationships, we lag emancipative values and control for confounding factors, which are also lagged. To replicate the results of Dahlum/Knutsen we lag emancipative values as well as all other independent variables by seven years before we systematically test the influence of different time lags for each estimator.

Appendix-Table 3 includes the imputation corrected estimates over all imputed datasets. Linear regression with panel-corrected standard errors (Model A1 and A2) shows a positive and highly significant effect of values on democracy measured by the EDI. However, the effect on the FHI is not significant. By adding further covariates (Model A3 and A4), including a society's level of economic inequality, government expenditures and the level of exports, the results

[6] We obtain 103x31 observations including all societies that were surveyed by WVS/EVS at least once.

are confirmed. The results are similar to including all societies that were surveyed at least once by the EVS /WVS (evidence available upon request).

Disproving previous criticism, Alexander/Welzel (2011) as well as Alexander/Inglehart/Welzel (2012) have provided ample evidence that the EDI is both a more valid and more reliable measure of democracy in true sense than the FHI. Given this evidence, results relating to the EDI are more conclusive than those related to the FHI.

To handle omitted variable bias and measurement error Dahlum/Knutsen suggest to run country fixed effects models, since the FE-estimator is based on the presumption of time-invariant omitted variables. However, the notion that the most important omitted variables are time-invariant doesn't seem plausible (Angrist/Pischke 2008). More specifically, the emancipatory theory of democracy claims that what matters for the countries' varying degrees of democracy are *level* differences in emancipative values that accumulated over *long* periods of time, not small incremental moves in these values on a year-by-year basis. Country-fixed effects eliminate all the level differences between countries and reduce variation in emancipative values solely to the annual differences within countries, which are minuscule. Doing so tests a model that runs exactly counter the logic of the emancipatory theory of democracy.

Although we do not believe that any conclusions can be drawn referring to the emancipatory theory of democracy from panel data with country-year as the unit of observation, Appendix-Table 3 also shows the results for the fixed effects estimator (Model B1) *and* the random effects estimator (Model B2). As expected, neither the fixed effects estimator (Model B1) nor the random effects estimator show any significant effect for the imputation corrected parameters independently of the democracy indicator.[7]

[7] Sensitivity analysis reveals that, in country fixed effects models, the sign of the coefficients for emancipative values strongly depend on the lag structure. Lags no longer than T-3 tend to show rather positive coefficients whereas longer lags are more likely to show negative coefficients.

Appendix-Table 3: Panel estimation using OLS with panel corrected standard errors, Fixed Effects and Random Effects

	A1 PCSE	A2 PCSE	A3 PCSE	A4 PCSE	B1 Fixed Effects	B2 Fixed Effects	B3 Random Effects	B4 Random Effects
VARIABLES	Effective Democracy Index	Freedom House Index	Effective Democracy Index	Freedom House Index	Effective Democracy Index	Freedom House Index	Effective Democracy Index	Freedom House Index
Emancipative values t-7	0.111**	0.00675	0.0987**	0.00552	-0.0787	-0.185	-0.0493	-0.168
	(0.0434)	(0.0622)	(0.0430)	(0.0607)	(0.0910)	(0.232)	(0.0862)	(0.220)
Socioeconomic resources t-7	0.00374***	0.00145	0.00372***	0.00150	-4.34e-05	-0.00121	0.000417	-0.000682
	(0.000687)	(0.00111)	(0.000706)	(0.00103)	(0.00101)	(0.00224)	(0.00103)	(0.00204)
Democratic tradition t-7	0.000382***	0.000339***	0.000384***	0.000340***	6.62e-05	-0.000168	0.000275***	0.000171
	(2.84e-05)	(5.90e-05)	(2.81e-05)	(5.78e-05)	(8.19e-05)	(0.000198)	(5.79e-05)	(0.000106)
% Protestants minus Muslims t-7	0.304***	0.349***	0.314***	0.342***	0.304	1.032**	0.463***	0.486***
	(0.0292)	(0.0701)	(0.0309)	(0.0676)	(0.273)	(0.441)	(0.0658)	(0.0968)
Years of schooling t-7	0.0133***	0.00868*	0.0116***	0.0100	0.0185***	0.0327**	0.0153***	0.0269**
	(0.00239)	(0.00511)	(0.00268)	(0.00627)	(0.00583)	(0.0145)	(0.00506)	(0.0110)
Ethnic fractionalization t-7	-0.178***	-0.167***	-0.173***	-0.162***	-0.265	-0.607	-0.281***	-0.247***
	(0.0235)	(0.0526)	(0.0250)	(0.0505)	(0.294)	(0.535)	(0.0804)	(0.0914)
Public expenditures for welfare minus military t-7			0.000126	0.000178	0.00193***	0.00387***	0.00159***	0.00365***
			(0.000361)	(0.000793)	(0.000619)	(0.00119)	(0.000586)	(0.00118)
Economic inequality t-7			-0.000843*	2.77e-05	0.000693	0.00181	0.000355	0.00174
			(0.000439)	(0.000620)	(0.000777)	(0.00202)	(0.000790)	(0.00190)
Exports t-7			0.000227	-0.000326	-4.63e-05	7.76e-05	1.30e-05	-1.59e-06
			(0.000208)	(0.000351)	(0.000333)	(0.000846)	(0.000313)	(0.000692)
Constant	0.141***	0.463***	0.174***	0.463***	0.241*	0.142	0.186***	0.311**
	(0.0237)	(0.0458)	(0.0296)	(0.0491)	(0.138)	(0.236)	(0.0669)	(0.129)
Observations	1,944	1,944	1,944	1,944	1,944	1,944	1,944	1,944
R-squared	0.638	0.293	0.634	0.304	0.959	0.846	0.754	0.516
Number of number	81	81	81	81	81	81	81	81

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All independent variables are lagged by seven years. Linear regression models with panel corrected standard errors (OLS-PCSE) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels. Fixed effects models use cluster-robust standard errors. Arellano-Bond und System-GMM models consider Vanhanen-Index of socioeconomic ressources, welfare expenditures and emancipative values are treated as endogenous variables.

Annual observations are not appropriate for discovering long-term associations between variables with glacial and disruptive change patterns. Hence, we do not apply GMM-estimators to annual panel data. A more promising approach to test the long-term contribution of emancipative values, while simultaneously accounting for these values' potential endogeneity to democracy, is to test if earlier values have an effect on later democracy, independent of the influence they obtain from preceding democracy (King/Keohane/Verba 1995: 251; Welzel 2013). Therefore we include measures of democracy from an even earlier time as an additional predictor. Moreover, in order to check whether the "timing" affects our results we systematically change the lags of all predictor variables synchronously from T-7 to T-1. The form of the equations tested is

$$Y_{t0} = Y_{t-i-1} + X_{t-i} + \varepsilon$$

where *X* is a vector of all independent variables and *i* refers to the time lag ranging from one to seven.

To address the problem of serially correlated observations we estimate panel-corrected standard errors und compare them to linear regression estimations (Beck & Katz 1995; Beck 2001).

To sum up, the results of the dynamic panel estimations add further evidence to the impact of values on the more reliable and valid democracy measure, the EDI. Appendix-Tables 4 and 5 show the results for OLS and linear regression with panel corrected standard errors. Appendix-Table 6 summarizes the coefficients of emancipative values for T-1 to T-7 for each of the imputed datasets.

Appendix-Table 4: Dynamic OLS estimations using different time lags

	C1L1	C1L2	C1L3	C1L4	C1L5	C1L6	C1L7	C2L1	C2L2	C2L3	C2L4	C2L5	C2L6	C2L7
Time lag	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7
Dependent variable	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democra-cy Index	Effective Democra-cy Index	Effective Democra-cy Index	Effective Democra-cy Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index
Lagged Dependent Variable t-i-1	0.847***	0.825***	0.815***	0.806***	0.797***	0.789***	0.776***	0.865***	0.814***	0.765***	0.719***	0.672***	0.629***	0.583***
	(0.0139)	(0.0150)	(0.0182)	(0.0228)	(0.0224)	(0.0205)	(0.0247)	(0.0162)	(0.0168)	(0.0190)	(0.0208)	(0.0216)	(0.0238)	(0.0252)
Emancipative values t-i	0.0817***	0.0969***	0.0912**	0.102**	0.105**	0.115**	0.117**	0.0586	0.0718	0.0820	0.0992	0.109	0.117	0.121
	(0.0301)	(0.0361)	(0.0376)	(0.0460)	(0.0511)	(0.0514)	(0.0569)	(0.0490)	(0.0564)	(0.0647)	(0.0692)	(0.0766)	(0.0772)	(0.0839)
Socioeconomic re-sources t-i	0.000632***	0.000669***	0.000706**	0.000581**	0.000506*	0.000409	0.000367	-0.000185	-0.000194	-0.000166	-0.000365	-0.000448	-0.000562	-0.000702
	(0.000220)	(0.000246)	(0.000278)	(0.000270)	(0.000293)	(0.000308)	(0.000351)	(0.000296)	(0.000352)	(0.000400)	(0.000435)	(0.000468)	(0.000473)	(0.000494)
Democratic tradition t-i	4.48e-05***	4.88e-05***	4.76e-05***	5.07e-05***	4.97e-05***	4.99e-05***	5.17e-05***	3.03e-05**	3.71e-05**	4.19e-05**	5.21e-05***	5.73e-05***	6.36e-05***	7.16e-05***
	(8.66e-06)	(1.06e-05)	(1.05e-05)	(1.18e-05)	(1.27e-05)	(1.27e-05)	(1.48e-05)	(1.28e-05)	(1.49e-05)	(1.64e-05)	(1.76e-05)	(1.86e-05)	(1.92e-05)	(2.05e-05)
% Protestants minus Muslims t-i	0.0289***	0.0376***	0.0484***	0.0589***	0.0676***	0.0768***	0.0886***	0.0186	0.0349**	0.0545***	0.0767***	0.0970***	0.122***	0.150***
	(0.00885)	(0.0103)	(0.0109)	(0.0119)	(0.0129)	(0.0135)	(0.0151)	(0.0137)	(0.0163)	(0.0192)	(0.0206)	(0.0225)	(0.0243)	(0.0254)
Years of schooling t-i	0.00216**	0.00296***	0.00404***	0.00506***	0.00625***	0.00740***	0.00841***	0.00476***	0.00724***	0.0101***	0.0129***	0.0163***	0.0193***	0.0223***
	(0.000952)	(0.00112)	(0.00120)	(0.00125)	(0.00137)	(0.00142)	(0.00148)	(0.00138)	(0.00175)	(0.00183)	(0.00206)	(0.00219)	(0.00242)	(0.00248)
Ethnic fractionalization t-i	-0.0269***	-0.0307***	-0.0310***	-0.0310***	-0.0311***	-0.0319***	-0.0324***	-0.0300***	-0.0359**	-0.0386**	-0.0375**	-0.0371*	-0.0377*	-0.0383*
	(0.00777)	(0.00843)	(0.00908)	(0.0100)	(0.0109)	(0.0116)	(0.0119)	(0.0115)	(0.0140)	(0.0156)	(0.0174)	(0.0189)	(0.0204)	(0.0220)
Public expenditures for welfare minus military t-i	0.000265	0.000152	-8.80e-05	-0.000381	-0.000559*	-0.000821**	-0.00100***	0.000826*	0.000756	0.000487	0.000155	-9.47e-05	-0.000510	-0.000827
	(0.000250)	(0.000263)	(0.000270)	(0.000262)	(0.000294)	(0.000377)	(0.000344)	(0.000470)	(0.000467)	(0.000524)	(0.000508)	(0.000530)	(0.000627)	(0.000646)
Economic inequality t-i	-0.000170	-0.000238	-0.000374	-0.000448	-0.000546*	-0.000625*	-0.000776**	0.000361	0.000341	0.000200	-1.49e-05	-0.000124	-0.000221	-0.000426
	(0.000208)	(0.000265)	(0.000272)	(0.000328)	(0.000330)	(0.000351)	(0.000347)	(0.000356)	(0.000494)	(0.000505)	(0.000611)	(0.000659)	(0.000705)	(0.000747)
Exports t-i	9.52e-05*	0.000102*	0.000106*	0.000109*	0.000129*	0.000161**	0.000172**	-4.26e-05	-6.33e-05	-0.000110	-0.000156	-0.000179	-0.000196	-0.000236*
	(5.09e-05)	(5.48e-05)	(5.77e-05)	(6.35e-05)	(6.95e-05)	(7.69e-05)	(8.72e-05)	(6.09e-05)	(7.26e-05)	(8.58e-05)	(9.68e-05)	(0.000109)	(0.000121)	(0.000135)
Constant	0.00369	0.00494	0.00978	0.00971	0.0103	0.00861	0.0130	0.0214	0.0337	0.0479*	0.0625**	0.0709*	0.0795**	0.0939**
	(0.0130)	(0.0163)	(0.0171)	(0.0216)	(0.0214)	(0.0233)	(0.0233)	(0.0209)	(0.0255)	(0.0269)	(0.0314)	(0.0362)	(0.0358)	(0.0378)
Observations	2,349	2,268	2,187	2,106	2,025	1,944	1,863	2,349	2,268	2,187	2,106	2,025	1,944	1,863
R-squared	0.954	0.9452	0.9392	0.9318	0.9266	0.9216	0.9158	0.9068	0.8702	0.8344	0.8026	0.775	0.7526	0.7306

Notes: *Robust* standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t. Number of countries: 81.

Appendix-Table 5: Dynamic OLS estimations with panel corrected standard errors using different time lags

Time lag	C3L1 lag i=1	C3L2 lag i=2	C3L3 lag i=3	C3L4 lag i=4	C3L5 lag i=5	C3L6 lag i=6	C3L7 lag i=7	C4L1 lag i=1	C4L2 lag i=2	C4L3 lag i=3	C4L4 lag i=4	C4L5 lag i=5	C4L6 lag i=6	C4L7 lag i=7
Dependent variable	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index
Lagged Dependent Variable t-i-1	0.782*** (0.0182)	0.717*** (0.0224)	0.661*** (0.0296)	0.630*** (0.0325)	0.587*** (0.0308)	0.558*** (0.0281)	0.520*** (0.0384)	0.715*** (0.0257)	0.520*** (0.0285)	0.399*** (0.0271)	0.332*** (0.0379)	0.262*** (0.0303)	0.236*** (0.0277)	0.191*** (0.0306)
Emancipative values t-i	0.0963*** (0.0330)	0.129*** (0.0428)	0.116*** (0.0415)	0.136*** (0.0488)	0.131** (0.0646)	0.146*** (0.0468)	0.128** (0.0503)	0.0532 (0.0540)	0.0590 (0.0591)	0.0536 (0.0758)	0.0541 (0.0665)	0.0502 (0.0915)	0.0466 (0.0666)	0.00114 (0.0584)
Socioeconomic resources t-i	0.00102*** (0.000285)	0.00127*** (0.000296)	0.00168*** (0.000478)	0.00160*** (0.000339)	0.00177*** (0.000458)	0.00173*** (0.000401)	0.00186*** (0.000527)	0.000546 (0.000457)	0.000989 (0.000668)	0.00201*** (0.000747)	0.00101 (0.000779)	0.00160* (0.000866)	0.00135* (0.000823)	0.00127 (0.000895)
Democratic tradition t-i	6.73e-05*** (1.08e-05)	8.67e-05*** (1.48e-05)	9.91e-05*** (1.39e-05)	0.000115*** (1.67e-05)	0.000125*** (1.68e-05)	0.000136*** (1.68e-05)	0.000149*** (2.03e-05)	8.31e-05*** (2.17e-05)	0.000152*** (2.85e-05)	0.000168*** (3.22e-05)	0.000227*** (3.47e-05)	0.000227*** (4.18e-05)	0.000235*** (4.31e-05)	0.000257*** (4.76e-05)
% Protestants minus Muslims t-i	0.0424*** (0.0111)	0.0561*** (0.0130)	0.0777*** (0.0158)	0.0932*** (0.0152)	0.108*** (0.0182)	0.122*** (0.0192)	0.139*** (0.0200)	0.0466** (0.0205)	0.0928*** (0.0290)	0.146*** (0.0404)	0.197*** (0.0474)	0.190*** (0.0471)	0.249*** (0.0520)	0.264*** (0.0527)
Years of schooling t-i	0.00280** (0.00113)	0.00390*** (0.00144)	0.00542*** (0.00154)	0.00642*** (0.00157)	0.00775*** (0.00178)	0.00881*** (0.00177)	0.00985*** (0.00200)	0.00649*** (0.00217)	0.0108*** (0.00399)	0.0115*** (0.00367)	0.0116*** (0.00411)	0.0164*** (0.00480)	0.0134*** (0.00462)	0.0153*** (0.00480)
Ethnic fractionalization t-i	-0.0353*** (0.00922)	-0.0463*** (0.0108)	-0.0526*** (0.0118)	-0.0574*** (0.0134)	-0.0629*** (0.0140)	-0.0699*** (0.0154)	-0.0759*** (0.0153)	-0.0441*** (0.0171)	-0.0672** (0.0272)	-0.0661** (0.0274)	-0.0832*** (0.0307)	-0.0856** (0.0344)	-0.0800** (0.0374)	-0.111*** (0.0391)
Public expenditures for welfare minus military t-i	0.000341 (0.000291)	0.000388 (0.000290)	0.000232 (0.000327)	-3.99e-05 (0.000303)	1.09e-05 (0.000295)	-0.000260 (0.000491)	-0.000203 (0.000368)	0.00127* (0.000712)	0.00153*** (0.000549)	0.00109 (0.000725)	0.000762 (0.000570)	0.000766 (0.000498)	0.000312 (0.000804)	0.000374 (0.000752)
Economic inequality t-i	-0.000223 (0.000230)	-0.000278 (0.000321)	-0.000492 (0.000317)	-0.000522 (0.000409)	-0.000634* (0.000340)	-0.000629 (0.000397)	-0.000828** (0.000378)	0.000696 (0.000449)	0.00103 (0.000753)	0.000721 (0.000493)	0.000341 (0.000715)	0.000402 (0.000814)	0.000545 (0.000611)	0.000192 (0.000674)
Exports t-i	0.000125* (6.41e-05)	0.000156** (7.15e-05)	0.000176** (7.83e-05)	0.000180** (8.66e-05)	0.000212** (0.000106)	0.000272** (0.000110)	0.000275** (0.000123)	-7.91e-05 (0.000102)	1.18e-05 (0.000152)	-0.000149 (0.000173)	-0.000207 (0.000216)	-0.000161 (0.000311)	-0.000104 (0.000387)	-0.000312 (0.000289)
Constant	0.00864 (0.0140)	0.0107 (0.0185)	0.0247 (0.0169)	0.0269 (0.0237)	0.0356* (0.0210)	0.0345 (0.0234)	0.0537** (0.0232)	0.0649** (0.0271)	0.118*** (0.0390)	0.174*** (0.0387)	0.241*** (0.0427)	0.246*** (0.0699)	0.265*** (0.0455)	0.329*** (0.0475)
Observations	2,349	2,268	2,187	2,106	2,025	1,944	1,863	2,349	2,268	2,187	2,106	2,025	1,944	1,863
R-squared	0.934	0.914	0.8932	0.8794	0.8654	0.854	0.8428	0.788	0.6484	0.5534	0.495	0.463	0.44	0.4348
Number of number	81	81	81	81	81	81	81	81	81	81	81	81	81	81

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t. Linear regression models with panel corrected standard errors (OLS-PCSE) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels.

Models C1L1 to C1L7 (the first 7 columns) in Appendix-Table 4 show a positive and highly significant effect of emancipative values on the EDI for the imputation corrected estimations. Increasing the sample size to all countries that were surveyed at least once by the EVS/WVS further decreases standard errors in all models and confirms a positive and highly significant effect of emancipative values. The effect on the Freedom House Index is not significant, although all coefficients have a positive sign and show a comparable effect size.

To ensure efficiency of the parameter estimates we repeat these models applying panel-corrected standard errors (Appendix-Table 5). The models basically re-iterate the previous findings.

In order to check the imputation corrected estimates with the results of the individual imputed datasets, Appendix-Table 6 summarizes the coefficients for OLS and linear regression with panel corrected standard errors as a function of the timing of the predictor variables for each of the imputed datasets.

The overall picture of the effect of emancipative values on effective democracy confirms previous findings. Moreover, there is also a significant positive effect of emancipative values on democracy measured by the Freedom House Index in three of the five imputed datasets (m=2, m=4 and m=5), varying by the respective time lag.

Appendix-Table 6: Summary of dynamic estimation results on the effect of emancipative values on democracy (OLS & PCSE)

	Time lag	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7
	Dependent variable	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Effective Democracy Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index	Freedom House Index
OLS	m=1-5	0.0817***	0.0969***	0.0912**	0.102**	0.105**	0.115**	0.117**	0.0586	0.0718	0.0820	0.0992	0.109	0.117	0.121
		(0.0301)	(0.0361)	(0.0376)	(0.0460)	(0.0511)	(0.0514)	(0.0569)	(0.0490)	(0.0564)	(0.0647)	(0.0692)	(0.0766)	(0.0772)	(0.0839)
	m=1	0.0745***	0.107***	0.102***	0.138***	0.132***	0.156***	0.171***	0.0329	0.0445	0.0497	0.0906	0.0971	0.128*	0.157**
		(0.0266)	(0.0308)	(0.0344)	(0.0365)	(0.0397)	(0.0410)	(0.0429)	(0.0393)	(0.0464)	(0.0557)	(0.0614)	(0.0684)	(0.0717)	(0.0758)
	m=2	0.0677**	0.0750**	0.0749**	0.0727*	0.0838**	0.0884**	0.0918**	0.0581	0.0702	0.0939	0.101	0.0842	0.121	0.117
		(0.0271)	(0.0316)	(0.0337)	(0.0377)	(0.0403)	(0.0428)	(0.0457)	(0.0432)	(0.0529)	(0.0639)	(0.0719)	(0.0784)	(0.0830)	(0.0868)
	m=3	0.0881***	0.0924***	0.0929***	0.0875**	0.0916**	0.0934**	0.0999**	0.0436	0.0598	0.0725	0.0735	0.100	0.0975	0.1000
		(0.0267)	(0.0290)	(0.0324)	(0.0346)	(0.0357)	(0.0396)	(0.0425)	(0.0397)	(0.0478)	(0.0549)	(0.0609)	(0.0657)	(0.0693)	(0.0736)
	m=4	0.0899***	0.0936***	0.0807**	0.103**	0.0781*	0.109**	0.0991**	0.0734	0.0824	0.0836	0.113	0.119	0.115	0.109
		(0.0312)	(0.0346)	(0.0384)	(0.0407)	(0.0420)	(0.0443)	(0.0463)	(0.0479)	(0.0551)	(0.0636)	(0.0696)	(0.0756)	(0.0791)	(0.0822)
	m=5	0.0881***	0.117***	0.105***	0.107***	0.142***	0.125***	0.125***	0.0847*	0.102*	0.111*	0.119*	0.143**	0.121	0.123
		(0.0286)	(0.0320)	(0.0341)	(0.0374)	(0.0408)	(0.0410)	(0.0448)	(0.0452)	(0.0522)	(0.0597)	(0.0669)	(0.0727)	(0.0765)	(0.0829)
PCSE	m=1-5	0.0963***	0.129***	0.116***	0.136***	0.131**	0.146***	0.128**	0.0532	0.0590	0.0536	0.0541	0.0502	0.0466	0.00114
		(0.0330)	(0.0428)	(0.0415)	(0.0488)	(0.0646)	(0.0468)	(0.0503)	(0.0540)	(0.0591)	(0.0758)	(0.0665)	(0.0915)	(0.0666)	(0.0584)
	m=1	0.0832***	0.137***	0.0986***	0.164***	0.107***	0.154***	0.145***	0.0206	0.0175	-0.0309	0.0539	-0.0317	-0.00513	0.00915
		(0.0294)	(0.0337)	(0.0352)	(0.0375)	(0.0397)	(0.0400)	(0.0413)	(0.0449)	(0.0469)	(0.0468)	(0.0473)	(0.0486)	(0.0472)	(0.0492)
	m=2	0.0826***	0.0989***	0.112***	0.0973***	0.124***	0.117***	0.112***	0.0559	0.0651	0.108**	0.0830*	-0.0170	0.104**	-0.00554
		(0.0290)	(0.0328)	(0.0351)	(0.0371)	(0.0393)	(0.0404)	(0.0429)	(0.0468)	(0.0477)	(0.0489)	(0.0490)	(0.0503)	(0.0489)	(0.0496)
	m=3	0.106***	0.117***	0.121***	0.121***	0.126***	0.133***	0.125***	0.0363	0.0401	0.0651	-0.000177	0.0846	0.0484	0.0122
		(0.0290)	(0.0320)	(0.0349)	(0.0365)	(0.0375)	(0.0400)	(0.0419)	(0.0445)	(0.0490)	(0.0496)	(0.0506)	(0.0516)	(0.0506)	(0.0512)
	m=4	0.109***	0.129***	0.104***	0.158***	0.0881**	0.166***	0.0983**	0.0806*	0.0867*	0.0473	0.0998**	0.0938*	0.0563	-0.0403
		(0.0322)	(0.0359)	(0.0385)	(0.0408)	(0.0411)	(0.0429)	(0.0437)	(0.0470)	(0.0498)	(0.0503)	(0.0493)	(0.0494)	(0.0493)	(0.0492)
	m=5	0.102***	0.163***	0.146***	0.138***	0.209***	0.160***	0.159***	0.0728	0.0857	0.0790	0.0339	0.121**	0.0296	0.0302
		(0.0307)	(0.0346)	(0.0373)	(0.0394)	(0.0413)	(0.0418)	(0.0428)	(0.0496)	(0.0523)	(0.0532)	(0.0554)	(0.0539)	(0.0553)	(0.0539)

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The table summarizes the effect of emancipative values on democracy over all and for each imputed dataset. Each cell shows the coefficient of emancipative values for ordinary least squares estimation and linear regression with panel corrected standard errors. Imp 1 to 5 indicate the number of the imputed dataset. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t. Linear regression models with panel corrected standard errors (OLS-PCSE) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels.

Unlike our dynamic panel approach, which tries to address the distinctiveness of change patterns of the respective variables, Dahlum/Knutsen suggest the application of Generalized Methods of Moments estimators. These estimators are based on the same underlying assumptions regarding time-invariant omitted variables as country fixed effects. However, since adding a lagged dependent variable (LDV) into fixed or random effects would not be consistent (as the LDV would be correlated with the transformed error terms) GMM estimators account for the bias introduced by the LDV (Baltagi 2005). [8]

Replicating Dahlum/Knutsen's results with our data cast doubts on the conclusions drawn based on their GMM estimations, because the consistency of the GMM estimators strongly depends on the validity of the instruments and the absence of serial autocorrelation. Both assumptions are hardly supported by standard diagnostics in our sample. Moreover, their specification of the GMM models is questionable, which treat certain already lagged independent variables as endogenous, which assumes that a T-7 lagged predictor is likely to be correlated with the error term at time T and needs further instrumentation.[9]

Still, out of curiosity, we also apply GMM estimations (Appendix-Table 6a). Since we are interested in long-term effects, the only meaningful implementation of GMM estimators requires time units longer than years. We therefore average the imputed data over each (non-overlapping) four-years period.[10] This reduces the time series to T=8. We also check our results with three-year periods[11] increasing the time series to T=10.

Among the covariates, emancipative values, socioeconomic resources and welfare expenditures are treated as endogenous. All other predictors are lagged by one period. As the number of instruments quickly grows with the number of time periods we limit the maximum number of lags of the dependent variable used as instruments to two and the number of lags for the endogenous variables used as instruments to three. We estimate the one-step and two-step Difference-GMM and System-GMM estimator, each with Windmeijer bias-corrected cluster-robust standard errors.

The tests of serial correlation indicate the absence of second-order serial correlation, which means that the estimated coefficients are not rendered inconsistent. In addition, in all of the two-step-models the instruments appear to be valid based on the Sargan test of overidentifying restrictions.[12] By contrast, the instrumentation in the one-step models doesn´t seem to be valid.[13]

Appendix-Table 6a presents the imputation corrected estimates of the effect of emancipative values on the EDI and the FHI for the Difference-GMM and the System-GMM. Except for

[8] GMM estimators, most prominently the (Arellano-Bond-) Difference-GMM and the System-GMM estimator, both account for the bias introduced by the LDV. The difference-GMM estimator uses lagged levels as instruments for the difference equation, whereas the System-GMM uses lagged differences as instruments for the level equation and lagged levels as instruments for the difference equation (Arellano/Bover 1995; Blundell/Bond 1998).

[9] For the sake of transparency, applying GMM estimators involves many choices referring the instrumenting variables and lags used, which should be reported (Roodman 2009). This also includes the results of standard diagnostics.

[10] Averaged 4-year periods: 1980-83, 1984-87, 1988-91, 1992-95, 1996-1999, 2000-03, 2004-07, 2008-2010.

[11] Averaged 3-year periods: 1980-83, 1984-86, 1987-89, 1990-92, 1993-95, 1996-98, 1999-2001, 2002-2004, 2005-2007, 2008-2010.

[12] As Arellano and Bond (1991) noted, the 1-step Sargan test tends to overreject the null in the presence of heteroscedasticity.

[13] The relevant diagnostics are tested for each individual dataset seperately, because they cannot be applied to imputation corrected, pooled estimates.

Model B7, every coefficient shows a positive although insignificant sign. However, looking at the individual imputed datasets reveals that some estimations are indeed positive and significantly different from zero. The results are qualitatively similar for 3-year and 4-year averaged periods.

Appendix-Table 6a: Dynamic Panel estimations (Arellano-Bond and System-GMM) for 3 and 4-year-periods

	B7 Ar.-Bond 1-step	B7 Ar.-Bond 2-step	B8 Ar.-Bond 1-step	B8 Ar.-Bond 2-step	B9 System GMM 1-step	B9 System GMM 2-step	B10 System GMM 1-step	B10 System GMM 2-step	B7 Ar.-Bond 1-step	B7 Ar.-Bond 2-step	B8 Ar.-Bond 1-step	B8 Ar.-Bond 2-step	B9 System GMM 1-step	B9 System GMM 2-step	B10 System GMM 1-step	B10 System GMM 2-step
	Effective Democracy Index	Effective Democracy Index	Freedom House Index	Freedom House Index	Effective Democracy Index	Effective Democracy Index	Freedom House Index	Freedom House Index	Effective Democracy Index	Effective Democracy Index	Freedom House Index	Freedom House Index	Effective Democracy Index	Effective Democracy Index	Freedom House Index	Freedom House Index
	4-years-periods								3-years-periods							
Lagged Dependent Variable	0.344***	0.356***	0.631***	0.643***	0.742***	0.745***	0.763***	0.776***	0.376***	0.378***	0.578***	0.580***	0.755***	0.759***	0.778***	0.784***
	(0.104)	(0.114)	(0.0926)	(0.115)	(0.123)	(0.131)	(0.0798)	(0.0734)	(0.101)	(0.129)	(0.0867)	(0.0923)	(0.0711)	(0.113)	(0.0641)	(0.102)
Emancipative values	-0.115	-0.157	0.405	0.211	0.109	0.0788	0.308	0.287	-0.159	-0.186	0.284	0.217	0.00959	0.00694	0.493	0.509
	(0.323)	(0.386)	(0.621)	(0.710)	(0.306)	(0.302)	(0.613)	(0.594)	(0.306)	(0.322)	(0.608)	(0.685)	(0.223)	(0.296)	(0.434)	(0.654)
Socioeconomic resources	0.00277	0.00213	-0.00654	-0.00584	0.00585**	0.00553**	0.00358	0.00284	0.00203	0.00152	-0.00815**	-0.00758*	0.00260	0.00264	-0.00364	-0.00347
	(0.00218)	(0.00277)	(0.00459)	(0.00456)	(0.00247)	(0.00254)	(0.00437)	(0.00439)	(0.00159)	(0.00175)	(0.00390)	(0.00421)	(0.00181)	(0.00238)	(0.00281)	(0.00394)
Public expenditures for welfare minus military	0.00656***	0.00667***	0.0139***	0.0129***	0.00101	0.000901	0.00592*	0.00568*	0.00564***	0.00544***	0.0149***	0.0142***	0.00117	0.00102	0.00592**	0.00546*
	(0.00168)	(0.00205)	(0.00361)	(0.00415)	(0.00172)	(0.00175)	(0.00328)	(0.00331)	(0.00159)	(0.00168)	(0.00412)	(0.00408)	(0.00111)	(0.00159)	(0.00243)	(0.00320)
Democratic tradition t-1	-0.000139	-0.000107	-0.000796**	-0.000647*	-0.000197	-0.000171	-0.000348	-0.000301	-0.000123	-0.000104	-0.000648***	-0.000630**	-3.37e-05	-3.90e-05	-7.82e-05	-8.50e-05
	(0.000160)	(0.000182)	(0.000316)	(0.000338)	(0.000128)	(0.000124)	(0.000293)	(0.000280)	(0.000126)	(0.000138)	(0.000236)	(0.000259)	(0.000112)	(0.000126)	(0.000151)	(0.000183)
% Protestants minus Muslims t-1	0.0282	-0.0485	-0.115	0.160	0.0279	0.0588	0.119	0.137	0.206	0.239	-0.158	-0.306	0.142*	0.143	0.210	0.223
	(0.527)	(0.633)	(1.415)	(2.237)	(0.150)	(0.145)	(0.193)	(0.219)	(0.472)	(0.532)	(1.598)	(1.653)	(0.0862)	(0.108)	(0.172)	(0.191)
Years of schooling t-1	-0.00670	-0.00874	-0.0193	-0.0191	-0.00856	-0.00875	-0.0244	-0.0241	0.000348	0.00123	-0.0158	-0.0151	-0.00387	-0.00374	-0.0203	-0.0202
	(0.00845)	(0.0114)	(0.0213)	(0.0213)	(0.00774)	(0.00892)	(0.0156)	(0.0156)	(0.0102)	(0.00981)	(0.0311)	(0.0301)	(0.00757)	(0.00880)	(0.0126)	(0.0148)
Ethnic fractionalization t-1	0.209	0.205	0.114	0.109	-0.0966	-0.0894	-0.224	-0.210	0.401	0.413	0.229	0.456	-0.0803	-0.0730	-0.294	-0.261
	(0.555)	(0.664)	(1.857)	(2.156)	(0.162)	(0.147)	(0.200)	(0.210)	(0.502)	(0.465)	(2.417)	(2.513)	(0.0866)	(0.0917)	(0.197)	(0.210)
Economic inequality t-1	-0.000294	-0.000350	-0.00419*	-0.00387	-0.00192	-0.00199	-0.00466*	-0.00472*	0.000999	0.00109	0.000672	0.000350	-0.000492	-0.000469	-0.000514	-0.000660
	(0.00135)	(0.00158)	(0.00239)	(0.00245)	(0.00166)	(0.00171)	(0.00255)	(0.00276)	(0.000949)	(0.00103)	(0.00220)	(0.00243)	(0.00119)	(0.00141)	(0.00262)	(0.00276)
Exports t-1	-7.33e-05	-0.000118	-0.000156	-0.000335	-6.20e-05	-7.64e-05	-0.000290	-0.000287	-0.000133	-0.000150	-0.000386	-0.000446	5.15e-05	5.87e-05	-0.000341	-0.000301
	(0.000500)	(0.000681)	(0.000950)	(0.00118)	(0.000702)	(0.000696)	(0.00117)	(0.00121)	(0.000505)	(0.000545)	(0.000940)	(0.00103)	(0.000446)	(0.000484)	(0.00119)	(0.00132)
Constant	0.179	0.261	0.378	0.354	0.108	0.114	0.295	0.303	-0.0429	-0.0399	0.263	0.313	0.0516	0.0471	0.148	0.126
	(0.351)	(0.402)	(1.081)	(1.490)	(0.129)	(0.151)	(0.237)	(0.240)	(0.322)	(0.325)	(1.450)	(1.468)	(0.0784)	(0.101)	(0.165)	(0.220)
Observations	486	486	486	486	567	567	567	567	648	648	648	648	729	729	729	729
Number of number	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81

Notes: Windmeijer bias-corrected cluster-robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Independent variables are lagged by one period. Socioeconomic ressources, welfare expenditures and emancipative values are treated as endogenous variables. The test of second order autocorrelation and the Sargan test of overidentifying restrictions are shown for each imputed datasets seperately (Table A2.1-A2.5).

THE REVERSE EFFECT OF DEMOCRACY ON EMANCIPATIVE VALUES

As a means of comparison, we also estimate the reverse effect of democracy on emancipative values. Appendix-Tables 7 and 8 show the results of OLS and linear regression with panel corrected standard errors. Appendix-Table 9 summarizes the coefficients of the EDI and FHI for T-1 to T-7 for each of the imputed dataset.

Models D1L1 to D1L7 (the first 7 columns) of Appendix-Table 7 show a positive and highly significant effect of effective democracy on emancipative values for the imputation corrected estimations. The results are similar irrespective of whether we include all countries that were surveyed at least once or twice by the EVS/WVS. The effect of democracy measured by Freedom House is also positive but less strong and decreases systematically to insignificance by increasing the time lag (models D2L1 to D2L7). Both results are confirmed when controlling for serially correlated observations applying panel-corrected standard errors (Appendix-Table 8).

Appendix-Table 9 summarizes the coefficients of both democracy measures for OLS and linear regression with panel corrected standard errors as a function of the timing of the predictor variables for each of the imputed dataset.

As a result we can conclude that emancipative values are partially endogenous to democracy based on the imputed data. However, the effect from emancipative values on democracy is at least twice as big as the reverse effect (Appendix-Tables 9a and 9b). Thus, the impact flow between emancipative values and democratic institutions appears to be reciprocal but with a strong asymmetry: the impact flow is much stronger from values to democracy than in the opposite direction, holding other things constant.

Appendix-Table 7: The reverse effect of democracy on emancipative values (OLS)

	D1L1	D1L2	D1L3	D1L4	D1L5	D1L6	D1L7	D2L1	D2L2	D2L3	D2L4	D2L5	D2L6	D2L7
time lag	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7
Dependent variable	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values
Lagged dependent Variable t-i-1	0.686***	0.690***	0.687***	0.689***	0.677***	0.677***	0.681***	0.699***	0.704***	0.701***	0.704***	0.693***	0.693***	0.698***
	(0.0310)	(0.0318)	(0.0330)	(0.0306)	(0.0406)	(0.0383)	(0.0405)	(0.0302)	(0.0307)	(0.0318)	(0.0305)	(0.0406)	(0.0380)	(0.0400)
Effective Democracy Index t-i	0.0363***	0.0391***	0.0401***	0.0423***	0.0435***	0.0428***	0.0430***							
	(0.00758)	(0.00837)	(0.00937)	(0.00796)	(0.00882)	(0.00904)	(0.0102)							
Freedom House Index t-i								0.0106**	0.0118**	0.0119*	0.0125**	0.0128	0.0111	0.00998
								(0.00487)	(0.00588)	(0.00647)	(0.00620)	(0.00791)	(0.00761)	(0.00807)
Socioeconomic resources t-i	0.000677***	0.000655***	0.000668***	0.000646***	0.000674***	0.000680***	0.000676***	0.000845***	0.000836***	0.000854***	0.000843***	0.000877***	0.000883***	0.000884***
	(0.000136)	(0.000150)	(0.000138)	(0.000151)	(0.000147)	(0.000154)	(0.000132)	(0.000137)	(0.000149)	(0.000138)	(0.000152)	(0.000151)	(0.000157)	(0.000132)
Democratic tradition t-i	-1.52e-05**	-1.43e-05**	-1.40e-05**	-1.31e-05*	-1.27e-05*	-1.19e-05*	-1.13e-05*	-6.98e-06	-5.59e-06	-5.01e-06	-3.54e-06	-2.83e-06	-1.60e-06	-4.18e-07
	(7.06e-06)	(6.46e-06)	(6.82e-06)	(6.96e-06)	(7.07e-06)	(6.55e-06)	(6.42e-06)	(6.67e-06)	(6.07e-06)	(6.37e-06)	(6.92e-06)	(7.35e-06)	(6.62e-06)	(6.53e-06)
% Protestants minus Muslims t-i	0.0278***	0.0287***	0.0288***	0.0290***	0.0306***	0.0323***	0.0329***	0.0327***	0.0339***	0.0342***	0.0346***	0.0362***	0.0378***	0.0385***
	(0.00749)	(0.00740)	(0.00700)	(0.00715)	(0.00742)	(0.00789)	(0.00661)	(0.00748)	(0.00751)	(0.00716)	(0.00722)	(0.00748)	(0.00779)	(0.00651)
Years of schooling t-i	0.00180**	0.00177***	0.00190***	0.00175**	0.00192**	0.00196**	0.00200**	0.00194***	0.00192***	0.00205***	0.00191***	0.00208***	0.00213**	0.00218**
	(0.000707)	(0.000638)	(0.000713)	(0.000751)	(0.000789)	(0.000866)	(0.000906)	(0.000678)	(0.000607)	(0.000686)	(0.000720)	(0.000756)	(0.000831)	(0.000866)
Ethnic fractionalization t-i	-0.000941	-0.000492	-0.000869	-0.00202	-0.00306	-0.00355	-0.00420	-0.00426	-0.00402	-0.00450	-0.00586	-0.00703	-0.00773	-0.00861
	(0.00664)	(0.00705)	(0.00756)	(0.00713)	(0.00699)	(0.00693)	(0.00788)	(0.00644)	(0.00683)	(0.00735)	(0.00688)	(0.00692)	(0.00700)	(0.00773)
Public expenditures for welfare minus military t-i	0.000267*	0.000199	0.000159	0.000175	0.000133	0.000117	6.16e-05	0.000287**	0.000218*	0.000181	0.000200*	0.000159	0.000153	0.000105
	(0.000147)	(0.000124)	(0.000116)	(0.000135)	(0.000141)	(0.000111)	(0.000137)	(0.000140)	(0.000113)	(0.000114)	(0.000120)	(0.000121)	(0.000116)	(0.000135)
Economic inequality t-i	-0.000101	-8.91e-05	-7.07e-05	-6.83e-05	-1.84e-05	-1.37e-05	2.06e-05	-0.000184	-0.000179	-0.000162	-0.000163	-0.000116	-0.000103	-6.36e-05
	(0.000132)	(0.000162)	(0.000150)	(0.000166)	(0.000139)	(0.000151)	(0.000143)	(0.000131)	(0.000163)	(0.000159)	(0.000171)	(0.000153)	(0.000161)	(0.000156)
Exports t-i	4.16e-06	8.53e-06	2.05e-05	3.09e-05	4.69e-05	5.51e-05	6.17e-05	2.50e-05	3.08e-05	4.36e-05	5.53e-05	7.26e-05*	8.10e-05*	8.82e-05**
	(3.99e-05)	(3.62e-05)	(3.97e-05)	(4.50e-05)	(4.40e-05)	(4.67e-05)	(4.42e-05)	(4.01e-05)	(3.70e-05)	(3.98e-05)	(4.44e-05)	(4.37e-05)	(4.66e-05)	(4.41e-05)
Constant	0.0780***	0.0778***	0.0788***	0.0805***	0.0826***	0.0838***	0.0829***	0.0776***	0.0774***	0.0783***	0.0800***	0.0821***	0.0836***	0.0829***
	(0.00838)	(0.0114)	(0.0103)	(0.00979)	(0.0124)	(0.0116)	(0.0121)	(0.00831)	(0.0111)	(0.0101)	(0.00936)	(0.0122)	(0.0110)	(0.0120)
Observations	2,349	2,268	2,187	2,106	2,025	1,944	1,863	2,349	2,268	2,187	2,106	2,025	1,944	1,863
R-squared	0.8626	0.864	0.8634	0.864	0.8596	0.8594	0.8596	0.8616	0.8624	0.8616	0.8626	0.8576	0.8574	0.8572
Number of number														

Notes: *Robust* standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t.

Appendix-Table 8: The reverse effect of democracy on emancipative values (PCSE)

	D3L1	D3L2	D3L3	D3L4	D3L5	D3L6	D3L7	D4L1	D4L2	D4L3	D4L4	D4L5	D4L6	D4L7
time lag	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7
Dependent variable	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values	Emancipative values
Dependent Variable lag t-i-1	0.641*** (0.0350)	0.632*** (0.0373)	0.628*** (0.0396)	0.624*** (0.0319)	0.609*** (0.0469)	0.607*** (0.0455)	0.605*** (0.0486)	0.654*** (0.0349)	0.645*** (0.0372)	0.641*** (0.0386)	0.638*** (0.0326)	0.624*** (0.0467)	0.623*** (0.0456)	0.620*** (0.0478)
Effective Democracy Index t-i	0.0400*** (0.00811)	0.0433*** (0.00910)	0.0439*** (0.0102)	0.0465*** (0.00852)	0.0480*** (0.00983)	0.0471*** (0.00979)	0.0471*** (0.0113)							
Freedom House Index t-i								0.0116** (0.00520)	0.0130** (0.00655)	0.0129* (0.00702)	0.0134** (0.00639)	0.0141 (0.00866)	0.0123 (0.00784)	0.0109 (0.00841)
Socioeconomic resources t-i	0.000772*** (0.000147)	0.000779*** (0.000173)	0.000803*** (0.000163)	0.000786*** (0.000172)	0.000827*** (0.000179)	0.000825*** (0.000179)	0.000842*** (0.000153)	0.000959*** (0.000150)	0.000982*** (0.000175)	0.00101*** (0.000165)	0.00101*** (0.000174)	0.00105*** (0.000185)	0.00105*** (0.000181)	0.00107*** (0.000155)
Democratic tradition t-i	-1.67e-05** (7.83e-06)	-1.60e-05** (7.32e-06)	-1.60e-05** (7.75e-06)	-1.50e-05* (8.13e-06)	-1.51e-05* (8.49e-06)	-1.38e-05* (7.48e-06)	-1.33e-05* (7.51e-06)	-7.64e-06 (7.42e-06)	-6.37e-06 (6.89e-06)	-6.11e-06 (7.20e-06)	-4.37e-06 (7.99e-06)	-4.13e-06 (8.71e-06)	-2.43e-06 (7.47e-06)	-1.33e-06 (7.53e-06)
% Protestants minus Muslims t-i	0.0326*** (0.00808)	0.0345*** (0.00868)	0.0348*** (0.00820)	0.0356*** (0.00830)	0.0374*** (0.00898)	0.0392*** (0.00925)	0.0405*** (0.00744)	0.0382*** (0.00812)	0.0406*** (0.00888)	0.0409*** (0.00847)	0.0420*** (0.00840)	0.0439*** (0.00913)	0.0456*** (0.00913)	0.0470*** (0.00745)
Years of schooling t-i	0.00211*** (0.000789)	0.00216*** (0.000726)	0.00233*** (0.000757)	0.00217** (0.000844)	0.00239*** (0.000840)	0.00244** (0.000991)	0.00251** (0.00105)	0.00228*** (0.000759)	0.00235*** (0.000691)	0.00253*** (0.000730)	0.00238*** (0.000810)	0.00260*** (0.000802)	0.00266*** (0.000955)	0.00274*** (0.00101)
Ethnic fractionalization t-i	-0.000956 (0.00740)	-0.000563 (0.00815)	-0.000823 (0.00870)	-0.00202 (0.00831)	-0.00306 (0.00825)	-0.00368 (0.00809)	-0.00455 (0.00952)	-0.00468 (0.00723)	-0.00455 (0.00791)	-0.00490 (0.00849)	-0.00638 (0.00800)	-0.00753 (0.00816)	-0.00835 (0.00818)	-0.00948 (0.00933)
Public expenditures for welfare minus military t-i	0.000283* (0.000155)	0.000253* (0.000138)	0.000207* (0.000125)	0.000244* (0.000146)	0.000191 (0.000163)	0.000193* (0.000114)	0.000149 (0.000140)	0.000306** (0.000149)	0.000277** (0.000128)	0.000233* (0.000125)	0.000274** (0.000132)	0.000221 (0.000141)	0.000233* (0.000123)	0.000197 (0.000139)
Economic inequality t-i	-0.000112 (0.000142)	-0.000116 (0.000192)	-9.60e-05 (0.000169)	-0.000113 (0.000196)	-5.12e-05 (0.000156)	-5.39e-05 (0.000176)	-1.59e-05 (0.000167)	-0.000200 (0.000142)	-0.000213 (0.000195)	-0.000193 (0.000178)	-0.000213 (0.000199)	-0.000155 (0.000170)	-0.000148 (0.000184)	-0.000104 (0.000178)
Exports t-i	2.21e-06 (4.33e-05)	7.32e-06 (4.01e-05)	1.95e-05 (4.36e-05)	2.72e-05 (5.00e-05)	4.30e-05 (4.79e-05)	4.89e-05 (5.25e-05)	5.47e-05 (4.95e-05)	2.52e-05 (4.38e-05)	3.19e-05 (4.11e-05)	4.47e-05 (4.40e-05)	5.38e-05 (4.96e-05)	7.11e-05 (4.81e-05)	7.70e-05 (5.27e-05)	8.33e-05* (4.96e-05)
Constant	0.0886*** (0.00949)	0.0921*** (0.0134)	0.0931*** (0.0127)	0.0970*** (0.0109)	0.0993*** (0.0141)	0.101*** (0.0135)	0.102*** (0.0142)	0.0884*** (0.00964)	0.0920*** (0.0133)	0.0931*** (0.0127)	0.0970*** (0.0105)	0.0992*** (0.0138)	0.102*** (0.0129)	0.103*** (0.0142)
Observations	2,349	2,268	2,187	2,106	2,025	1,944	1,863	2,349	2,268	2,187	2,106	2,025	1,944	1,863
R-squared	0.8366	0.8332	0.8322	0.8288	0.8236	0.8216	0.818	0.8344	0.8312	0.8296	0.8262	0.8206	0.819	0.8148
Number of number	81	81	81	81	81	81	81	81	81	81	81	81	81	81

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7).
The dependent variable is measured at t. Linear regression models with panel corrected standard errors (OLS-PCSE) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels.

Appendix-Table 9: Summary of reverse effects of democracy on emancipative values (OLS and PCSE) by imputed dataset

	Independent variable	Effective Democracy Index							Freedom House Index						
	time lag	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7	lag i=1	lag i=2	lag i=3	lag i=4	lag i=5	lag i=6	lag i=7
	Dependent variable	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emancipa-tive values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emanci-pative values	Emancipa-tive values
OLS	m=1-5	0.0363***	0.0391***	0.0401***	0.0423***	0.0435***	0.0428***	0.0430***	0.0106**	0.0118**	0.0119*	0.0125**	0.0128	0.0111	0.00998
		(0.00758)	(0.00837)	(0.00937)	(0.00796)	(0.00882)	(0.00904)	(0.0102)	(0.00487)	(0.00588)	(0.00647)	(0.00620)	(0.00791)	(0.00761)	(0.00807)
	m=1	0.0360***	0.0383***	0.0398***	0.0449***	0.0450***	0.0436***	0.0454***	0.00984**	0.00954**	0.0104**	0.0128***	0.0138***	0.0115***	0.0111**
		(0.00681)	(0.00697)	(0.00727)	(0.00737)	(0.00740)	(0.00797)	(0.00812)	(0.00384)	(0.00386)	(0.00404)	(0.00402)	(0.00414)	(0.00441)	(0.00431)
	m=2	0.0359***	0.0384***	0.0401***	0.0410***	0.0424***	0.0444***	0.0422***	0.0103***	0.0110***	0.0120***	0.0117***	0.0109**	0.00981**	0.00927**
		(0.00659)	(0.00682)	(0.00694)	(0.00714)	(0.00713)	(0.00739)	(0.00775)	(0.00392)	(0.00402)	(0.00405)	(0.00409)	(0.00424)	(0.00452)	(0.00467)
	m=3	0.0320***	0.0330***	0.0328***	0.0388***	0.0374***	0.0349***	0.0340***	0.00784**	0.00831**	0.00770*	0.00819**	0.00740*	0.00486	0.00402
		(0.00679)	(0.00657)	(0.00693)	(0.00703)	(0.00713)	(0.00729)	(0.00745)	(0.00393)	(0.00392)	(0.00413)	(0.00409)	(0.00429)	(0.00439)	(0.00442)
	m=4	0.0412***	0.0451***	0.0487***	0.0467***	0.0501***	0.0471***	0.0509***	0.0148***	0.0184***	0.0196***	0.0194***	0.0228***	0.0201***	0.0197***
		(0.00658)	(0.00678)	(0.00688)	(0.00691)	(0.00721)	(0.00739)	(0.00759)	(0.00441)	(0.00448)	(0.00446)	(0.00427)	(0.00480)	(0.00499)	(0.00501)
	m=5	0.0365***	0.0410***	0.0391***	0.0400***	0.0425***	0.0443***	0.0424***	0.0101***	0.0116***	0.01000***	0.0102**	0.00913**	0.00939**	0.00584
		(0.00660)	(0.00695)	(0.00698)	(0.00687)	(0.00732)	(0.00729)	(0.00743)	(0.00384)	(0.00386)	(0.00385)	(0.00397)	(0.00404)	(0.00417)	(0.00425)
PCSE	m=1-5	0.0400***	0.0433***	0.0439***	0.0465***	0.0480***	0.0471***	0.0471***	0.0116**	0.0130**	0.0129*	0.0134**	0.0141	0.0123	0.0109
		(0.00811)	(0.00910)	(0.0102)	(0.00852)	(0.00983)	(0.00979)	(0.0113)	(0.00520)	(0.00655)	(0.00702)	(0.00639)	(0.00866)	(0.00784)	(0.00841)
	m=1	0.0396***	0.0421***	0.0438***	0.0501***	0.0506***	0.0473***	0.0495***	0.0107***	0.00981**	0.0107**	0.0134***	0.0149***	0.0116**	0.0114**
		(0.00721)	(0.00765)	(0.00787)	(0.00815)	(0.00833)	(0.00850)	(0.00876)	(0.00410)	(0.00426)	(0.00449)	(0.00446)	(0.00464)	(0.00478)	(0.00487)
	m=2	0.0399***	0.0423***	0.0444***	0.0447***	0.0469***	0.0491***	0.0464***	0.0116***	0.0122***	0.0133***	0.0128***	0.0124***	0.0111**	0.0107**
		(0.00707)	(0.00750)	(0.00761)	(0.00783)	(0.00798)	(0.00828)	(0.00873)	(0.00432)	(0.00452)	(0.00460)	(0.00467)	(0.00481)	(0.00502)	(0.00533)
	m=3	0.0349***	0.0364***	0.0350***	0.0430***	0.0404***	0.0387***	0.0366***	0.00866**	0.00917**	0.00816*	0.00915**	0.00807*	0.00581	0.00475
		(0.00716)	(0.00716)	(0.00748)	(0.00771)	(0.00773)	(0.00796)	(0.00816)	(0.00419)	(0.00423)	(0.00440)	(0.00448)	(0.00457)	(0.00468)	(0.00479)
	m=4	0.0450***	0.0490***	0.0526***	0.0494***	0.0546***	0.0498***	0.0553***	0.0160***	0.0202***	0.0210***	0.0201***	0.0250***	0.0211***	0.0207***
		(0.00711)	(0.00744)	(0.00740)	(0.00777)	(0.00813)	(0.00825)	(0.00857)	(0.00470)	(0.00493)	(0.00482)	(0.00486)	(0.00531)	(0.00560)	(0.00575)
	m=5	0.0407***	0.0466***	0.0438***	0.0451***	0.0476***	0.0508***	0.0478***	0.0111***	0.0135***	0.0112***	0.0116***	0.0103**	0.0116**	0.00710
		(0.00699)	(0.00730)	(0.00742)	(0.00754)	(0.00778)	(0.00796)	(0.00817)	(0.00411)	(0.00428)	(0.00428)	(0.00448)	(0.00445)	(0.00470)	(0.00477)

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The table summarizes the effect of democracy on emancipative values over all and for each imputed dataset. Each cell shows the coefficient of either EDI or FH for ordinary least squares estimation and linear regression with panel corrected standard errors. m =1 to 5 indicate the number of the imputed dataset. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t. Linear regression models with panel corrected standard errors (OLS-PCSE) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels.

In order to compare the different effect sizes systematically as a function of the timing, Appendix-Table 9a shows the effects of emancipative values on democracy measured by the EDI (Models C1L1-C1L7) next to the reverse effect (D1C1-D7C7) based on OLS estimations. In Appendix-Table 9b the democracy measure is the FHI.

Based on the same structure Appendix-Tables 10a 10b include the results based on linear regression with panel corrected standard errors showing the effect of each of the two democracy measures on emancipative values.

In order to compare the effect sizes and to ensure that the imputation corrected results are not sensitive to certain imputations, Appendix-Table 11 summarizes the coefficients of the two-directional estimates for OLS and linear regression with panel corrected standard errors. Therefore, we present the estimates as a function of the timing of the predictor variables for each of the five imputed datasets.

Against this empirical evidence, we can conclude that the size of the impact of emancipative values on the EDI is twice as large as the reverse effect. Moreover, the effect of emancipative values on democracy based on the FHI is almost ten times larger than the reverse effect. These results cast further doubts on Dahlum/Knutsen's claim that there is unequivocal evidence of the insignificance of the effect of values on democracy. Similar doubts are cast on their claim that the relationship works stronger in the opposite direction, from democracy on values. This definitely is not the case; the exact opposite is true.

Appendix-Table 9a: The effect of emancipative values on Effective democracy and vice versa: comparing the effect size (OLS)

	C1L1 OLS	D1L1 OLS	C1L2 OLS	D1L2 OLS	C1L3 OLS	D1L3 OLS	C1L4 OLS	D1L4 OLS	C1L5 OLS	D1L5 OLS	C1L6 OLS	D1L6 OLS	C1L7 OLS	D1L7 OLS
Time lag	lag i=1	lag i=1	lag i=2	lag i=2	lag i=3	lag i=3	lag i=4	lag i=4	lag i=5	lag i=5	lag i=6	lag i=6	lag i=7	lag i=7
Dependent variable	Effective Democracy Index	Emancipative values	Effective Democracy Index	Emancipa-tive values	Effective Democracy Index	Emancipa-tive values	Effective Democracy Index	Emancipa-tive values	Effective Democracy Index	Emancipa-tive values	Effective Democracy Index	Emancipa-tive values	Effective Democracy Index	Emancipa-tive values
Dependent Variable t-i-1	0.847***	0.686***	0.825***	0.690***	0.815***	0.687***	0.806***	0.689***	0.797***	0.677***	0.789***	0.677***	0.776***	0.681***
	(0.0139)	(0.0310)	(0.0150)	(0.0318)	(0.0182)	(0.0330)	(0.0228)	(0.0306)	(0.0224)	(0.0406)	(0.0205)	(0.0383)	(0.0247)	(0.0405)
Emancipative values t-i	0.0817***		0.0969***		0.0912**		0.102**		0.105**		0.115**		0.117**	
	(0.0301)		(0.0361)		(0.0376)		(0.0460)		(0.0511)		(0.0514)		(0.0569)	
Effective Democracy Index t-i		0.0363***		0.0391***		0.0401***		0.0423***		0.0435***		0.0428***		0.0430***
		(0.00758)		(0.00837)		(0.00937)		(0.00796)		(0.00882)		(0.00904)		(0.0102)
Socioeconomic re-sources t-i	0.000632***	0.000677***	0.000669***	0.000655***	0.000706**	0.000668***	0.000581**	0.000646***	0.000506*	0.000674***	0.000409	0.000680***	0.000367	0.000676***
	(0.000220)	(0.000136)	(0.000246)	(0.000150)	(0.000278)	(0.000138)	(0.000270)	(0.000151)	(0.000293)	(0.000147)	(0.000308)	(0.000154)	(0.000351)	(0.000132)
Democratic tradition t-i	4.48e-05***	-1.52e-05**	4.88e-05***	-1.43e-05**	4.76e-05***	-1.40e-05**	5.07e-05***	-1.31e-05*	4.97e-05***	-1.27e-05*	4.99e-05***	-1.19e-05*	5.17e-05***	-1.13e-05*
	(8.66e-06)	(7.06e-06)	(1.06e-05)	(6.46e-06)	(1.05e-05)	(6.82e-06)	(1.18e-05)	(6.96e-06)	(1.27e-05)	(7.07e-06)	(1.27e-05)	(6.55e-06)	(1.48e-05)	(6.42e-06)
% Protestants minus Muslims t-i	0.0289***	0.0278***	0.0376***	0.0287***	0.0484***	0.0288***	0.0589***	0.0290***	0.0676***	0.0306***	0.0768***	0.0323***	0.0886***	0.0329***
	(0.00885)	(0.00749)	(0.0103)	(0.00740)	(0.0109)	(0.00700)	(0.0119)	(0.00715)	(0.0129)	(0.00742)	(0.0135)	(0.00789)	(0.0151)	(0.00661)
Years of schooling t-i	0.00216**	0.00180**	0.00296***	0.00177***	0.00404***	0.00190***	0.00506***	0.00175**	0.00625***	0.00192**	0.00740***	0.00196**	0.00841***	0.00200**
	(0.000952)	(0.000707)	(0.00112)	(0.000638)	(0.00120)	(0.000713)	(0.00125)	(0.000751)	(0.00137)	(0.000789)	(0.00142)	(0.000866)	(0.00148)	(0.000906)
Ethnic fractionalization t-i	-0.0269***	-0.000941	-0.0307***	-0.000492	-0.0310***	-0.000869	-0.0310***	-0.00202	-0.0311***	-0.00306	-0.0319***	-0.00355	-0.0324***	-0.00420
	(0.00777)	(0.00664)	(0.00843)	(0.00705)	(0.00908)	(0.00756)	(0.0100)	(0.00713)	(0.0109)	(0.00699)	(0.0116)	(0.00693)	(0.0119)	(0.00788)
Public expenditures for welfare minus military t-i	0.000265	0.000267*	0.000152	0.000199	-8.80e-05	0.000159	-0.000381	0.000175	-0.000559*	0.000133	-0.000821**	0.000117	-0.00100***	6.16e-05
	(0.000250)	(0.000147)	(0.000263)	(0.000124)	(0.000270)	(0.000116)	(0.000262)	(0.000135)	(0.000294)	(0.000141)	(0.000377)	(0.000111)	(0.000344)	(0.000137)
Economic inequality t-i	-0.000170	-0.000101	-0.000238	-8.91e-05	-0.000374	-7.07e-05	-0.000448	-6.83e-05	-0.000546*	-1.84e-05	-0.000625*	-1.37e-05	-0.000776**	2.06e-05
	(0.000208)	(0.000132)	(0.000265)	(0.000162)	(0.000272)	(0.000150)	(0.000328)	(0.000166)	(0.000330)	(0.000139)	(0.000351)	(0.000151)	(0.000347)	(0.000143)
Exports t-i	9.52e-05*	4.16e-06	0.000102*	8.53e-06	0.000106*	2.05e-05	0.000109*	3.09e-05	0.000129*	4.69e-05	0.000161**	5.51e-05	0.000172**	6.17e-05
	(5.09e-05)	(3.99e-05)	(5.48e-05)	(3.62e-05)	(5.77e-05)	(3.97e-05)	(6.35e-05)	(4.50e-05)	(6.95e-05)	(4.40e-05)	(7.69e-05)	(4.67e-05)	(8.72e-05)	(4.42e-05)
Constant	0.00369	0.0780***	0.00494	0.0778***	0.00978	0.0788***	0.00971	0.0805***	0.0103	0.0826***	0.00861	0.0838***	0.0130	0.0829***
	(0.0130)	(0.00838)	(0.0163)	(0.0114)	(0.0171)	(0.0103)	(0.0216)	(0.00979)	(0.0214)	(0.0124)	(0.0233)	(0.0116)	(0.0233)	(0.0121)
Observations	2,349	2,349	2,268	2,268	2,187	2,187	2,106	2,106	2,025	2,025	1,944	1,944	1,863	1,863
R-squared	0.954	0.8626	0.9452	0.864	0.9392	0.8634	0.9318	0.864	0.9266	0.8596	0.9216	0.8594	0.9158	0.8596

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t0.
The table compares the effect size of the democracy enhancing effect of emancipative values and the emancipation enhancing effect of democracy.

Appendix-Table 9b: The effect of emancipative values on Freedom House and vice versa: comparing the effect size (OLS)

	C2L1 OLS	D2L1 OLS	C2L2 OLS	D2L2 OLS	C2L3 OLS	D2L3 OLS	C2L4 OLS	D2L4 OLS	C2L5 OLS	D2L5 OLS	C2L6 OLS	D2L6 OLS	C2L7 OLS	D2L7 OLS
Time lag	lag i=1	lag i=1	lag i=2	lag i=2	lag i=3	lag i=3	lag i=4	lag i=4	lag i=5	lag i=5	lag i=6	lag i=6	lag i=7	lag i=7
Dependent variable	Freedom House Index	Emancipative values	Freedom House Index	Emancipa-tive values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values
Dependent Varia-ble t-i-1	0.865***	0.699***	0.814***	0.704***	0.765***	0.701***	0.719***	0.704***	0.672***	0.693***	0.629***	0.693***	0.583***	0.698***
	(0.0162)	(0.0302)	(0.0168)	(0.0307)	(0.0190)	(0.0318)	(0.0208)	(0.0305)	(0.0216)	(0.0406)	(0.0238)	(0.0380)	(0.0252)	(0.0400)
Emancipative values t-i	0.0586		0.0718		0.0820		0.0992		0.109		0.117		0.121	
	(0.0490)		(0.0564)		(0.0647)		(0.0692)		(0.0766)		(0.0772)		(0.0839)	
Freedom House Index t-i		0.0106**		0.0118**		0.0119*		0.0125**		0.0128		0.0111		0.00998
		(0.00487)		(0.00588)		(0.00647)		(0.00620)		(0.00791)		(0.00761)		(0.00807)
Socioeconomic resources t-i	-0.000185	0.000845***	-0.000194	0.000836***	-0.000166	0.000854***	-0.000365	0.000843***	-0.000448	0.000877***	-0.000562	0.000883***	-0.000702	0.000884***
	(0.000296)	(0.000137)	(0.000352)	(0.000149)	(0.000400)	(0.000138)	(0.000435)	(0.000152)	(0.000468)	(0.000151)	(0.000473)	(0.000157)	(0.000494)	(0.000132)
Democratic tradi-tion t-i	3.03e-05**	-6.98e-06	3.71e-05**	-5.59e-06	4.19e-05**	-5.01e-06	5.21e-05***	-3.54e-06	5.73e-05***	-2.83e-06	6.36e-05***	-1.60e-06	7.16e-05***	-4.18e-07
	(1.28e-05)	(6.67e-06)	(1.49e-05)	(6.07e-06)	(1.64e-05)	(6.37e-06)	(1.76e-05)	(6.92e-06)	(1.86e-05)	(7.35e-06)	(1.92e-05)	(6.62e-06)	(2.05e-05)	(6.53e-06)
% Protestants minus Muslims t-i	0.0186	0.0327***	0.0349**	0.0339***	0.0545***	0.0342***	0.0767***	0.0346***	0.0970***	0.0362***	0.122***	0.0378***	0.150***	0.0385***
	(0.0137)	(0.00748)	(0.0163)	(0.00751)	(0.0192)	(0.00716)	(0.0206)	(0.00722)	(0.0225)	(0.00748)	(0.0243)	(0.00779)	(0.0254)	(0.00651)
Years of schooling t-i	0.00476***	0.00194***	0.00724***	0.00192***	0.0101***	0.00205***	0.0129***	0.00191***	0.0163***	0.00208***	0.0193***	0.00213**	0.0223***	0.00218**
	(0.00138)	(0.000678)	(0.00175)	(0.000607)	(0.00183)	(0.000686)	(0.00206)	(0.000720)	(0.00219)	(0.000756)	(0.00242)	(0.000831)	(0.00248)	(0.000866)
Ethnic fractionali-zation t-i	-0.0300***	-0.00426	-0.0359**	-0.00402	-0.0386**	-0.00450	-0.0375**	-0.00586	-0.0371*	-0.00703	-0.0377*	-0.00773	-0.0383*	-0.00861
	(0.0115)	(0.00644)	(0.0140)	(0.00683)	(0.0156)	(0.00735)	(0.0174)	(0.00688)	(0.0189)	(0.00692)	(0.0204)	(0.00700)	(0.0220)	(0.00773)
Public expendi-tures for welfare minus military t-i	0.000826*	0.000287**	0.000756	0.000218*	0.000487	0.000181	0.000155	0.000200*	-9.47e-05	0.000159	-0.000510	0.000153	-0.000827	0.000105
	(0.000470)	(0.000140)	(0.000467)	(0.000113)	(0.000524)	(0.000114)	(0.000508)	(0.000120)	(0.000530)	(0.000121)	(0.000627)	(0.000116)	(0.000646)	(0.000135)
Economic inequali-ty t-i	0.000361	-0.000184	0.000341	-0.000179	0.000200	-0.000162	-1.49e-05	-0.000163	-0.000124	-0.000116	-0.000221	-0.000103	-0.000426	-6.36e-05
	(0.000356)	(0.000131)	(0.000494)	(0.000163)	(0.000505)	(0.000159)	(0.000611)	(0.000171)	(0.000659)	(0.000153)	(0.000705)	(0.000161)	(0.000747)	(0.000156)
Exports t-i	-4.26e-05	2.50e-05	-6.33e-05	3.08e-05	-0.000110	4.36e-05	-0.000156	5.53e-05	-0.000179	7.26e-05*	-0.000196	8.10e-05*	-0.000236*	8.82e-05**
	(6.09e-05)	(4.01e-05)	(7.26e-05)	(3.70e-05)	(8.58e-05)	(3.98e-05)	(9.68e-05)	(4.44e-05)	(0.000109)	(4.37e-05)	(0.000121)	(4.66e-05)	(0.000135)	(4.41e-05)
Constant	0.0214	0.0776***	0.0337	0.0774***	0.0479*	0.0783***	0.0625**	0.0800***	0.0709*	0.0821***	0.0795**	0.0836***	0.0939**	0.0829***
	(0.0209)	(0.00831)	(0.0255)	(0.0111)	(0.0269)	(0.0101)	(0.0314)	(0.00936)	(0.0362)	(0.0122)	(0.0358)	(0.0110)	(0.0378)	(0.0120)
Observations	2,349	2,349	2,268	2,268	2,187	2,187	2,106	2,106	2,025	2,025	1,944	1,944	1,863	1,863
R-squared	0.9068	0.8616	0.8702	0.8624	0.8344	0.8616	0.8026	0.8626	0.775	0.8576	0.7526	0.8574	0.7306	0.8572

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t0.
The table compares the effect size of the democracy enhancing effect of emancipative values and the emancipation enhancing effect of democracy.

Appendix-Table 10a: The effect of emancipative values on Effective Democracy and vice versa: comparing the effect size (PCSE)

	C3L1	D3L1	C3L2	D3L2	C3L3	D3L3	C3L4	D3L4	C3L5	D3L5	C3L6	D3L6	C3L7	D3L7
Time lag	lag i=1	lag i=1	lag i=2	lag i=2	lag i=3	lag i=3	lag i=4	lag i=4	lag i=5	lag i=5	lag i=6	lag i=6	lag i=7	lag i=7
Dependent variable	Effective Democracy Index	Emancipative values	Effective Democracy Index	Emancipative values	Effective Democracy Index	Emancipative values	Effective Democracy Index	Emancipative values	Effective Democracy Index	Emancipa-tive values	Effective Democracy Index	Emancipative values	Effective Democracy Index	Emancipative values
Dependent Variable t-i-1	0.782*** (0.0182)	0.641*** (0.0350)	0.717*** (0.0224)	0.632*** (0.0373)	0.661*** (0.0296)	0.628*** (0.0396)	0.630*** (0.0325)	0.624*** (0.0319)	0.587*** (0.0308)	0.609*** (0.0469)	0.558*** (0.0281)	0.607*** (0.0455)	0.520*** (0.0384)	0.605*** (0.0486)
Emancipative values t-i	0.0963*** (0.0330)		0.129*** (0.0428)		0.116*** (0.0415)		0.136*** (0.0488)		0.131** (0.0646)		0.146*** (0.0468)		0.128** (0.0503)	
Effective Democracy Index t-i		0.0400*** (0.00811)		0.0433*** (0.00910)		0.0439*** (0.0102)		0.0465*** (0.00852)		0.0480*** (0.00983)		0.0471*** (0.00979)		0.0471*** (0.0113)
Socioeconomic resources t-i	0.00102*** (0.000285)	0.000772*** (0.000147)	0.00127*** (0.000296)	0.000779*** (0.000173)	0.00168*** (0.000478)	0.000803*** (0.000163)	0.00160*** (0.000339)	0.000786*** (0.000172)	0.00177*** (0.000458)	0.000827*** (0.000179)	0.00173*** (0.000401)	0.000825*** (0.000179)	0.00186*** (0.000527)	0.000842*** (0.000153)
Democratic tradition t-i	6.73e-05*** (1.08e-05)	-1.67e-05** (7.83e-06)	8.67e-05*** (1.48e-05)	-1.60e-05** (7.32e-06)	9.91e-05*** (1.39e-05)	-1.60e-05** (7.75e-06)	0.000115*** (1.67e-05)	-1.50e-05* (8.13e-06)	0.000125*** (1.68e-05)	-1.51e-05* (8.49e-06)	0.000136*** (1.68e-05)	-1.38e-05* (7.48e-06)	0.000149*** (2.03e-05)	-1.33e-05* (7.51e-06)
% Protestants minus Muslims t-i	0.0424*** (0.0111)	0.0326*** (0.00808)	0.0561*** (0.0130)	0.0345*** (0.00868)	0.0777*** (0.0158)	0.0348*** (0.00820)	0.0932*** (0.0152)	0.0356*** (0.00830)	0.108*** (0.0182)	0.0374*** (0.00898)	0.122*** (0.0192)	0.0392*** (0.00925)	0.139*** (0.0200)	0.0405*** (0.00744)
Years of schooling t-i	0.00280** (0.00113)	0.00211*** (0.000789)	0.00390*** (0.00144)	0.00216*** (0.000726)	0.00542*** (0.00154)	0.00233*** (0.000757)	0.00642*** (0.00157)	0.00217** (0.000844)	0.00775*** (0.00178)	0.00239*** (0.000840)	0.00881*** (0.00177)	0.00244** (0.000991)	0.00985*** (0.00200)	0.00251** (0.00105)
Ethnic fractionalization t-i	-0.0353*** (0.00922)	-0.000956 (0.00740)	-0.0463*** (0.0108)	-0.000563 (0.00815)	-0.0526*** (0.0118)	-0.000823 (0.00870)	-0.0574*** (0.0134)	-0.00202 (0.00831)	-0.0629*** (0.0140)	-0.00306 (0.00825)	-0.0699*** (0.0154)	-0.00368 (0.00809)	-0.0759*** (0.0153)	-0.00455 (0.00952)
Public expenditures for welfare minus military t-i	0.000341 (0.000291)	0.000283* (0.000155)	0.000388 (0.000290)	0.000253* (0.000138)	0.000232 (0.000327)	0.000207* (0.000125)	-3.99e-05 (0.000303)	0.000244* (0.000146)	1.09e-05 (0.000295)	0.000191 (0.000163)	-0.000260 (0.000491)	0.000193* (0.000114)	-0.000203 (0.000368)	0.000149 (0.000140)
Economic inequality t-i	-0.000223 (0.000230)	-0.000112 (0.000142)	-0.000278 (0.000321)	-0.000116 (0.000192)	-0.000492 (0.000317)	-9.60e-05 (0.000169)	-0.000522 (0.000409)	-0.000113 (0.000196)	-0.000634* (0.000340)	-5.12e-05 (0.000156)	-0.000629 (0.000397)	-5.39e-05 (0.000176)	-0.000828** (0.000378)	-1.59e-05 (0.000167)
Exports t-i	0.000125* (6.41e-05)	2.21e-06 (4.33e-05)	0.000156** (7.15e-05)	7.32e-06 (4.01e-05)	0.000176** (7.83e-05)	1.95e-05 (4.36e-05)	0.000180** (8.66e-05)	2.72e-05 (5.00e-05)	0.000212** (0.000106)	4.30e-05 (4.79e-05)	0.000272** (0.000110)	4.89e-05 (5.25e-05)	0.000275** (0.000123)	5.47e-05 (4.95e-05)
Constant	0.00864 (0.0140)	0.0886*** (0.00949)	0.0107 (0.0185)	0.0921*** (0.0134)	0.0247 (0.0169)	0.0931*** (0.0127)	0.0269 (0.0237)	0.0970*** (0.0109)	0.0356* (0.0210)	0.0993*** (0.0141)	0.0345 (0.0234)	0.101*** (0.0135)	0.0537** (0.0232)	0.102*** (0.0142)
Observations	2,349	2,349	2,268	2,268	2,187	2,187	2,106	2,106	2,025	2,025	1,944	1,944	1,863	1,863
R-squared	0.934	0.8366	0.914	0.8332	0.8932	0.8322	0.8794	0.8288	0.8654	0.8236	0.854	0.8216	0.8428	0.818
No. of countries	81	81	81	81	81	81	81	81	81	81	81	81	81	81

Notes: The table compares the effect size of the democracy enhancing effect of emancipative values and the emancipation enhancing effect of democracy for the multiple imputed datasets.
*** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses. Panel corrected standard errors (OLS-PCSE) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels.
Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t.0

Appendix-Table 10b: The effect of emancipative values on Freedom House and vice versa: comparing the effect size (PCSE)

Time lag	C4L1 lag i=1	D4L1 lag i=1	C4L2 lag i=2	D4L2 lag i=2	C4L3 lag i=3	D4L3 lag i=3	C4L4 lag i=4	D4L4 lag i=4	C4L5 lag i=5	D4L5 lag i=5	C4L6 lag i=6	D4L6 lag i=6	C4L7 lag i=7	D4L7 lag i=7
Dependent variable	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values	Freedom House Index	Emancipative values
Dependent Variable lag t-i-1	0.715***	0.654***	0.520***	0.645***	0.399***	0.641***	0.332***	0.638***	0.262***	0.624***	0.236***	0.623***	0.191***	0.620***
	(0.0257)	(0.0349)	(0.0285)	(0.0372)	(0.0271)	(0.0386)	(0.0379)	(0.0326)	(0.0303)	(0.0467)	(0.0277)	(0.0456)	(0.0306)	(0.0478)
Emancipative values lag t-i	0.0532		0.0590		0.0536		0.0541		0.0502		0.0466		0.00114	
	(0.0540)		(0.0591)		(0.0758)		(0.0665)		(0.0915)		(0.0666)		(0.0584)	
Freedom House Index lag t-i		0.0116**		0.0130**		0.0129*		0.0134**		0.0141		0.0123		0.0109
		(0.00520)		(0.00655)		(0.00702)		(0.00639)		(0.00866)		(0.00784)		(0.00841)
Socioeconomic resources lag t-i	0.000546	0.000959***	0.000989	0.000982***	0.00201***	0.00101***	0.00101	0.00101***	0.00160*	0.00105***	0.00135*	0.00105***	0.00127	0.00107***
	(0.000457)	(0.000150)	(0.000668)	(0.000175)	(0.000747)	(0.000165)	(0.000779)	(0.000174)	(0.000866)	(0.000185)	(0.000823)	(0.000181)	(0.000895)	(0.000155)
Democratic tradition lag t-i	8.31e-05***	-7.64e-06	0.000152***	-6.37e-06	0.000168***	-6.11e-06	0.000227***	-4.37e-06	0.000227***	-4.13e-06	0.000235***	-2.43e-06	0.000257***	-1.33e-06
	(2.17e-05)	(7.42e-06)	(2.85e-05)	(6.89e-06)	(3.22e-05)	(7.20e-06)	(3.47e-05)	(7.99e-06)	(4.18e-05)	(8.71e-06)	(4.31e-05)	(7.47e-06)	(4.76e-05)	(7.53e-06)
% Protestants minus Muslims lag t-i	0.0466**	0.0382***	0.0928***	0.0406***	0.146***	0.0409***	0.197***	0.0420***	0.190***	0.0439***	0.249***	0.0456***	0.264***	0.0470***
	(0.0205)	(0.00812)	(0.0290)	(0.00888)	(0.0404)	(0.00847)	(0.0474)	(0.00840)	(0.0471)	(0.00913)	(0.0520)	(0.00913)	(0.0527)	(0.00745)
Years of schooling lag t-i	0.00649***	0.00228***	0.0108***	0.00235***	0.0115***	0.00253***	0.0116***	0.00238***	0.0164***	0.00260***	0.0134***	0.00266***	0.0153***	0.00274***
	(0.00217)	(0.000759)	(0.00399)	(0.000691)	(0.00367)	(0.000730)	(0.00411)	(0.000810)	(0.00480)	(0.000802)	(0.00462)	(0.000955)	(0.00480)	(0.00101)
Ethnic fractionalization lag t-i	-0.0441***	-0.00468	-0.0672**	-0.00455	-0.0661**	-0.00490	-0.0832***	-0.00638	-0.0856**	-0.00753	-0.0800**	-0.00835	-0.111***	-0.00948
	(0.0171)	(0.00723)	(0.0272)	(0.00791)	(0.0274)	(0.00849)	(0.0307)	(0.00800)	(0.0344)	(0.00816)	(0.0374)	(0.00818)	(0.0391)	(0.00933)
Public expenditures for welfare minus military lag t-i	0.00127*	0.000306**	0.00153***	0.000277**	0.00109	0.000233*	0.000762	0.000274**	0.000766	0.000221	0.000312	0.000233*	0.000374	0.000197
	(0.000712)	(0.000149)	(0.000549)	(0.000128)	(0.000725)	(0.000125)	(0.000570)	(0.000132)	(0.000498)	(0.000141)	(0.000804)	(0.000123)	(0.000752)	(0.000139)
Economic inequality lag t-i	0.000696	-0.000200	0.00103	-0.000213	0.000721	-0.000193	0.000341	-0.000213	0.000402	-0.000155	0.000545	-0.000148	0.000192	-0.000104
	(0.000449)	(0.000142)	(0.000753)	(0.000195)	(0.000493)	(0.000178)	(0.000715)	(0.000199)	(0.000814)	(0.000170)	(0.000611)	(0.000184)	(0.000674)	(0.000178)
Exports lag t-i	-7.91e-05	2.52e-05	1.18e-05	3.19e-05	-0.000149	4.47e-05	-0.000207	5.38e-05	-0.000161	7.11e-05	-0.000104	7.70e-05	-0.000312	8.33e-05*
	(0.000102)	(4.38e-05)	(0.000152)	(4.11e-05)	(0.000173)	(4.40e-05)	(0.000216)	(4.96e-05)	(0.000311)	(4.81e-05)	(0.000387)	(5.27e-05)	(0.000289)	(4.96e-05)
Constant	0.0649**	0.0884***	0.118***	0.0920***	0.174***	0.0931***	0.241***	0.0970***	0.246***	0.0992***	0.265***	0.102***	0.329***	0.103***
	(0.0271)	(0.00964)	(0.0390)	(0.0133)	(0.0387)	(0.0127)	(0.0427)	(0.0105)	(0.0699)	(0.0138)	(0.0455)	(0.0129)	(0.0475)	(0.0142)
Observations	2,349	2,349	2,268	2,268	2,187	2,187	2,106	2,106	2,025	2,025	1,944	1,944	1,863	1,863
R-squared	0.788	0.8344	0.6484	0.8312	0.5534	0.8296	0.495	0.8262	0.463	0.8206	0.44	0.819	0.4348	0.8148
No. of countries	81	81	81	81	81	81	81	81	81	81	81	81	81	81

Notes: The table compares the effect size of the democracy enhancing effect of emancipative values and the emancipation enhancing effect of democracy for the multiple imputed datasets.
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t0.

Appendix-Table 11: The effect of emancipative values on democracy and vice versa: comparing the effect size (OLS)

		Effect of emancipative values on effective democracy	Effect of effective democracy on emancipative values	Effect of emancipative values on Freedom House	Effect of Freedom House on emancipative values	Effect of emancipative values on effective democracy	Effect of effective democracy on emancipative values	Effect of emancipative values on Freedom House	Effect of Freedom House on emancipative values
		OLS				PCSE			
lag t-1	m=1-5	0.0817***	0.0363***	0.0586	0.0106**	0.0963***	0.0400***	0.0532	0.0116**
	m=1	0.0745***	0.0360***	0.0329	0.00984**	0.0832***	0.0396***	0.0206	0.0107***
	m=2	0.0677**	0.0359***	0.0581	0.0103***	0.0826***	0.0399***	0.0559	0.0116***
	m=3	0.0881***	0.0320***	0.0436	0.00784**	0.106***	0.0349***	0.0363	0.00866**
	m=4	0.0899***	0.0412***	0.0734	0.0148***	0.109***	0.0450***	0.0806*	0.0160***
	m=5	0.0881***	0.0365***	0.0847*	0.0101***	0.102***	0.0407***	0.0728	0.0111***
lag t-2	m=1-5	0.0969***	0.0391***	0.0718	0.0118**	0.129***	0.0433***	0.0590	0.0130**
	m=1	0.107***	0.0383***	0.0445	0.00954**	0.137***	0.0421***	0.0175	0.00981**
	m=2	0.0750**	0.0384***	0.0702	0.0110***	0.0989***	0.0423***	0.0651	0.0122***
	m=3	0.0924***	0.0330***	0.0598	0.00831**	0.117***	0.0364***	0.0401	0.00917**
	m=4	0.0936***	0.0451***	0.0824	0.0184***	0.129***	0.0490***	0.0867*	0.0202***
	m=5	0.117***	0.0410***	0.102*	0.0116***	0.163***	0.0466***	0.0857	0.0135***
lag t-3	m=1-5	0.0912**	0.0401***	0.0820	0.0119*	0.116***	0.0439***	0.0536	0.0129*
	m=1	0.102***	0.0398***	0.0497	0.0104**	0.0986***	0.0438***	-0.0309	0.0107**
	m=2	0.0749**	0.0401***	0.0939	0.0120***	0.112***	0.0444***	0.108**	0.0133***
	m=3	0.0929***	0.0328***	0.0725	0.00770*	0.121***	0.0350***	0.0651	0.00816*
	m=4	0.0807**	0.0487***	0.0836	0.0196***	0.104***	0.0526***	0.0473	0.0210***
	m=5	0.105***	0.0391***	0.111*	0.01000***	0.146***	0.0438***	0.0790	0.0112***
lag t-4	m=1-5	0.102**	0.0423***	0.0992	0.0125**	0.136***	0.0465***	0.0541	0.0134**
	m=1	0.138***	0.0449***	0.0906	0.0128***	0.164***	0.0501***	0.0539	0.0134***
	m=2	0.0727*	0.0410***	0.101	0.0117***	0.0973***	0.0447***	0.0830*	0.0128***
	m=3	0.0875**	0.0388***	0.0735	0.00819**	0.121***	0.0430***	-0.000177	0.00915**
	m=4	0.103**	0.0467***	0.113	0.0194***	0.158***	0.0494***	0.0998**	0.0201***
	m=5	0.107***	0.0400***	0.119*	0.0102**	0.138***	0.0451***	0.0339	0.0116***
lag t-5	m=1-5	0.105**	0.0435***	0.109	0.0128	0.131**	0.0480***	0.0502	0.0141
	m=1	0.132***	0.0450***	0.0971	0.0138***	0.107***	0.0506***	-0.0317	0.0149***
	m=2	0.0838**	0.0424***	0.0842	0.0109**	0.124***	0.0469***	-0.0170	0.0124***
	m=3	0.0916**	0.0374***	0.100	0.00740*	0.126***	0.0404***	0.0846	0.00807*
	m=4	0.0781*	0.0501***	0.119	0.0228***	0.0881**	0.0546***	0.0938*	0.0250***
	m=5	0.142***	0.0425***	0.143**	0.00913**	0.209***	0.0476***	0.121**	0.0103**
lag t-6	m=1-5	0.115**	0.0428***	0.117	0.0111	0.146***	0.0471***	0.0466	0.0123
	m=1	0.156***	0.0436***	0.128*	0.0115***	0.154***	0.0473***	-0.00513	0.0116**
	m=2	0.0884**	0.0444***	0.121	0.00981**	0.117***	0.0491***	0.104**	0.0111**
	m=3	0.0934**	0.0349***	0.0975	0.00486	0.133***	0.0387***	0.0484	0.00581
	m=4	0.109**	0.0471***	0.115	0.0201***	0.166***	0.0498***	0.0563	0.0211***
	m=5	0.125***	0.0443***	0.121	0.00939**	0.160***	0.0508***	0.0296	0.0116**
lag t-7	m=1-5	0.117**	0.0430***	0.121	0.00998	0.128**	0.0471***	0.00114	0.0109
	m=1	0.171***	0.0454***	0.157**	0.0111**	0.145***	0.0495***	0.00915	0.0114**
	m=2	0.0918**	0.0422***	0.117	0.00927**	0.112***	0.0464***	-0.00554	0.0107**
	m=3	0.0999**	0.0340***	0.1000	0.00402	0.125***	0.0366***	0.0122	0.00475
	m=4	0.0991**	0.0509***	0.109	0.0197***	0.0983**	0.0553***	-0.0403	0.0207***
	m=5	0.125***	0.0424***	0.123	0.00584	0.159***	0.0478***	0.0302	0.00710

Notes: The table summarizes the democracy enhancing effect of emancipative values and the emancipation enhancing effect of democracy. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Lag i defines the time lag of all independent variables varying from one-year (i=1) to seven-year-lags (i=7). The dependent variable is measured at t0.

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