

# Economic Indicators as Diagnostic Tools for Satisfaction with Democracy

## Abstract

**INTRODUCTION:** Many studies have shown the importance of economic indicators such as unemployment, inflation, and government spending for satisfaction with democracy. Yet few have analysed thresholds or ranges of where significant effects occur.

**PURPOSE:** The aim of this article is to determine when twelve key economic indicators have positive or negative effects on satisfaction with democracy. The intention is to develop a diagnostic tool for guiding public policy.

**METHODS:** This correlational cross-sectional study aggregates over 3.2 million survey respondents in 147 countries between 1973 and 2016. The study uses bivariate analysis, data visualisation, and multilevel models.

**RESULTS:** Examples of positive effects include unemployment below 6% or inflation between 1.1% and 2.5%. Examples of negative effects include government debts above 61.9% of GDP or income inequality above 47.5 using Gini coefficients.

**CONCLUSION:** Findings suggest that effects of economic indicators are stronger within some ranges or past certain thresholds. This information could be useful for decision making and prioritising government objectives.

## Keywords

satisfaction with democracy, economic performance, government finances, monetary policy

## Introduction

The aim of this study is to determine specific values of key economic indicators displaying the most significant positive or negative effects on satisfaction with democracy. This article focuses on key indicators related to government finances, economic performance, income levels and distribution, monetary policy, and international trade. These include trade volume, government debt, real interest rate, gross domestic product (GDP) growth, income inequality, government consumption, unemployment, inflation, balance of trade, government budget balance, gross national savings, and GDP per capita. These indicators often maintain significance after controlling for electoral systems, supporting election winners, institutional configurations, and the quality of government (Bernauer & Vatter, 2012; Clarke, Dutt, & Kornberg, 1993; Quaranta & Martini, 2016; Wagner, Schneider, & Halla, 2009). A better understanding of how these indicators affect satisfaction with democracy could guide public policy priorities, support political stability, and avoid future democratic failures. Most political parties want to be seen as fiscally competent and responsible because management of the economy and public finances are often highlighted during election campaigns (Anderson & Hecht, 2014). This is because poor economic performance before elections can result in a negative backlash against incumbents (Paldam, 1981; Remmer, 2012). The results of this study

could help executives make decisions, inform the allocation of limited government budgets, and assist electoral candidates when focusing their campaign messaging.

A key theoretical foundation for this work is that economic conditions can affect public satisfaction with the way democracy is working. This is supported by a substantial body of literature examining how different aspects of the economy affect satisfaction with democracy (Bermeo & Bartels, 2014; Friedrichsen & Zahn, 2014; Halla, Schneider, & Wagner, 2013; Kestilä-Kekkonen & Söderlund, 2015; Meer & Hakhverdian, 2017; Quaranta & Martini, 2016). Past financial crises and economic downturns enabled studies showing that these events tend to have strong negative effects on satisfaction with democracy (Bermeo & Bartels, 2014; Friedrichsen & Zahn, 2014; Sousa, Magalhães, & Amaral, 2014). A potential reason for this is that domestic political options can be limited by financial commitments or international markets and these limitations become especially acute during economic crises (Armingeon & Guthmann, 2014; Remmer, 2012). However, people may not lose support for democracy as a system of government during troubled times, since this support can actually rise in times of economic crisis while satisfaction is simultaneously falling (Cordero & Simón, 2016; Graham & Sukhtankar, 2004). Rather, decreasing levels of satisfaction sometimes reflect discontent regarding deteriorating economic conditions rather than democracy as a system of government (Linde & Ekman, 2003). Economic downturns have immediate negative effects for citizens that lose their jobs and this could affect satisfaction with democracy. What this study adds to this literature is to specify the ranges of economic indicators demonstrating positive or negative effects. Some studies have specified value ranges or provided more detailed findings for other measures of political support. For example, Benton (2005) and Wilkin, Haller, and Norpoth (1997) suggest that a fall of about 1.0% to 1.4% in GDP is associated with a loss of about 1.4% to 1.7% of the vote for incumbent parties. Others have determined that per capita incomes above \$6000 and annual economic growth above 5% were associated with longer democratic survival (Przeworski, Alvarez, Cheibub, & Limongi, 1996). The concept of thresholds and significant ranges thus exists in the literature, but we could benefit from research seeking to clarify these ranges.

## **Key Economic Indicators**

The following sections provide a brief overview of some ways in which economic indicators could affect satisfaction with democracy. The twelve economic indicators in this study span economic performance, wealth and income, government finances, monetary policy, and international trade. They are introduced and discussed in groupings roughly following these themes.

Economic performance indicators that affect satisfaction with democracy include the unemployment rate and economic growth (Armingeon & Guthmann, 2014). Studies have demonstrated the positive link between these indicators and political support for incumbent parties (Lewis-Beck & Stegmaier, 2013) as well as for satisfaction with democracy (Friedrichsen & Zahn, 2014; Han & Chang, 2016; Kestilä-Kekkonen & Söderlund, 2015). National unemployment rates have conversely shown negative effects (Clarke et al., 1993) and being unemployed is often negatively associated with democratic satisfaction (Anderson & Singer, 2008; Bernauer & Vatter, 2012). Unemployment is perhaps one of the strongest economic predictors because it can matter more than economic growth, inflation, and GDP per capita (Friedrichsen & Zahn, 2014).

Per capita income and the distribution of wealth can also affect satisfaction with democracy. Countries with higher incomes can generally afford better quality public services and infrastructure (Kestilä-Kekkonen & Söderlund, 2015; Quaranta & Martini, 2017), which could boost satisfaction with democracy. People in richer countries can usually afford better standards of living and good personal finances tend to show positive associations for satisfaction with democracy (Anderson & Guillory, 1997; Bernauer & Vatter, 2012; Kornberg & Clarke, 1994; Waldron-Moore, 1999; Wells & Kriekhaus, 2006). However, the distribution of income within societies is also important. Principles of equality and fairness are important for democracy and it has been long assumed that inegalitarian outcomes are associated with popular dissatisfaction (Anderson & Singer, 2008). Income inequality can undermine support for democracy as a system of government (Andersen, 2012). During times of economic crisis poorer groups are often more affected and more likely to support violent protests (Córdova & Seligson, 2010). Too much economic inequality in a society could erode confidence in public institutions, decrease satisfaction with democracy, and destabilize the political system.

Government finances such as budget balances, total debt, and share of consumption could affect satisfaction with democracy in numerous ways. Dissatisfaction may increase when citizens realize that deficits and debts reduce the ability of national democratic institutions to effectively implement major economic policies or support public welfare (Armingeon & Guthmann, 2014). Planned future expenses do not appear in annual deficits, and surpluses are often needed to pay for these future commitments. Large public debts may be viewed as unfairly burdening future generations, or citizens may support a smaller limited government and view sustained deficits as how governments grow. Large deficits or debts may increase the cost of borrowing or cause government shutdowns as politicians fight over deficit and debt reduction measures. Government shutdowns or budget cuts that decrease the quality or availability of public services could decrease satisfaction with democracy. Fixing budget shortfalls can also necessitate increasing taxes, which citizens tend to dislike and can hinder economic activity or growth. In addition, when government consumption grows in proportion to the rest of the economy, this tends to leave less money for individuals and businesses to drive economic growth. Governments thus face ongoing challenges of balancing social service needs with demands for economic performance (Lühiste, 2014). Running large prolonged deficits can increase the risk of defaulting on debts. If international organisations then impose austerity measures it could be perceived as an erosion of democratic legitimacy, which could reduce satisfaction with democracy (Armingeon, Guthmann, & Weisstanner, 2016). Deficits may cause some people to distrust government with the management of public finances, but reducing deficits can shrink funding for services, increase unemployment, or lower economic growth. Gross national savings (GNS) includes a component of government savings, but it also includes business and individual savings. It thus provides an overall measure of the national financial situation or the savings of a nation. Government deficits tend to erode the government component of national savings, but savings in other sectors can provide flexibility during economic downturns or financial crises. Countries with higher savings should find it easier to borrow money internally rather than rely on international markets to cover deficits. Holding other factors constant, countries with lower debt burdens, balanced budgets, lower government consumption, and higher national savings could have less reasons for their citizens to be dissatisfied with how democracy is working.

Monetary policy can influence satisfaction with democracy via inflation and the real interest rate (Armingeon & Guthmann, 2014; Clarke et al., 1993; Diaz-Serrano & Rodríguez-Pose, 2012). Inflation can encourage spending or investing if interest rates are lower because savings lose their value. If inflation gets too high and exceeds wage growth, then people tend to have

less money to spend. This could lead to higher inflation being associated with lower levels of democratic satisfaction (Clarke et al., 1993), but findings suggest further inquiry into the effects of inflation is needed (Halla et al., 2013). It is possible that inflation within a certain range may be optimal, meaning an inflation rate that is neither too low or deflationary nor too high or hyperinflation. The real interest rate is the interest rate adjusted for inflation. High real interest rates reduce money available for consumption, which could reduce satisfaction with democracy (Armingeon & Guthmann, 2014). Both inflation and interest rates can impact standards of living and the ability of governments to provide services.

International balances of trade and trade volumes are potential sources of dissatisfaction with democracy (Remmer, 2012). Higher trade volumes, which combines both exports and imports, suggest a country is well integrated into the international economy. This means its citizens are likely to benefit from the advantages of the division of labour, economies of scale, and the availability of goods and services. Participating in trade allows countries to benefit from their comparative advantages and raise standards of living, but trade volume does not allow us to distinguish between the effects of trade deficits or surpluses. A trade deficit occurs when imports exceed exports, while a trade surplus is the reverse. Trade deficits can benefit the public via lower consumer prices. However, sustaining trade deficits over long periods essentially means the country is exporting wealth, which is why governments often pursue policies aimed at creating or increasing trade surpluses. Doing so can provide benefits in the long term by increasing wealth, raising standards of living, and providing employment to produce exports. However, in the short term having substantial portions of the economy and economic growth depend upon exports makes a country more vulnerable to international economic changes.

## **Data and Methods**

The dependent variable of is satisfaction with democracy, but this study uses two versions: a scale at the country-year level and a dichotomised question at the respondent level. Data for these variables come from 3.2 million respondents in 143 countries between 1973 and 2016. . This study uses data from these sources as combined within the first version of Human Understanding Measured Across Nations (HUMAN) Surveys (Klassen, 2018b). Table 1 summarises the original survey sources, which aimed to take nationally representative samples of adult populations through random sampling. Not all surveys used the same survey methods or design, but the merged HUMAN Surveys data is adequate for uncovering general trends. Table 1 uses acronyms for Consolidation of Democracy in Central and Eastern Europe (CDCEE), Comparative Study of Electoral Systems (CSES), and International Social Survey Programme (ISSP).

Table 1: Summary of dependent variable sources with year spans

Afrobarometer (1999-2015)	Eurobarometer: Central and Eastern (1990-1997)
AmericasBarometer (2004-2014)	Eurobarometer: Standard and Special (1962-2016)
Arab Barometer (2006-2014)	European Social Survey (2002-2015)
AsiaBarometer (2003-2007)	European Values Study (1981-2009)
Asian Barometer Survey (2001-2010)	ISSP (1985-2016)
Australian Election Study (1987-2016)	Latinobarómetro (1995-2015)
CDCEE (1990-2001)	New Europe Barometer (1991-2005)
CSES (1996-2013)	Voice of the People Series (2000-2012)
Eurobarometer: Candidate Countries (2000-2004)	World Values Survey (1981-2014)

## Dependent Variable

Satisfaction with democracy correlates with other measures of political support, but there are disagreements regarding what exactly it measures (Canache, Mondak, & Seligson, 2001). It is being used here not to measure support for the principle of democracy, but rather how the overall democratic system is functioning in practice (Linde & Ekman, 2003). Using multiple survey sources requires harmonizing different answer scales. Fortunately, satisfaction with democracy is one of the most consistent items across different surveys. About 63% of surveys in this study ask the following typical question: *Overall, how satisfied are you with the way democracy works in this country? Not at all satisfied, not very satisfied, fairly satisfied, or very satisfied.* There are minor variations in the question wording, such as whether it specifies ‘the country’, ‘your country’, or names the country. Another 15% use slightly different questions and four-point answer scales, with the following being the most common variation: *very dissatisfied, somewhat dissatisfied, somewhat satisfied, very satisfied.* The remaining 22% of surveys use three, five, six, ten, or eleven-point answer scales.

Two dependent variables were constructed for this study, one for country-year analysis and one for respondent analysis. To create the country-year variable, different survey items were rescaled to range from 0 to 100, where 0 represents the lowest level of satisfaction and 100 represents the highest. This approach enables meaningful comparisons between different survey sources without losing data. The rescaled answers from all respondents were then averaged within each country-survey observation. These aggregated country-survey scores were finally averaged by country-year to create the first version of the dependent variable. This two-step averaging process was necessary because some national surveys span multiple years and different sources sometimes conduct surveys within the same country within the same year. When surveys span multiple years, there are often a relatively small number of respondents in one or more of the years. Creating country-year scores using a small portion of respondents can drastically skew the resulting scores and widen confidence intervals, making them unreliable and not representative of the wider population. However, when multiple sources conduct surveys within the same country-year, which often occurs, the existence of overlapping observations prevents time-series regression modelling. That is why respondent answers are first rescaled, then averaged within county-survey observations, and finally averaged by country-year. This data can then also be merged with other datasets using the same level of analysis because the observations are unique.

The second dependent variable in this study is used with respondent-level analysis. This variable was created by dichotomising other answer scales into 0 and 1, where 0 represents being dissatisfied and 1 represents being satisfied with the way democracy works. Indifferent answers and scale midpoints were recoded as dissatisfied, which means that the variable more accurately measures satisfaction than it measures dissatisfaction. Some variation was lost recoding this variable, but the dichotomisation is necessary for making meaningful comparisons between different sources with different answer scales. This version of the dependent variable was included within the HUMAN Surveys respondent dataset (Klassen, 2018a).

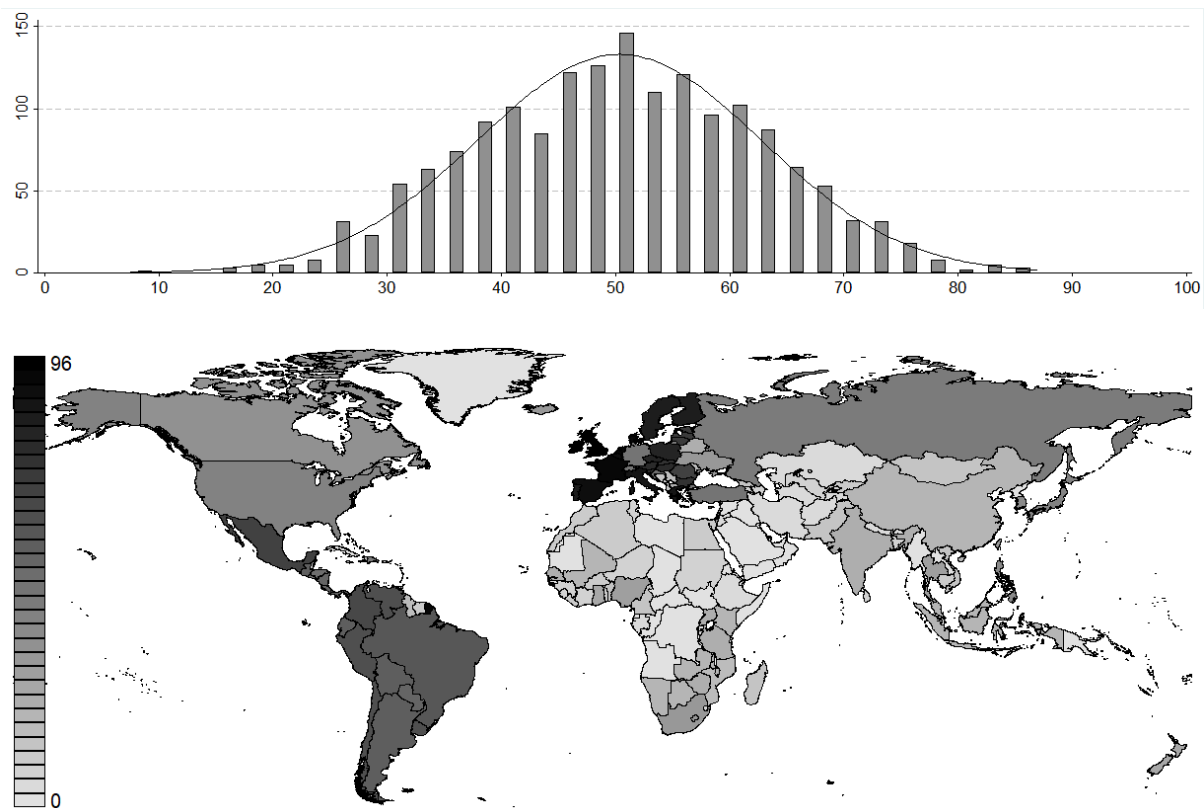


Figure 1: Satisfaction with democracy histogram displays country-year scores with normal curve. Heat map shows number of yearly scores per country, darker countries indicate more scores.

Figure 1 displays country-year dependent variables scores in two ways: a histogram showing the distribution with a normal curve, and a heat map showing the density of scores by country. Different survey designs and sampling methods require caution when interpreting results. Merged satisfaction with democracy data is suitable for analysing general patterns in aggregate, but perhaps not as reliable when making specific comparisons between different survey sources or answer scales. However, this study is looking for these general patterns rather than trying to make specific comparisons.

## Independent Variables

The twelve independent economic indicators in this study include trade volume, government debt, real interest rate, GDP growth, income inequality, government consumption, unemployment, inflation, balance of trade, government budget balance, gross national savings,

and GDP per capita. All variables except income inequality were retrieved via the Quality of Government dataset (Teorell et al., 2017). The original values of economic indicators were transformed into centiles for some analyses because they range widely in terms of skewness, kurtosis, mean scores, and standard deviations. This made the independent variables into ordinal variables with integer values ranging from 1 to 100, with about 1% of original values in each centile group. Doing so allows more meaningful comparisons between variables, enables clearer data visualisation, and makes some results easier to interpret. Using centile versions of the original variables reduces the extreme effects of outlier cases while not throwing any data away.

Six economic indicators come from the World Development Indicators database (World Bank, 2017). Total government debt represents outstanding financial obligations to others as a percentage of GDP. This variable was supplemented with additional sources to reduce missing data (IMF, 2017; Schwab & Sala-i-Martin, 2015). Trade volume represents the sum of exports and imports as a percentage of GDP. Balance of trade as a percentage of GDP was calculated by subtracting imports from exports. GDP growth is the annual percentage change in value of GDP based on constant local currency, and was supplemented with data for the same variable from the International Monetary Fund (IMF, 2017). Inflation represent the annual percentage change in the cost to an average consumer for a fixed basket of goods and services. The real interest rate represents the interest rate received by lenders after adjusting for inflation.

Three economic indicators come from the World Economic Outlook database (IMF, 2017). Government budget balance represents government revenues minus expenditures as a percentage of gross domestic product (GDP). Gross national savings represents the total personal, business, and government savings as a percentage of GDP. Unemployment represents either the unemployed as a percentage of the labour force or as a percentage of people available and willing to work.

Three remaining economic indicators come from different sources. GDP per capita is in current United States dollars and data comes from the United Nations Statistical Division (National Accounts Section, 2017). Income inequality is measured using the Gini coefficient with data from the United Nations University (UNU-WIDER, 2017) supplemented with data from additional sources (Deininger & Squire, 1996; LIS, 2016; World Bank, 2017). Government consumption comes from the Groningen Growth and Development Centre (2013) and represents government consumption as a per capita share of GDP using purchasing power parity (PPP) rates.

The study also uses seven control variables. Three binary political system variables were created by combining sources to minimise missing data. These include variables representing federal versus other forms of government (Norris, 2009; Persson & Tabellini, 2005; Wig, Hegre, & Regan, 2015), majoritarian or plurality versus other forms of electoral system (Beck, Clarke, Groff, Keefer, & Walsh, 2001; Bormann & Golder, 2013; IDEA, 2016; Norris, 2009; Persson & Tabellini, 2005; Wig et al., 2015), and presidential versus other forms of executive government (Beck et al., 2001; Gerring & Thacker, 2008). Four respondent-level demographics are common variables available through HUMAN Surveys (Klassen, 2018a, 2018b). These include age in three categories (under 30, 20 to 50, and over 50), gender (male and female), income (lower, middle, higher), and education (primary or lower, secondary or vocational, and tertiary or higher).

## Methods

Multilevel models are recommended given the structure of the data (Wells & Krieckhaus, 2006), but these methods are supplemented with scatter plots, bar charts, and other types of regressions. The methods move from simple bivariate analysis to data visualizations before confirming economic indicator ranges using multilevel models. Analysis methods start at the country-year level, but ranges are confirmed at the respondent level. Some methods use centile versions of economic indicators, but binary variables are used to represent positive or negative ranges. Ranges were determined by analysing results from data visualizations and then creating binary variables to represent ranges with potentially positive or negative effects on satisfaction with democracy. These range and threshold variables were constructed by recoding values from the original economic indicator variables.

The first three methods are useful for determining the direction, significance, availability, and strength of economic indicators for explaining satisfaction with democracy. The first method uses scatter plots with linear fit lines to determine whether economic indicators have overall positive or negative effects. The scatter points represent country-survey scores and linear fit lines are displayed with 99% confidence intervals. The second method uses pairwise correlations between country-year scores and the economic indicators. This determines if relationships are significant and displays the availability of matching data points. The third method uses bivariate linear regressions with robust standard errors to show the relative strength of different economic indicators. These three methods are a helpful starting point, but they cannot tell us which values may have the strongest and most significant effects on satisfaction with democracy.

The next set of methods focus on data visualization to help determine potential value ranges with significant negative or positive effects. The main method displayed in the results involves graphing the coefficients from ninety multilevel bivariate models for each economic indicator. The independent variable in each of these models is binary and includes the five percentiles both above and below each percentile point. This means that bars represent coefficients for variables representing about 11% of independent variable cases centred around each percentile. The bars are shaded depending on the significance level of these coefficients, with darker shades representing higher levels of significance. Similar additional data visualisation methods that group values differently are summarised in Appendix 1. They enable us to visualize the direction, strength, and significance of economic indicator effects at different values. However, these visualizations do not control for other factors such as the political system, respondent demographics, or other aspects of the economy.

The last set of methods use multilevel multivariate models to test the significance and strength of positive and negative value ranges. There are not enough matching data points when including all independent variables within one model. Three models were therefore constructed based on the availability of data to ensure sufficient country-year variation. The same models were used at the country-year and respondent levels, but respondent-level models also control for basic demographics. The economic indicator ranges were verified using additional robustness confirmation models, revealing comparable results whether using linear or multilevel models, separate or combined cross-national surveys, and a range of additional control variables. A variety of different models consistently showed similar results and relationships maintained significance across numerous iterations of each model.



## **Results**

Results move from bivariate analysis to data visualization and finally to multilevel models. The first set of results help determine the direction and strength of the relationships for each economic indicator. The second set visualise these relationships to help determine which ranges might have the strongest positive and negative effects. The third set of results tests the threshold and range variables using multilevel models while controlling for other factors such as the political system and respondent demographics.

### **Bivariate Analysis**

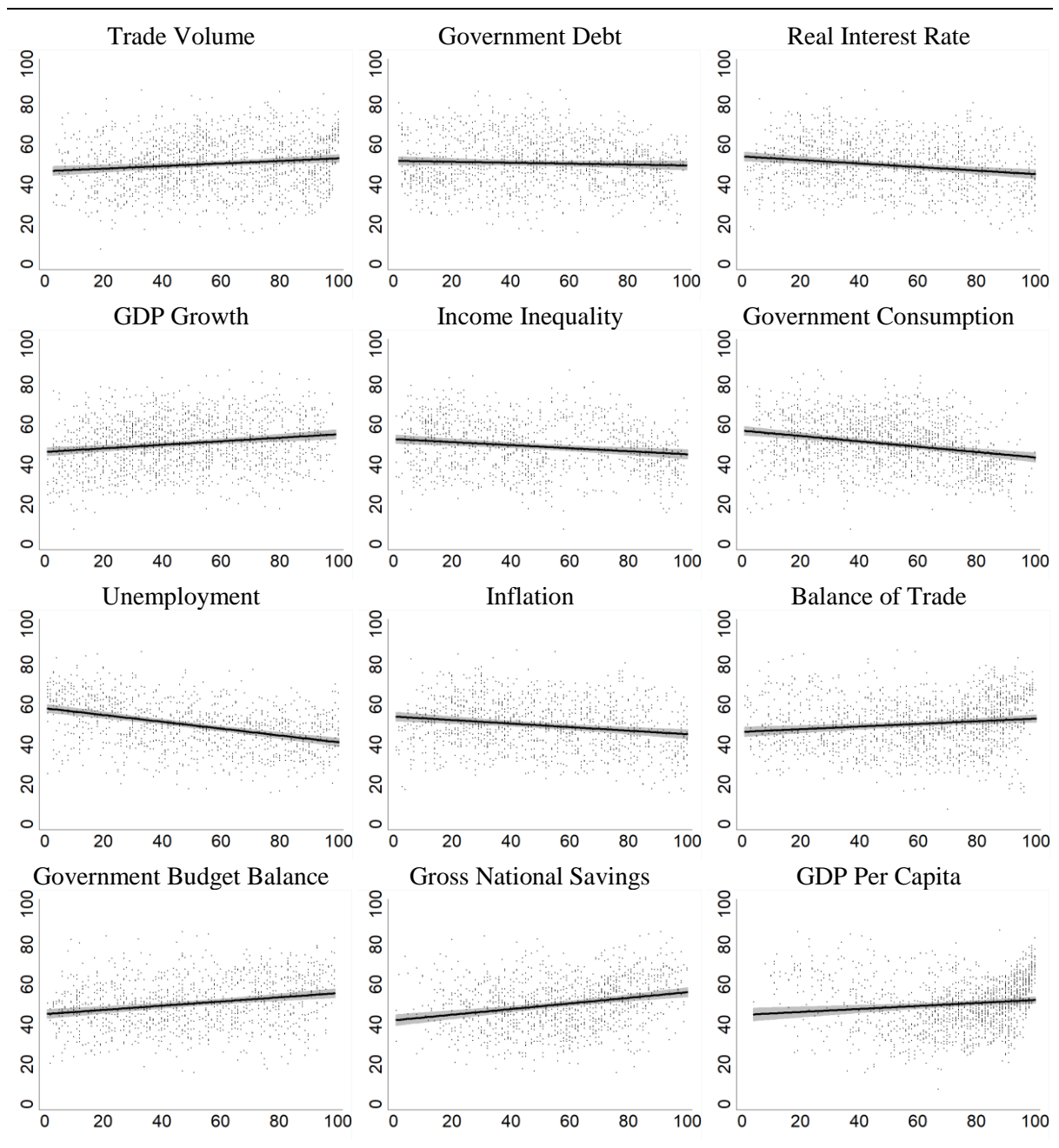


Figure 2 scatter plots use centile versions of each economic indicator and display black linear fitted lines with grey 99% confidence intervals. They visualize the relationship between each economic indicator and country-year satisfaction with democracy scores. These findings are in the expected directions, but scatter plots do not provide information about the significance or strength of relationships.

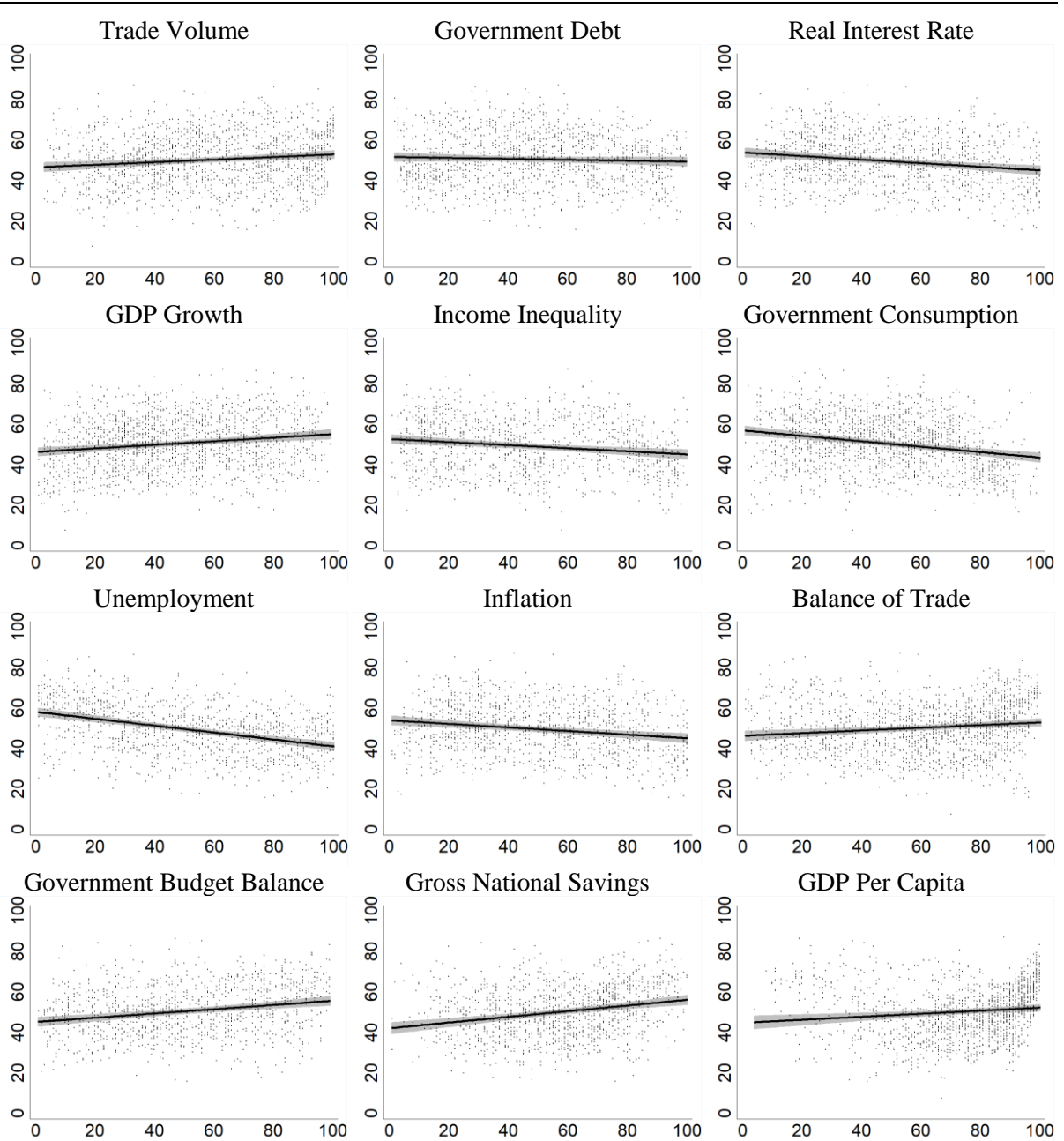


Figure 2: Scatter plots and linear fit lines with 99% confidence intervals. Horizontal axes represent economic indicator centiles. Vertical axes represent country-year satisfaction with democracy scores.

We next investigate the significance, availability, and explanatory strength of the different economic indicators. Table 2 displays pairwise correlations and linear regressions using economic indicators and country-year satisfaction with democracy scores. They all obtain significance, but government debt does so with a lower threshold ( $p < 0.1$ ). Based on  $R^2$  values, government debt also has low explanatory power. The variable was retained because further analysis using value ranges will reveal if certain levels of government debt have more significant effects. Government consumption, government debt, real interest rate, income inequality, unemployment rate, and inflation rate all show negative effects on satisfaction with democracy. Government budget balance, gross national savings, GDP per capita, GDP growth, trade volume, and balance of trade have positive effects. Based on coefficients and  $R$ -squared values, gross national savings shows the strongest positive relationship and unemployment shows the strongest negative relationship. Trade volume, balance of trade, and GDP per capita

all have relatively low explanatory power, but as with government debt we will examine if specific values of these indicators have better explanatory strength. We will next use data visualization methods to determine the potential ranges with stronger positive and negative effects on satisfaction with democracy.

Table 2: Pairwise correlations and linear regressions for satisfaction with democracy

	Pairwise Correlations			Linear Regressions			
	C	P	O	C	SE	P	R2
Trade Volume	0.133	0.000	1,456	0.064	0.013	0.000	0.018
Government Debt	-0.050	0.072	1,302	-0.023	0.012	0.000	0.003
Real Interest Rate	-0.188	0.000	1,172	-0.088	0.014	0.000	0.035
GDP Growth	0.171	0.000	1,481	0.088	0.014	0.000	0.029
Income Inequality	-0.170	0.000	1,125	-0.076	0.013	0.000	0.029
Government Consumption	-0.247	0.000	1,479	-0.134	0.015	0.000	0.061
Unemployment	-0.403	0.000	1,103	-0.170	0.012	0.000	0.163
Inflation	-0.232	0.000	1,378	-0.116	0.014	0.000	0.054
Balance of Trade	0.139	0.000	1,456	0.067	0.013	0.000	0.019
Government Budget Balance	0.227	0.000	1,136	0.105	0.013	0.000	0.052
Gross National Savings	0.247	0.000	1,218	0.141	0.016	0.000	0.061
GDP Per Capita	0.127	0.000	1,475	0.075	0.019	0.000	0.016

Dependent variable is country-year satisfaction with democracy score. Independent variables are in centiles. The first three columns show correlation coefficients (C), significance p-values (P), and number of country-year observations (O). The last four columns show regression coefficients (C), robust standard errors (SE), significance p-values (P), and R-squared measures (R2).

## Data Visualisation

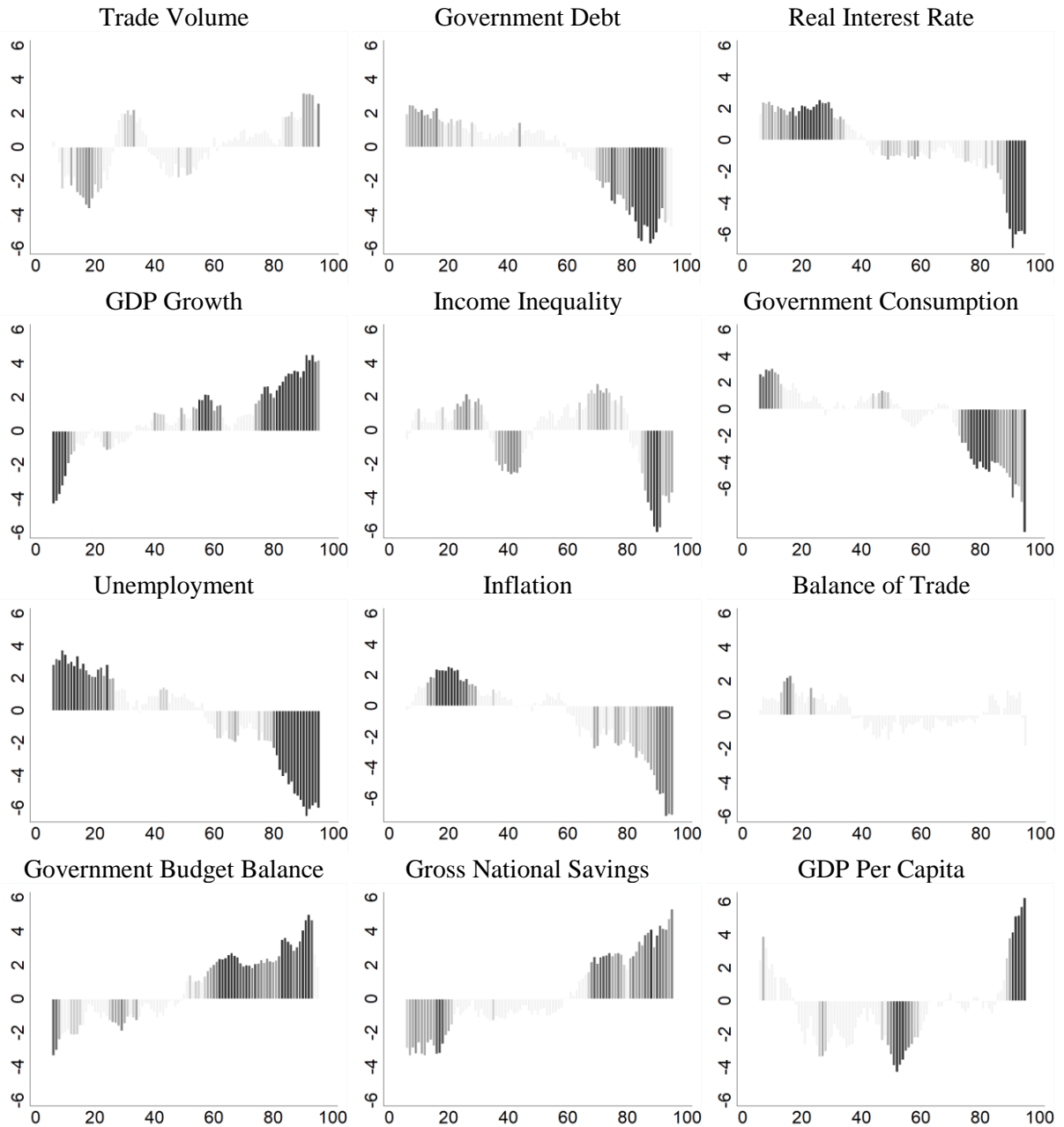


Figure 3 displays results that visually summarise ninety bivariate multilevel regressions for each economic indicator. The variables used in these regressions were created by combining eleven centiles around a central point. Bars at each point along the horizontal axes represents a regression using that centile combined with five centiles both above and below that point. The darker the bar the more significant the relationship for the decile centred at that point. The charts omit the first and last five bars because these regressions are based on five or less centiles, making them less reliable. The charts displayed here and in Appendix 1 were used to create binary variables representing economic indicator ranges with positive or negative effects.

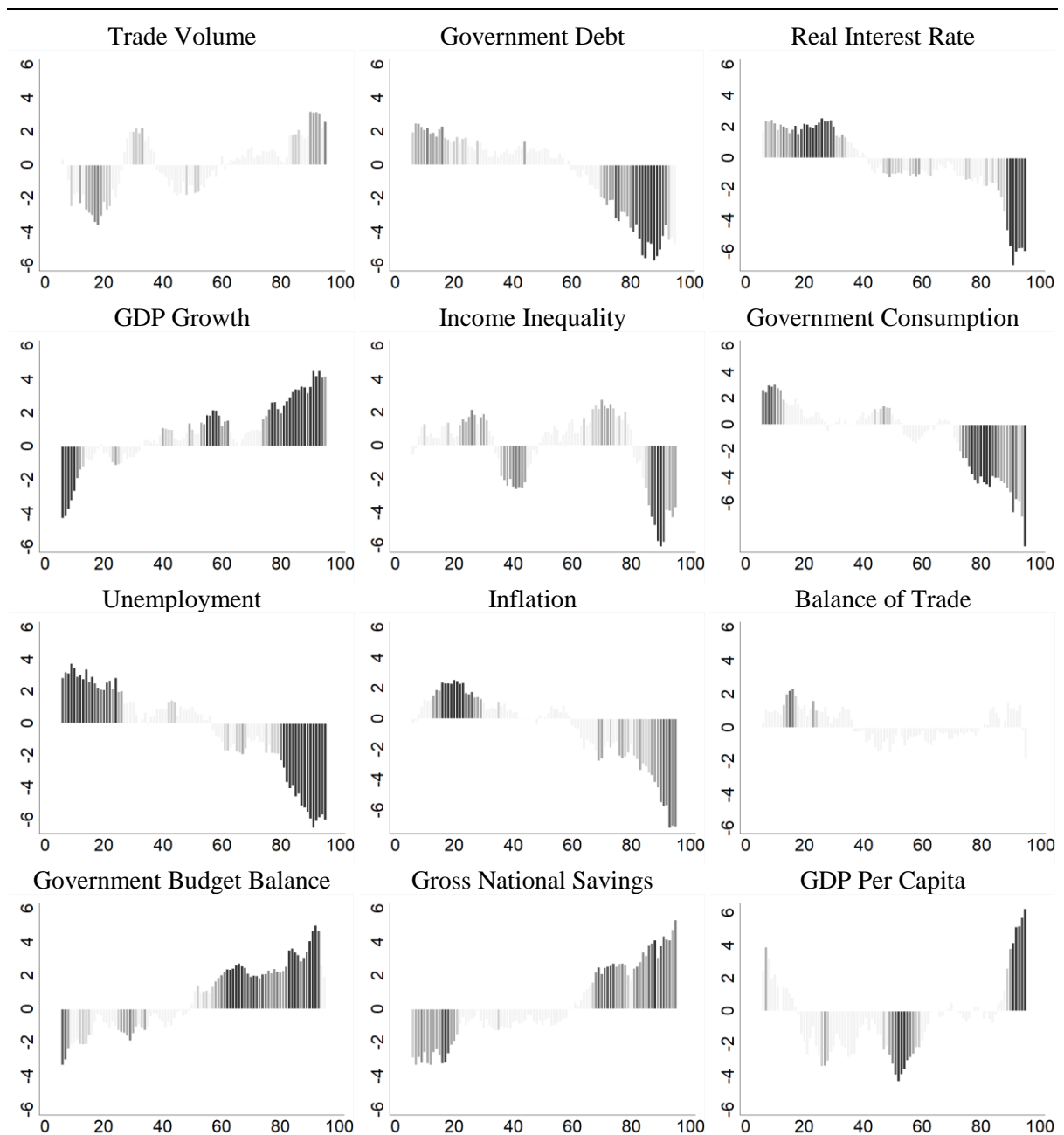


Figure 3: Each bar represents the coefficient from a multilevel bivariate random-intercept model with robust standard errors. Dependent variables are country-year satisfaction with democracy scores. Binary independent variables combine values from five centiles above and below each point. Darker bars represent higher levels of significance.

The centile points in

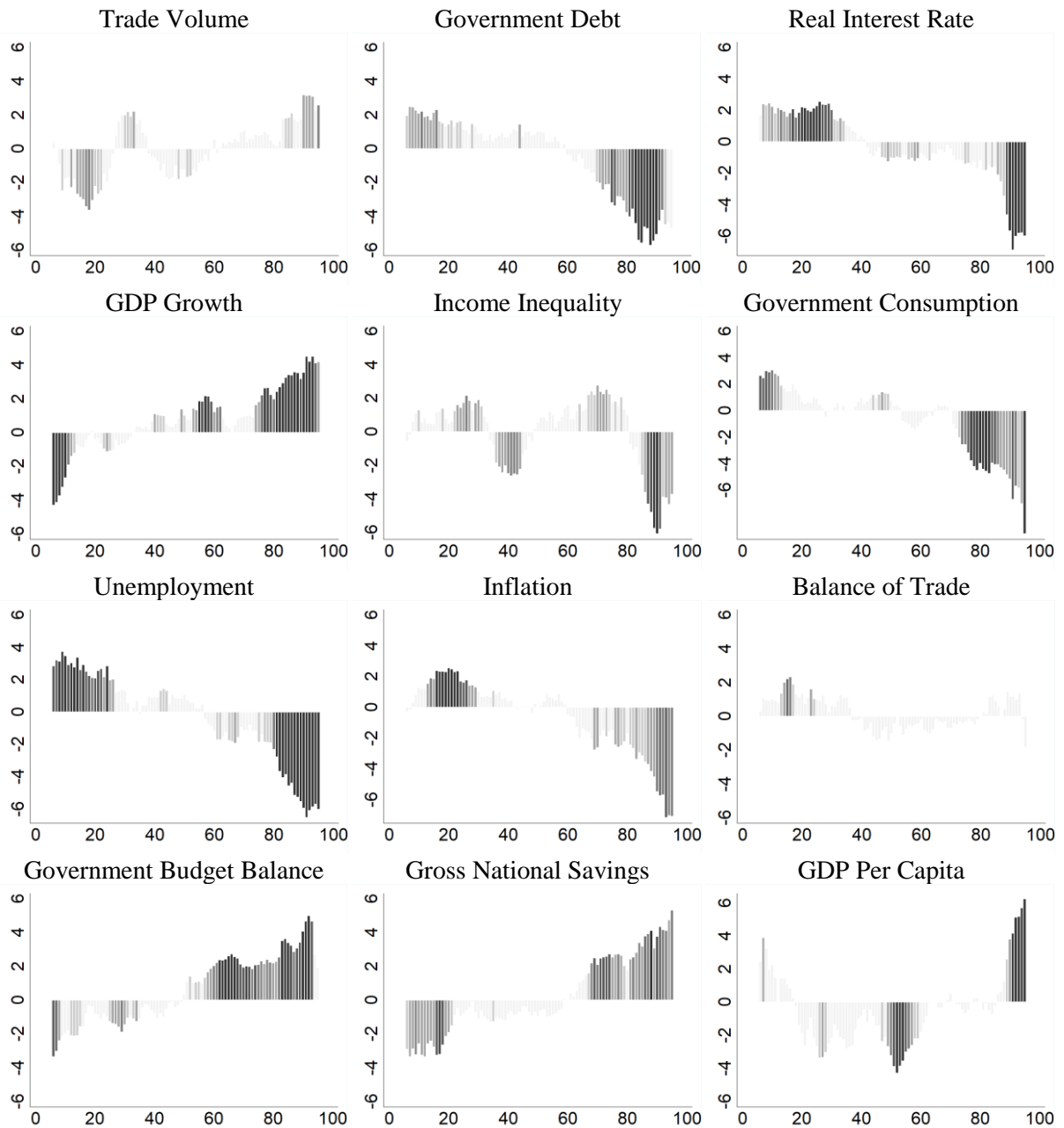


Figure 3 were referenced for their original values and range variables were created by recoding the original values. The figures cited here are estimates for when economic indicators begin to have significant effects on satisfaction with democracy. As the figures above show, higher or lower values often have stronger and more significant effects. Starting with trade volume, positive effects are evident above 129% of GDP and negative effects below 51.4% of GDP. Percentages over 100% are possible because trade volume represents the sum of both imports and exports. Next, government debt is positively associated with democratic satisfaction when it is below about 42.5% of GDP and starts to produce negative effects above 61.9% of GDP. The effects are especially strong and negative when total government debt exceeds about 80% of GDP. The real interest rate produces positive effects below 3.6% and starts to produce increasingly negative effects above 4.9%, with the strongest and most significant negative effects occurring above 14.2%. Annual GDP growth above 2.7% has positive effects on satisfaction with democracy, but the strongest consistent effects occur above 5.4%. GDP growth rates below 0.5% are associated with negative effects, but the strongest consistent

effects occur below -0.5%. Income inequality displays the strongest positive effects with Gini coefficients between 25.9 and 33, with lower values not consistently obtaining significance. Gini coefficients above 47.5 have negative effects on satisfaction with democracy, but the strongest negative effects occur above 50.7. Government consumption has positive effects when it is between 0.094% and 0.141% of GDP per capita, but shows increasingly negative effects above 0.207%.

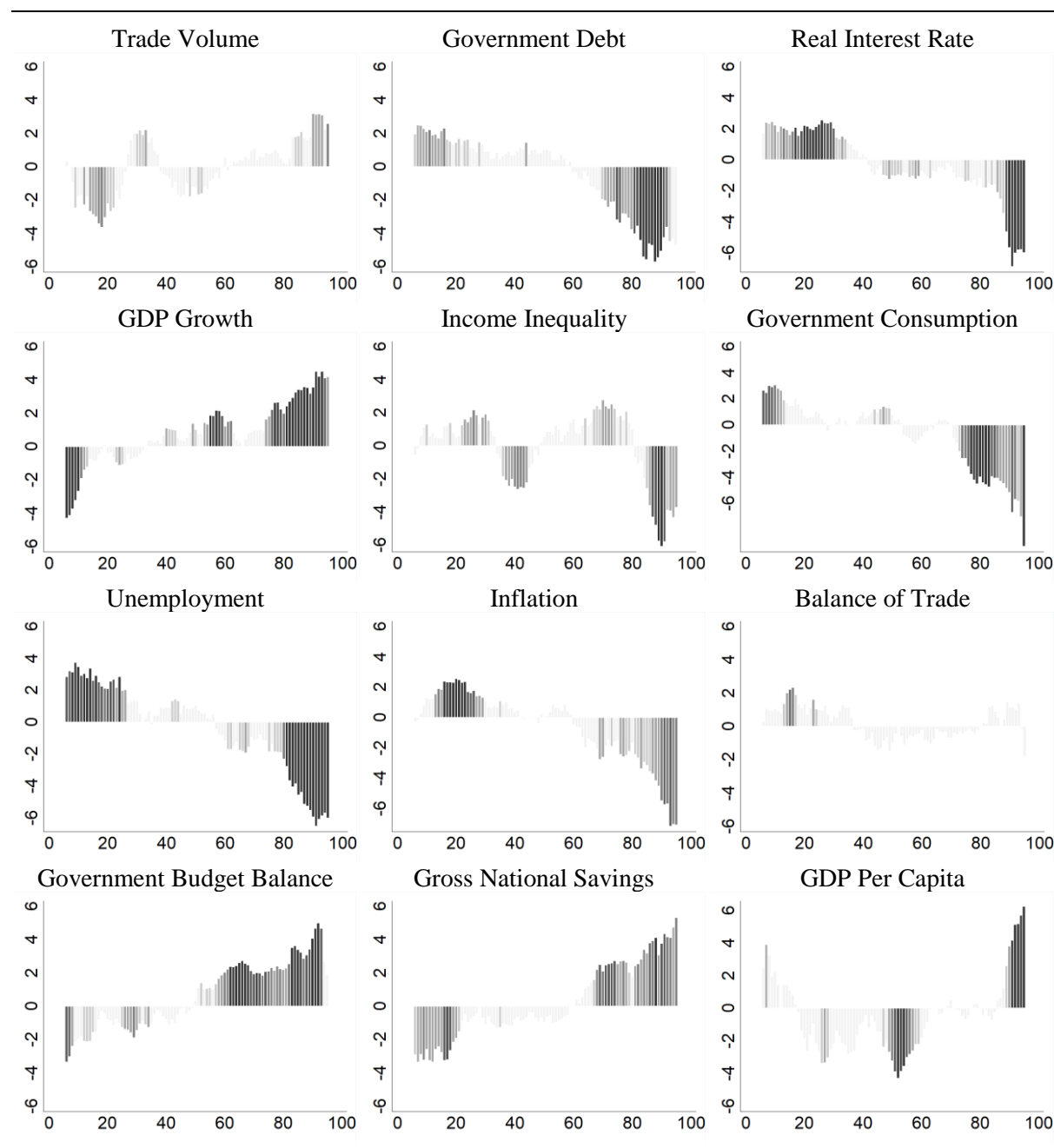


Figure 3 does not display the first five centiles of government consumption, but excluding the lowest values from the positive range increases the strength of the relationship. Unemployment rates below 6% produce positive effects and rates above 8.4% start to have negative effects, but the strongest negative effects are evident when unemployment exceeds about 14%. Inflation produces positive effects between 1.1% and 2.5%. Deflation or very low inflation can produce some negative effects, but they are often not significant. Inflation effects start becoming negative above 6.8% and consistently stronger and more significant above 13.3%.



Balance of trade demonstrates weak effects overall, but some positive effects are evident when imports exceed exports by between 5% to 27%. Some negative effects do occur when imports exceed exports by less than 4.8% of GDP, but the relationship is weak. Government budget balance deficits of 2.5% or less can have positive effects, but the strongest positive effects occur with surpluses of 0.5% or more. Government deficits over 3.5% of GDP show negative effects on, with deficits greater than 7.9% producing increasingly stronger negative effects. Gross national savings displays increasingly positive effects above 22.7% of GDP and consistently negative effects below 15.7%. Finally, GDP per capita produces increasingly positive effects above \$27,462 and negative effects below \$5,031.

## **Multilevel Models**

The next set of results analyses economic indicators using two types of multilevel models: random-intercept models with county-year scores and mixed-effects models with dichotomized responses. There are two sets of each type of model, analysing first positive and then negative effects of economic indicator ranges. Including all variables in one model reduces the number of available observations and the variation necessary for reliable analysis. Economic indicators were therefor divided into three groups based on data availability and the avoidance of multicollinearity.

Table 3: Positive effects on country-year satisfaction with democracy

	Model P1			Model P2			Model P3		
	C	SE	P	C	SE	P	C	SE	P
Trade Volume > 129%	2.83	0.96	0.003						
Government Debt < 42.5%	2.57	0.84	0.002						
Real Interest Rate < 3.6%	2.63	0.61	0.000						
GDP Growth > 2.7%	2.95	0.54	0.000						
Income Inequality 25.9 to 33				1.47	0.52	0.005			
Gov. Consumption 0.94% to 0.14%				2.55	0.96	0.008			
Unemployment < 6%				4.64	0.77	0.000			
Inflation 1.1% to 2.5%				2.02	0.65	0.002			
Balance of Trade -27 to -5%							1.77	0.84	0.035
Budget Balance > -2.5%							3.79	0.69	0.000
National Savings > 22.7%							3.11	0.78	0.000
GDP Per Capita > \$27,462							3.89	0.71	0.000
Federal System	2.67	1.35	0.047	4.20	1.63	0.010	1.86	1.15	0.107
Majoritarian	4.33	1.63	0.008	10.54	3.20	0.001	4.31	2.05	0.036
Presidential	1.77	1.55	0.254	3.69	2.13	0.083	3.30	1.30	0.011
Country-Years	1,010			819			1,096		
Countries	107			76			117		
Wald Chi2	142.4			121.2			105.2		
Degrees of Freedom	7			7			7		
Log pseudolikelihood	-3476.4			-2807.7			-3762.6		

Two-level random-intercept models using satisfaction with democracy scores as dependent variable and binary economic indicator ranges as independent variables. Displays regression coefficients (C), robust standard errors (SE), and significance p-values (P).

Table 3 specifies indicator ranges as above (>) or below (<) specified values, or between two values. Most ranges examined for positive effects maintain strong significant at the country-year level. Weaker relationships are evident for balance of trade, government consumption, and income inequality, but countries could still see benefits if within the specified ranges: trade volumes above 129% of GDP, government debt below 42.5% of GDP, real interest rates below 3.6%, GDP growth above 2.7%, income inequality (Gini coefficients) between 25.9 and 33, government consumption between 0.94% and 0.14% of GDP per capita, unemployment below 6%, inflation between 1.1% and 2.5%, imports 5% to 27% of GDP higher than exports, government budget balance deficits below 2.5% of GDP, gross national savings above 22.7% of GDP, and GDP per capita above \$27,462. These ranges were confirmed using country-year scores.

Table 4: Positive effects on respondent satisfaction with democracy

	Model P4			Model P5			Model P6		
	C	SE	P	C	SE	P	C	SE	P
Trade Volume > 129%	0.02	0.02	0.357						
Government Debt < 42.5%	0.04	0.01	0.011						
Real Interest Rate < 3.6%	0.02	0.01	0.146						
GDP Growth > 2.7%	0.05	0.01	0.000						
Income Inequality 25.9 to 33				0.01	0.01	0.609			
Gov. Consumption 0.94% to 0.14%				0.04	0.02	0.048			
Unemployment < 6%				0.06	0.01	0.000			
Inflation 1.1% to 2.5%				0.01	0.01	0.381			
Balance of Trade -27 to -5%							0.04	0.02	0.071
Budget Balance > -2.5%							0.06	0.01	0.000
National Savings > 22.7%							0.06	0.02	0.003
GDP Per Capita > \$27,462							-0.04	0.02	0.053
Federal System	0.02	0.02	0.521	0.00	0.04	0.928	0.01	0.03	0.849
Majoritarian	-0.00	0.02	0.915	0.02	0.10	0.802	-0.01	0.03	0.843
Presidential	0.06	0.04	0.122	0.08	0.05	0.124	0.07	0.03	0.035
Age Category	0.00	0.00	0.368	0.00	0.00	0.918	0.00	0.00	0.429
Female Gender	-0.01	0.00	0.002	-0.02	0.00	0.000	-0.01	0.00	0.000
Education Level	-0.01	0.00	0.126	0.00	0.00	0.805	-0.00	0.00	0.345
Income Group	0.03	0.00	0.000	0.03	0.00	0.000	0.02	0.00	0.000
Respondents	1,036,076			788,215			1,168,748		
Countries	107			76			117		
Wald Chi2	152.5			149.8			160.3		
Degrees of Freedom	11			11			11		
Log pseudolikelihood	-697403.0			-518238.1			-790066.0		

Mixed-effects models using dichotomized respondent satisfaction with democracy as dependent variable and economic indicator ranges as independent variables. Displays regression coefficients (C), robust standard errors (SE), and significance p-values (P).

Table 4 examines the same positive effect ranges, but this time using respondent-level satisfaction with democracy. The positive ranges for GDP growth, unemployment, and budget balance are highly significant. Gross national savings and government debt show moderate significance, while balance of trade and government consumption are weakly significant. Trade volume, real interest rate, income inequality, and inflation fail to obtain significance at the respondent level. Curiously, the GDP per capita range shows a negative relationship and this finding occurs consistently even after adjusting the range in both directions. Additional visualization methods in Appendix 1 reveal positive effects for the lowest quintile of country-year observations, which could help explain this unexpected anomaly. For the demographic controls, gender and income show significant effects, but age and education do not. We next look at the negative ranges first with country-year and then respondent models.

Table 5: Negative effects on country-year satisfaction with democracy

	Model N1			Model N2			Model N3		
	C	SE	P	C	SE	P	C	SE	P
Trade Volume < 51.4%	-2.22	0.95	0.019						
Government Debt > 61.9%	-3.65	1.09	0.001						
Real Interest Rate > 4.9%	-2.72	0.57	0.000						
GDP Growth < 0.5%	-3.91	0.71	0.000						
Income Inequality > 47.5				-1.91	0.79	0.016			
Gov. Consumption > 0.207%				-4.75	1.30	0.000			
Unemployment > 8.4%				-4.94	0.78	0.000			
Inflation > 6.8%				-3.61	0.89	0.000			
Balance of Trade > -4.8%							-1.62	0.86	0.059
Budget Balance < -3.5%							-3.42	0.68	0.000
National Savings < 15.7%							-2.16	0.81	0.008
GDP Per Capita < \$5,031							-3.91	0.98	0.000
Federal System	3.00	1.12	0.007	3.45	1.40	0.014	3.53	1.14	0.002
Majoritarian	3.61	1.60	0.024	10.49	3.42	0.002	4.98	2.03	0.014
Presidential	1.83	1.59	0.249	1.52	1.80	0.397	2.97	1.36	0.029
Country-Years	1,010			819			1,096		
Countries	107			76			117		
Wald Chi2	121.8			147.3			80.6		
Degrees of Freedom	7			7			7		
Log pseudolikelihood	-3468.9			-2789.8			-3780.7		

Two-level random-intercept models using satisfaction with democracy scores as dependent variable and economic indicator ranges as independent variables. Displays regression coefficients (C), robust standard errors (SE), and significance p-values (P).

Table 5 shows negative effects on country-year satisfaction with democracy scores when trade volumes are below 51.4% of GDP, government debt is above 61.9% of GDP, the real interest rate is above 4.9%, GDP growth is below 0.5%, income inequality (Gini coefficient) is above 47.5, government consumption is above 0.207% of GDP per capita, unemployment is over 8.4%, inflation is above 6.8%, imports are no more than 4.8% of GDP higher than exports, budget balance deficits are greater than 3.5% of GDP, gross national savings are below 15.7% of GDP, and GDP per capita is below \$5,031. Balance of trade and income inequality again show weaker relationships relative to the other economic indicators, but the negative range for government consumption is more significant than its positive range. Conversely, the negative range for trade volume looks weaker than its positive counterpart.

Table 6: Negative effects on respondent satisfaction with democracy

	Model N4			Model N5			Model N6		
	C	SE	P	C	SE	P	C	SE	P
Trade Volume < 51.4%	-0.03	0.02	0.137						
Government Debt > 61.9%	-0.06	0.02	0.008						
Real Interest Rate > 4.9%	-0.03	0.01	0.002						
GDP Growth < 0.5%	-0.06	0.02	0.000						
Income Inequality > 47.5				-0.03	0.02	0.128			
Gov. Consumption > 0.207%				-0.11	0.02	0.000			
Unemployment > 8.4%				-0.06	0.02	0.001			
Inflation > 6.8%				-0.02	0.02	0.382			
Balance of Trade > -4.8%							-0.02	0.02	0.243
Budget Balance < -3.5%							-0.07	0.01	0.000
National Savings < 15.7%							-0.06	0.02	0.001
GDP Per Capita < \$5,031							-0.05	0.02	0.038
Federal System	0.01	0.02	0.497	0.01	0.03	0.782	-0.00	0.03	0.915
Majoritarian	-0.02	0.03	0.419	0.08	0.10	0.405	-0.00	0.04	0.901
Presidential	0.05	0.04	0.214	0.04	0.05	0.350	0.06	0.04	0.110
Age Category	0.00	0.00	0.389	-0.00	0.00	0.958	0.00	0.00	0.522
Female Gender	-0.01	0.00	0.001	-0.02	0.00	0.000	-0.01	0.00	0.000
Education Level	-0.01	0.00	0.200	0.00	0.00	0.939	-0.00	0.00	0.332
Income Group	0.03	0.00	0.000	0.03	0.00	0.000	0.02	0.00	0.000
Respondents	1,036,076			788,215			1,168,748		
Countries	107			76			117		
Wald Chi2	144.1			211.3			128.3		
Degrees of Freedom	11			11			11		
Log pseudolikelihood	-697159.0			-517126.3			-789985.0		

Mixed-effects models using dichotomized respondent satisfaction with democracy as dependent variable and economic indicator ranges as independent variables. Displays regression coefficients (C), robust standard errors (SE), and significance p-values (P).

Table 6 provides results for negative ranges using respondent level satisfaction with democracy. GDP growth, unemployment, and budget balance are again highly significant, but now government consumption and gross national savings are similarly significant. Government debt and real interest rate show moderate significance, while GDP per capita is weakly significant. Trade volume, income inequality, inflation, and balance of trade failed to obtain significance at the respondent level. However, these variables were kept in this study because they obtained significance at the country-year level. In addition, these results are important because they help us determine which economic indicators have more significant effects than others. Non-significant results are still results and provide valuable information.

## Discussion

A substantial literature on economic voting demonstrates the importance of factors such as unemployment, inflation, and economic growth for voter choices (Lewis-Beck & Stegmaier, 2000, 2013). The aim of this study was to uncover economic indicator value ranges with the strongest significant effects on public satisfaction with democracy. Table 7 provides a summary of the ranges. This research has implications for the management of government finances, monetary policy, improving satisfaction with democracy, helping incumbents stay in office, and fostering political stability.

Table 7: Estimates of values with strongest effects on satisfaction with democracy

	<b>Positive Effects</b>	<b>Negative Effects</b>
Trade Volume (% of GDP)	above 129%	below 51.4%
Government Debt (% of GDP)	below 42.5%	above 61.9%
Real Interest Rate (Annual %)	below 3.6%	above 4.9%
GDP Growth (Annual %)	above 2.7%	below 0.5%
Income Inequality (Gini)	25.9 to 33.0	above 47.5
Gov. Consumption (GDP per capita)	0.094% to 0.141%	above 0.207%
Unemployment (% of workforce)	below 6%	above 8.4%
Inflation (Annual %)	1.1% to 2.5%	above 4.9%
Balance of Trade (% of GDP)	-27% to -5%	above -4.8%
Budget Balance (% of GDP)	above -2.5%	below -3.5%
National Savings (% of GDP)	above 22.7%	below 15.7%
GDP Per Capita (current \$US)	-unclear-	below \$5,031

The implications of this study are that public satisfaction with democracy is strongly affected by economic conditions. Unemployment has the most explanatory power, while gross national savings and GDP growth have the most consistently significant relationships. GDP per capita displays unexpected results that were consistently negative for the supposedly positive range. The most likely reason is a substantial grouping of poorer countries that are satisfied with democracy while moderate income countries are less satisfied. Despite this, there are consistent negative effects for GDP per capita below \$5,031, which aligns with previous research showing comparably low per capita incomes to be associated with democratic regime failure (Przeworski & Limongi, 1993). Countries around this lower income range are likely to have considerably lower standards of living and often fragile democratic traditions. Yet this topic of per capita income needs further investigation because these findings were inconsistent with expectations. Finally, income distributions within an economy also matter, as satisfaction with democracy declines with higher levels of income inequality. Many people living in highly inequitable societies may feel that democracy is working for the few and failing the majority.

GDP growth and the unemployment rate have relatively consistent linear relationships with democratic satisfaction. This means incremental increases in the employment rate and GDP growth tend to be associated with significant positive effects at all levels of these indicators. The strongest jump in satisfaction levels occur around the point where GDP growth moves from negative to positive, with marginal increases tapering off as growth levels increase. Keeping unemployment below about 6% of the workforce also appears to be where the biggest positive effects occur. In general, the findings indicate that positive GDP growth and close to natural unemployment rates are associated with higher levels of democratic satisfaction.

Findings for international trade suggest that too little trade is bad for democratic satisfaction and being a wealthy net importing nation tends to be associated with greater satisfaction. This suggests that countries that export more than they import experience negative effects on satisfaction. A possible explanation is that net-exporting countries are more exposed to international influences and global economic effects that are beyond the control of national governments. Exporting countries may have less control over factors affecting national economic conditions and performance, which could be reflected in lower democratic satisfaction levels. Importing countries may have cheaper consumer prices, which could increase public satisfaction.

Satisfaction with democracy tends to be higher when government debt is sustainable, government budgets are balanced, government consumption is moderate, and the national economy saves more than it spends. High government debt and budget deficits both restrict policy choices and make countries more vulnerable to changes in international economic or financial conditions, which could be reflected in lower satisfaction with democracy (Armingeon & Guthmann, 2014; Remmer, 2012). Sustainable debt and deficit levels give governments more options for countering economic downturns and financial crises, meaning citizens are less likely to endure austerity measures or budget cuts. When government consumption per capita is kept at moderate levels, this could improve satisfaction with democracy. It could mean governments need to spend enough to provide adequate services and infrastructure, but not so much that it limits resources available for other sectors of the economy. Similarly, when gross national savings are sufficient governments, individuals, and businesses are better able to weather economic downturns and there is more money available for internal borrowing without turning to international markets. Incumbent governments could therefore improve their chances of re-election if they keep total debts low, balance their budgets, and foster conditions under which the national economy thrives and saves more than it spends.

Regarding monetary policy, findings show that low interest rates and minimal inflation produce the strongest positive effects. Inflation has a range above and below which it tends to be associated with negative effects. This is probably because deflation (negative inflation) means prices are falling, which incentivises consumers to postpone spending, decreasing demand, leading to further deflation, and potentially a recession and higher unemployment. Deflation also increases the real interest rate, which increases the cost of borrowing money, which means people with outstanding loans may have less disposable income. At the other end of the spectrum, high levels of inflation mean things are usually getting more expensive at a faster pace than wage growth, translating into declining standards of living. High interest rates mean people and businesses repaying loans have less money available for spending and employment.

In summary, this study attempted to define the ranges of key economic indicators that affect satisfaction with democracy positively or negatively. Knowing when and how economic indicators may affect satisfaction with democracy is useful for making decisions or measuring risks. The findings of this study should be useful for executives, elected officials, and public policy makers. Future research will hopefully refine or confirm the ranges using different methods and data sources. Additional research could analyse the ranges against additional dependent variables such as trust in government or examine the effects of other key economic indicators. It would also be beneficial to investigate whether demographic groups react differently to some economic indicators. This kind of cross-survey cross-national research is not without its challenges. The biggest potential problem is perhaps that the different survey sources use different sampling and survey methods. This undermines the reliability specific

comparisons between sources, but the increased variation on the dependent variable can make generalized broad findings more reliable.

## Bibliography

- AES. (1987-2016). *Australian Election Study, Voter Studies*.
- AfroBarometer. (1999-2016). *AfroBarometer Data. Rounds 1, 2, 3, 4, 5, and 6*.
- AmericasBarometer. (2004-2014). *AmericasBarometer Surveys 2004 to 2014*.
- Andersen, R. (2012). Support for democracy in cross-national perspective: The detrimental effect of economic inequality. *Research in Social Stratification and Mobility*, 30(4), 389-402. doi:<https://doi.org/10.1016/j.rssm.2012.04.002>
- Anderson, C. J., & Guillory, C. A. (1997). Political Institutions and Satisfaction with Democracy: A Cross-National Analysis of Consensus and Majoritarian Systems. *The American Political Science Review*, 91(1), 66-81.
- Anderson, C. J., & Hecht, J. D. (2014). Crisis of Confidence? The Dynamics of Economic Opinions During the Great Recession. In N. Bermeo & L. M. Bartels (Eds.), *Mass Politics in Tough Times: Opinions, Votes, and Protest in the Great Recession* (pp. 40-71). New York, NY: Oxford University Press.
- Anderson, C. J., & Singer, M. M. (2008). The Sensitive Left and the Impervious Right: Multilevel Models and the Politics of Inequality, Ideology, and Legitimacy in Europe. *Comparative Political Studies*, 41(4-5), 564-599.
- ArabBarometer. (2006-2014). *ArabBarometer Data. Waves I, II, and III*.
- Armingeon, K., & Guthmann, K. (2014). Democracy in crisis? The declining support for national democracy in European countries, 2007–2011. *European Journal of Political Research*, 53(3), 423-442. doi:10.1111/1475-6765.12046
- Armingeon, K., Guthmann, K., & Weisstanner, D. (2016). How the Euro divides the union: the effect of economic adjustment on support for democracy in Europe. *Socio-Economic Review*, 14(1), 1-26.
- AsiaBarometer. (2003-2007). *AsiaBarometer Survey Data*.
- AsianBarometer. (2001-2012). *Asian Barometer Surveys. Wave 1, 2, and 3*.
- Beck, T., Clarke, G., Groff, A., Keefer, P., & Walsh, P. (2001). New Tools in Comparative Political Economy: The Database of Political Institutions. *World Bank Economic Review*, 15(1), 165-176.
- Benton, A. (2005). Dissatisfied Democrats or Retrospective Voters? Economic Hardship, Political Institutions, and Voting Behavior in Latin America. *Comparative Political Studies*, 38(4), 417-442. doi:10.1177/0010414004273856



- Bermeo, N., & Bartels, L. M. (Eds.). (2014). *Mass Politics in Tough Times: Opinions, Votes, and Protest in the Great Recession*. New York, NY: Oxford University Press.
- Bernauer, J., & Vatter, A. (2012). Can't get no satisfaction with the Westminster model? Winners, losers and the effects of consensual and direct democratic institutions on satisfaction with democracy. *European Journal of Political Research*, 51(4), 435-468. doi:10.1111/j.1475-6765.2011.02007.x
- Bormann, N.-C., & Golder, M. (2013). Democratic Electoral Systems around the world, 1946–2011. *Electoral Studies*, 32, 360-369.
- Canache, D., Mondak, J. J., & Seligson, M. A. (2001). Meaning and Measurement in Cross-National Research on Satisfaction with Democracy. *Public Opinion Quarterly*, 65(4), 506-528. doi:10.1086/323576
- CCEB. (2001-2004). *Candidate Countries EuroBarometer*.
- CDCEE. (2004). *Consolidation of Democracy in Central and Eastern Europe 1990-2001*.
- CEEB. (1990-1998). *Central and Eastern EuroBarometer*.
- Clarke, H. D., Dutt, N., & Kornberg, A. (1993). The Political Economy of Attitudes toward Polity and Society in Western European Democracies. *The Journal of Politics*, 55(4), 998-1021. doi:10.2307/2131945
- Cordero, G., & Simón, P. (2016). Economic Crisis and Support for Democracy in Europe. *West European Politics*, 39(2), 305-325. doi:10.1080/01402382.2015.1075767
- Córdova, A., & Seligson, M. A. (2010). Economic Shocks and Democratic Vulnerabilities in Latin America and the Caribbean. *Latin American Politics and Society*, 52(2), 1-35. doi:10.1111/j.1548-2456.2010.00080.x
- CSES. (1996-2016). *Comparative Study of Electoral Systems*.
- Deininger, K. W., & Squire, L. (1996). A New Data Set Measuring Income Inequality. *The World Bank Economic Review*, 10(3), 565-591.
- Díaz-Serrano, L., & Rodríguez-Pose, A. (2012). Decentralization, Subjective Well-Being, and the Perception of Institutions. *Kyklos*, 65(2), 179-193. doi:10.1111/j.1467-6435.2012.00533.x
- ESS. (2002-2014). *European Social Survey, Rounds 1-7*.
- EuroBarometer. (1962-2016). *Standard and Special Eurobarometers*.
- EVS. (1981-2008). *European Values Study, Waves 1-4*.
- Friedrichsen, J., & Zahn, P. (2014). Political support in hard times: Do people care about national welfare? *European Journal of Political Economy*, 35, 23-37.
- Gerring, J., & Thacker, S. C. (2008). *A Centripetal Theory of Democratic Governance*.

- Graham, C., & Sukhtankar, S. (2004). Does Economic Crisis Reduce Support for Markets and Democracy in Latin America? Some Evidence from Surveys of Public Opinion and Well Being. *Journal of Latin American Studies*, 36(2), 349-377.
- Groningen Growth and Development Centre. (2013). *Penn World Table 8.0: Share of Government Consumption at Current PPPs, 2011*.
- Halla, M., Schneider, F. G., & Wagner, A. F. (2013). Satisfaction with democracy and collective action problems: the case of the environment. *Public Choice*, 155(1), 109-137. doi:10.1007/s11127-011-9844-5
- Han, S. M., & Chang, E. C. C. (2016). Economic inequality, winner-loser gap, and satisfaction with democracy. *Electoral Studies*, 44, 85-97.
- IDEA. (2016). *Electoral System Design Database*.
- IMF. (2017). *World Economic Outlook Database*.
- ISSP. (1985-2017). *International Social Survey Programme*.
- Kestilä-Kekkonen, E., & Söderlund, P. (2015). Is it All about the Economy? Government Fractionalization, Economic Performance and Satisfaction with Democracy across Europe, 2002–13. *Government and Opposition*, 52(1), 100-130. doi:10.1017/gov.2015.22
- Klassen, A. (2018a). Human Understanding Measured Across National (HUMAN) Surveys: Codebook for Respondent Data (Publication no. doi/10.7910/DVN/QLKR85). from Harvard Dataverse <http://dx.doi.org/10.7910/DVN/QLKR85>
- Klassen, A. (2018b). Human Understanding Measured Across National (HUMAN) Surveys: Respondent Data (Publication no. doi/10.7910/DVN/XEA5FD). from Harvard Dataverse <http://dx.doi.org/10.7910/DVN/XEA5FD>
- Kornberg, A., & Clarke, H. D. (1994). Beliefs about Democracy and Satisfaction with Democratic Government: The Canadian Case. *Political Research Quarterly*, 47(3), 537-563. doi:10.2307/448843
- Lewis-Beck, M. S., & Stegmaier, M. (2000). Economic Determinants of Electoral Outcomes. *Annual Review of Political Science*, 3(1), 183-219.
- Lewis-Beck, M. S., & Stegmaier, M. (2013). The VP-function revisited: a survey of the literature on vote and popularity functions after over 40 years. *Public Choice*, 157(3), 367-385. doi:10.1007/s11127-013-0086-6
- Linde, J., & Ekman, J. (2003). Satisfaction with democracy: A note on a frequently used indicator in comparative politics. *European Journal of Political Research*, 42(3), 391-408. doi:10.1111/1475-6765.00089
- LIS. (2016). *Luxembourg income study database and the luxembourg wealth study database*.
- Lühiste, K. (2014). Social Protection and Satisfaction with Democracy: a Multi-level Analysis. *Political Studies*, 62(4), 784-803. doi:10.1111/1467-9248.12080

- Meer, T. v. d., & Hakhverdian, A. (2017). Political Trust as the Evaluation of Process and Performance: A Cross-National Study of 42 European Countries. *Political Studies*, 65(1), 81-102. doi:doi:10.1177/0032321715607514
- National Accounts Section. (2017). *National Accounts Main Aggregates Database*.
- NEB. (1991-2012). *New Europe Barometer Surveys*.
- Norris, P. (2009). *Democracy Time-Series Dataset Release 3.0*.
- Paldam, M. (1981). A Preliminary Survey of the Theories and Findings on Vote and Popularity Functions. *European Journal of Political Research*, 9(2), 181-199. doi:10.1111/j.1475-6765.1981.tb00598.x
- Persson, T., & Tabellini, G. (2005). *The Economic Effects of Constitutions*.
- Przeworski, A., Alvarez, M., Cheibub, J. A., & Limongi, F. (1996). What Makes Democracies Endure? *Journal of Democracy*, 7(1), 39-55.
- Przeworski, A., & Limongi, F. (1993). Political Regimes and Economic Growth. *The Journal of Economic Perspectives*, 7(3), 51-69.
- Quaranta, M., & Martini, S. (2016). Does the economy really matter for satisfaction with democracy? Longitudinal and cross-country evidence from the European Union. *Electoral Studies*, 42, 164-174.
- Quaranta, M., & Martini, S. (2017). Easy Come, Easy Go? Economic Performance and Satisfaction with Democracy in Southern Europe in the Last Three Decades. *Social Indicators Research*, 131(2), 659-680. doi:10.1007/s11205-016-1270-0
- Remmer, K. L. (2012). The Rise of Leftist-Populist Governance in Latin America: The Roots of Electoral Change. *Comparative Political Studies*, 45(8), 947-972.
- Schwab, K., & Sala-i-Martin, X. (2015). *The Global Competitiveness Report 2014–2015, Full Data Edition*. Retrieved from Geneva:
- Sousa, L. d., Magalhães, P. C., & Amaral, L. (2014). Sovereign Debt and Governance Failures. *American Behavioral Scientist*, 58(12), 1517-1541. doi:doi:10.1177/0002764214534666
- Teorell, J., Dahlberg, S., Holmberg, S., Rothstein, B., Khomenko, A., & Svensson, R. (2017). *The Quality of Government Standard Dataset, version Jan17*.
- UNU-WIDER. (2017). *World Income Inequality Database (WIID) Version 3.4*.
- VP. (2000-2013). *Voice of the People Series Surveys*.
- Wagner, A. F., Schneider, F., & Halla, M. (2009). The quality of institutions and satisfaction with democracy in Western Europe - A panel analysis. *European Journal of Political Economy*, 25(1), 30-41.

- Waldron-Moore, P. (1999). Eastern Europe at the Crossroads of Democratic Transition. *Comparative Political Studies*, 32(1), 32-62. doi:doi:10.1177/0010414099032001002
- Wells, J. M., & Kriekhaus, J. (2006). Does National Context Influence Democratic Satisfaction? A Multi-Level Analysis. *Political Research Quarterly*, 59(4), 569-578.
- Wig, T., Hegre, H., & Regan, P. M. (2015). Updated data on institutions and elections 1960–2012: presenting the IAEP dataset version 2.0. *Research & Politics*, 2(2). doi:10.1177/2053168015579120
- Wilkin, S., Haller, B., & Norpoth, H. (1997). From Argentina to Zambia: a world-wide test of economic voting. *Electoral Studies*, 16(3), 301-316.
- World Bank. (2017). *World Development Indicators*.
- WVS. (1981-2014). *World Values Survey, Waves 1-6*.