Meltzer and Richard (1981)

- Which factors affect redistribution of income?

- According to **Meltzer and Richard (1981)** income inequality.

- **IDEA:** Agents differ in their income.
- The redistributive system consists of
  - a Proportional Income Tax (t)
  - a Lump-sum Transfer (T)

→Redistribution from the Rich to the Poor!

Meltzer and Richard (1981)

- We consider a society consisting of an **odd number** of n citizens.
- Agents differ in their income $\boldsymbol{y_i}$.
- Ordering people from poorest to richest, we think of the median person as the person with the **median income** ($\boldsymbol{y_M}$).
- $\overline{y} = \frac{\sum_{i=1}^{n} y_i}{n}$ denotes **average income** in this economy.
- Agents: i has utility $U_i = c_i + T$ (1)

where c_i is consumption and T a lump-sum transfer.

Meltzer and Richard (1981)

- Budget constraint : $c_i = (1-\tau)y_i$ (2)

Where Y_i is income and$\tau(\geq 0)$the tax rate

- Agents choose their consumption taking as given (i) the budget constraint, (ii) policy choices T and τ.

- We assume that it is costly to raise taxes

$$C(\tau) = \tau^2 \quad (3)$$

The general deadweight cost of taxation related to that tax rate.

$$C(\tau)n\overline{y} = \tau^2 n\overline{y} \quad (4)$$

(i) Costs of administering taxes, **(ii)** Distortions in the investment and labor supply.

Meltzer and Richard (1981)

- From this it follows that the government budget constraint is as follows:

$$\mathrm{T} = \frac{\sum_{i=1}^{n} \tau y_i - C(\tau) n \overline{y}}{n} \Leftrightarrow$$

$$T = \tau \overline{y} - \tau^2 \overline{y} \qquad (5)$$

Indirect utility function (IUF) : (2)+ (5) →(1)

$$W_i(\tau) = (1-\tau) y_i + (\tau(1-\tau)) \overline{y} \qquad (6)$$

F.O.C

$$\frac{dW_i(\tau)}{d\tau} = 0 \Leftrightarrow$$

$$\boldsymbol{\tau^* = \frac{\overline{y} - y_i}{2\overline{y}}} \quad \textbf{(7)}$$

Implying that "poorer (reps. richer) individuals prefer higher (resp. lower) taxation!

Meltzer and Richard (1981)

- Although the lump-sum transfer is common to all individuals, given that the tax rate is proportional to income, poorer individuals receive a higher net transfer! → **Fiscal redistribution!**

- **How can we aggregate these conflicting preferences?**

- If all citizens have single peaked preferences, the outcome is the tax rate preferred by the median voter. (**Direct or representative Democracy!**)

S.O.C

$\frac{d^2 W_i(\tau)}{dt^2} = -2\overline{y} < 0$ **(Single Peaked Preferences!)**

Meltzer and Richard (1981)

- **The median voter applies!** $\tau_m^* = \frac{\bar{y} - y_m}{2\bar{y}}$ (8)
- If we replace (8) on (5):

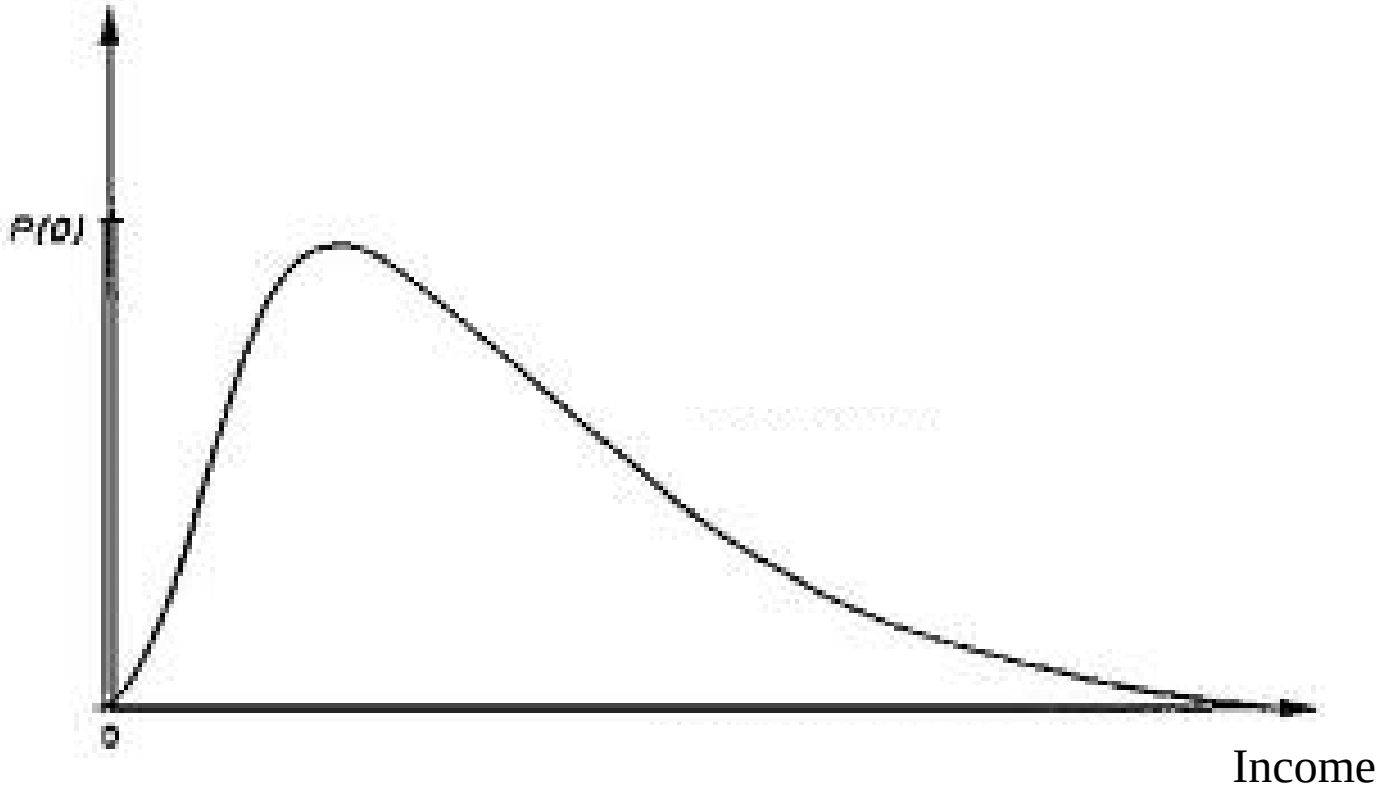
$$T_m^* = \frac{\bar{y}^2 - y_m^2}{4\bar{y}} \quad (9)$$

- We can conclude that the tax rate and the lump-sum transfer depend on the **distance** between the income of the **median voter and the average income**.

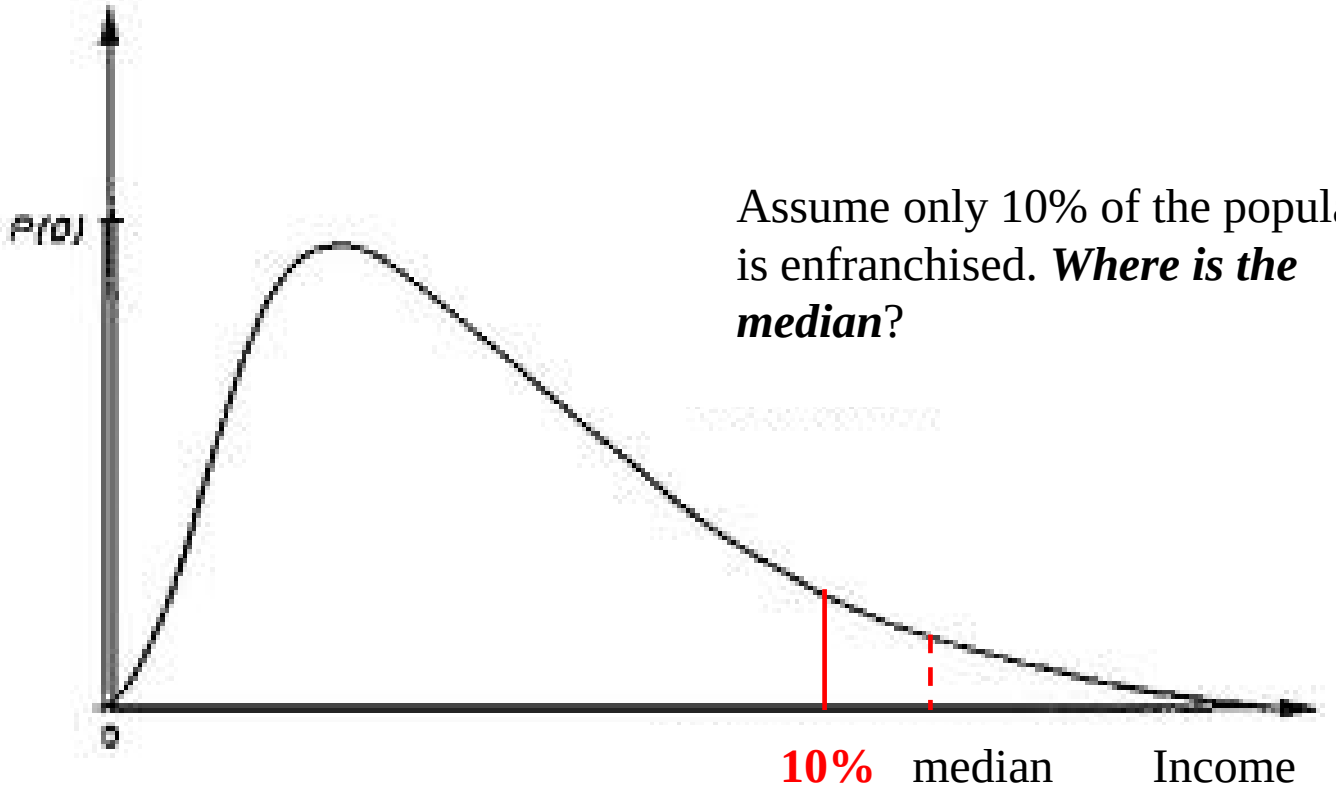
Meltzer and Richard (1981) predictions:

1. **Democracies redistribute more!**
2. **The higher the distance (the poorer the median voter) the higher the redistribution of income!**

Meltzer and Richard (1981): 1.Democracies vs Dictatorships

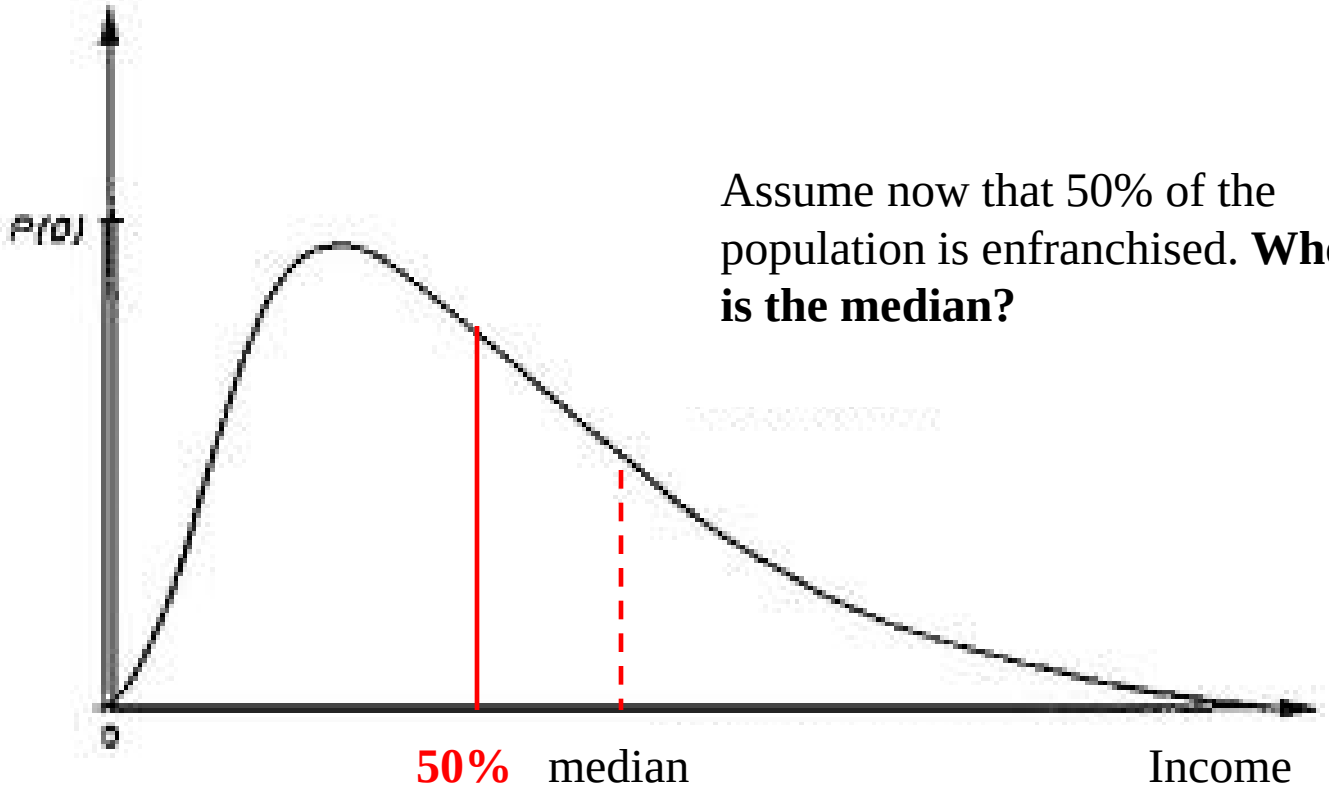


Meltzer and Richard (1981): 1. Democracies vs Dictatorships



Assume only 10% of the population is enfranchised. ***Where is the median***?

Meltzer and Richard (1981): 1. Democracies vs Dictatorships



Assume now that 50% of the population is enfranchised. **Where is the median?**

As the percentage of the population that is enfranchised increases the median voter becomes poorer!

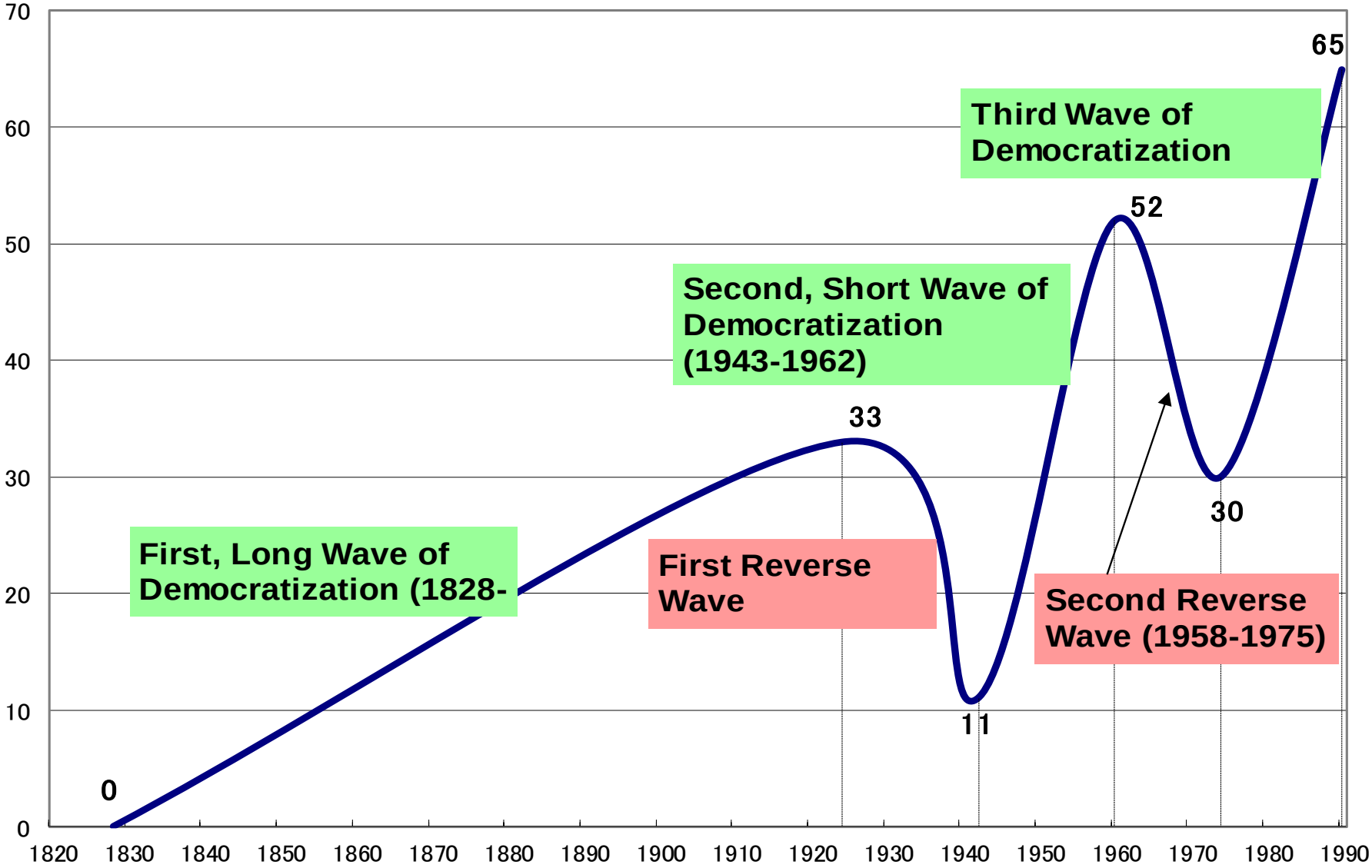
We expect Democracies to redistribute more than Dictatorships do!

Three Waves of Democratization

- In his book ***The Third Wave***, Samuel Huntington argues that there have been three waves of democratization in modern history.

Samuel P. Huntington

The Three Waves: When?



Huntington's Definition of Democracy

- Huntington offers **two definitions** of democracy that apply to different periods of time.

- **Definition 1** (Applies to 19th Century)
  - 50% of adult males can vote.
  - There is an executive that either maintains majority support in an elected parliament, or is chosen in periodic popular elections.

- **Definition 2** (Applies to 20th Century)
  - Virtually all adults can vote.
  - Leaders are selected through fair, honest and periodic elections.

The **First** Wave: Why?

- Occurred mostly in Northern Europe and white settler countries. The causes are:

1. Economic Factors:
   - First countries to experience economic development, industrialization and urbanization.
   - Emergence of middle class.

2. World War One
   - Democratic countries defeated two large authoritarian empires, the Austro-Hungarian and Ottoman Empires.

3. Historical events and intellectual developments (French Revolution etc) (see **Aidt and Jensen (2014)**)

Aidt, T., & P., Jensen, 2014. Workers of the world, unite! Franchise extensions and the threat of revolution in Europe, 1820–1938, European Economic Review, Elsevier, vol. 72(C), pages 52-75.

Table 1
Timing of suffrage reforms and revolutionary events in europe, 1820–1938.

Country[a]	Franchise extensions	Revolutionary events	Franchise contractions
Panel A			
United Kingdom (1820)	1832, 1867, 1884, 1918		None
Austria (1867, 1934)	1867, 1896, 1907	**1848–49**	1934
Italy (1861, 1924)	1861, 1882, 1912, **1919**	**1820**, **1848-49**	1924
Norway (1820)	(1814), 1884, 1897, 1919		None
The Netherlands (1830)	(1815), 1848, 1887, 1894, 1917		None
Sweden (1820)	1866, 1907, 1919		None
France (1820)	1820, 1830, **1848**, (1870)	**1830**, **1848**, **1870-71**	1852–1869
Germany (1871, 1933)	1871, 1919	**1848-49**	1933
Finland (1820)	1869, 1906		None
Belgium (1830)	1831, 1848, 1893, 1919	**1830–33**	None
Switzerland (1848)	1848		None
Denmark (1820)	1849, 1915		1866, 1875–1901
Panel B			
Luxembourg (1820)	1841, 1848, **1857**, 1893, 1902, 1919		1860
Iceland (1874)	1874, 1908, 1916, 1934		None
Spain (1820, 1936)	(1812), **1820**, 1834, **1837**, 1865, **1869**, 1888, 1890, **1931**	**1820–23**, 1827, 1836, 1840, 1842, 1854–56, 1866, 1868, 1873-74, 1890, 1909, 1933, 1934	1823-33, 1845 1876, 1923 1936, 1938
Portugal (1820, 1926)	**1822**, 1838, 1852, 1878, 1911	**1820**, 1910, **1915**, 1919, 1927	1826, 1895, 1926
Serbia (1820)	1868, **1888**, 1903, 1920	1861	1893, 1894, 1901, 1931
Greece (1822)	1822, 1844	1843, 1866–68, 1935, 1938	None
Romania (1856, 1938)	1866, 1923		1938
Poland (1918)	**1921**	1830-31, 1863-64	1926, 1935
Hungary (1867, 1936)	1867	**1848-49**, **1918-19**	1920, 1936
Russia (1820, 1917)	**1906**	**1905**, **1917**	1907, 1917
Panel C			
Ireland (never)		**1916**	
Other part of Balkans (never)		1826, 1885, 1888, 1907	

The **Second** Wave: Why?

- The second wave is largely related to WW2.

1. Imposition of Democracy.
   - Allied powers imposed democracy on certain defeated countries, such as Japan and Germany.
2. *Snowballing* (demonstration) effect.
   - Some countries independently chose to be democratic.
3. Decolonization.
   - Many former colonies became independent and democratic.

The **Third** Wave: Why?

- Some 30 countries became democratic.

1. Legitimacy.
2. Economic Growth.
3. Fall of the Soviet Union
4. *Snowball* (or demonstration effect).
   - Early third wave transitions received great media attention, which later stimulated transitions in other countries.

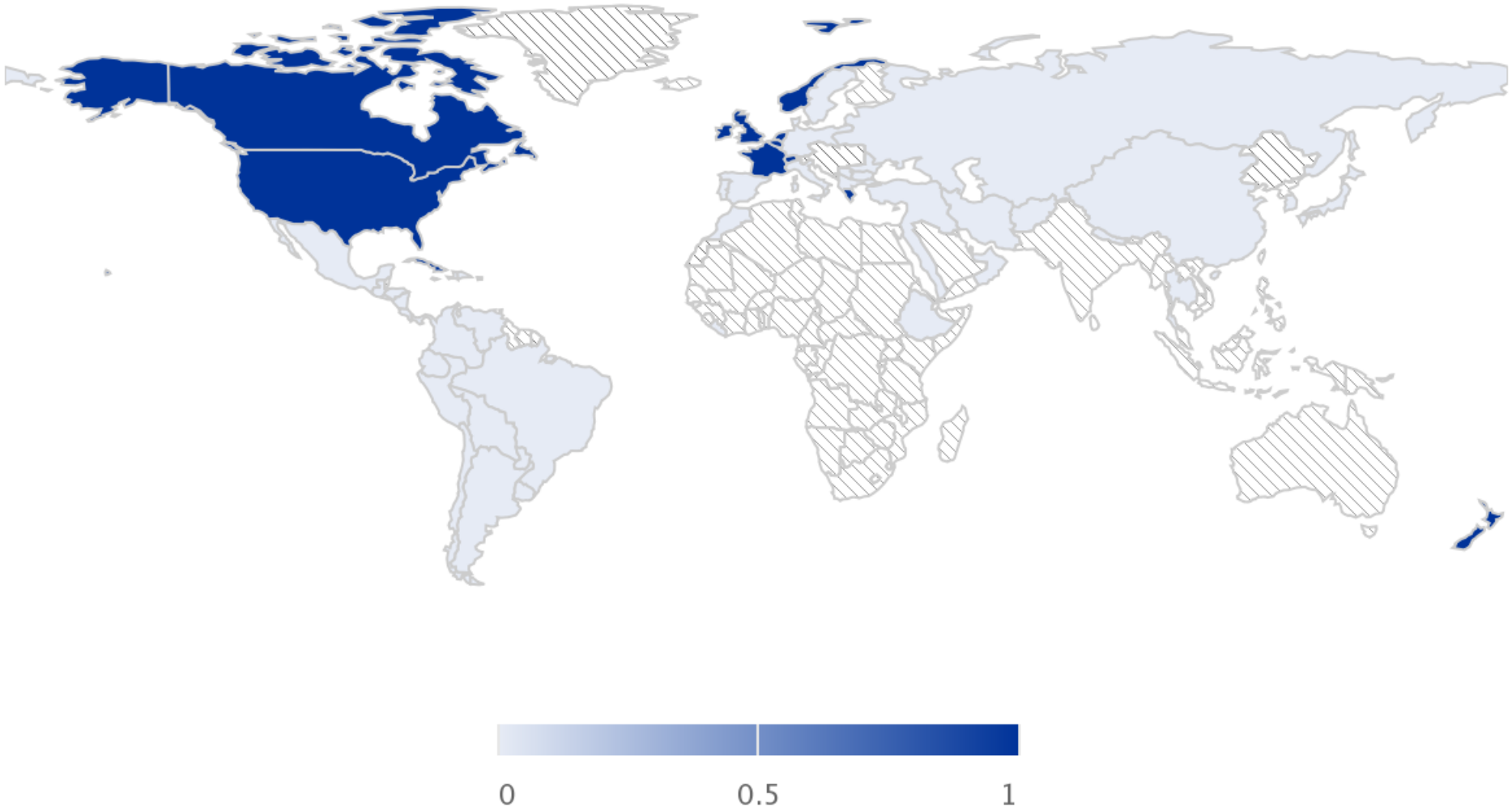
Ways to "measure" democracy (1)

The simplest way to measure is through a dummy variable that gets the value 1 when a country has a democracy, and 0 in another case.

Boix-Miller-Rosato (BMR) provides data on the type of political regime for 219 different countries from 1800 to 2010.

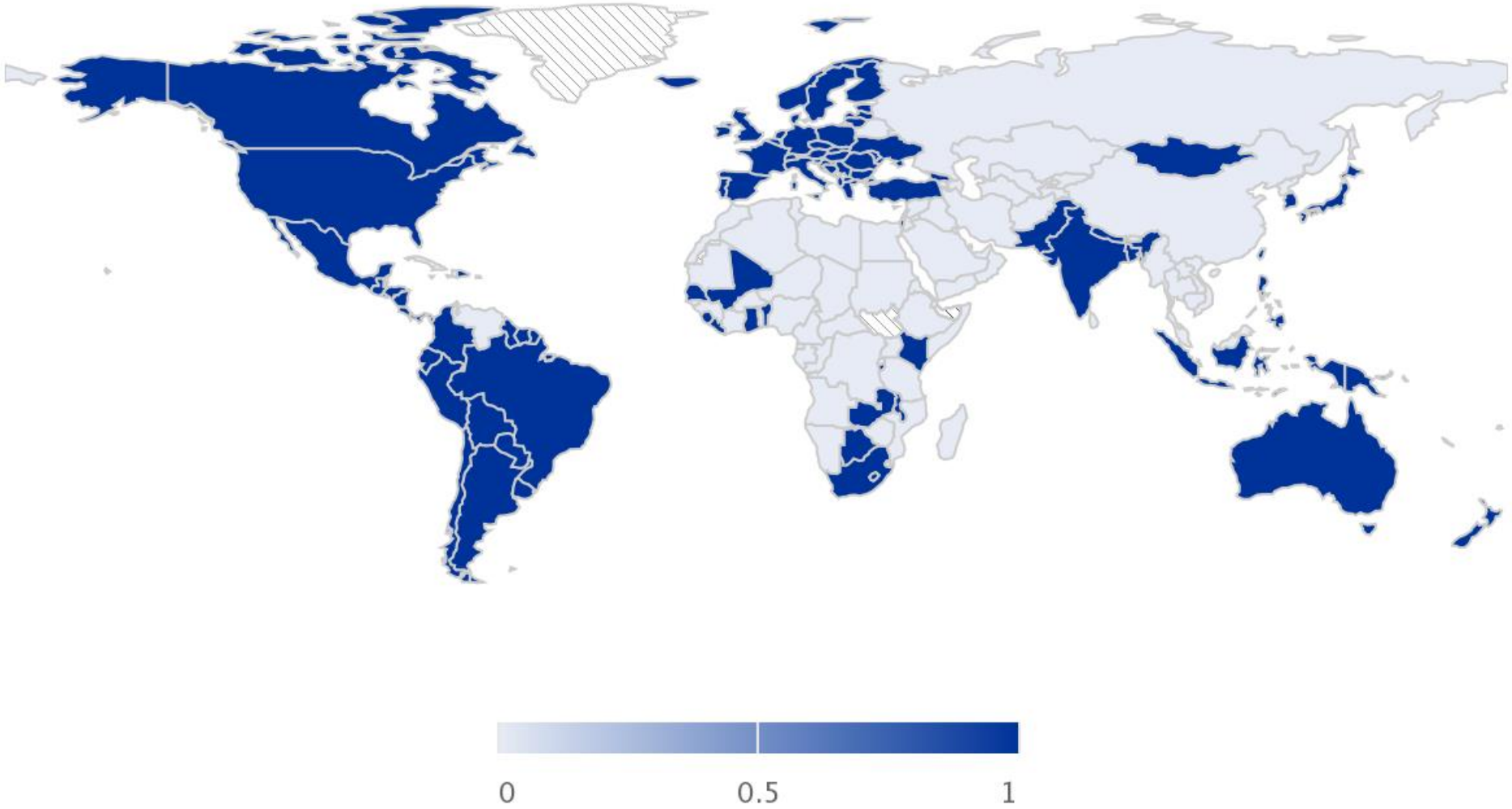
Criteria
(i) popular elections of the executive and legislative branches;
ii) several parties competing in elections
iii) non-established advantage of the ruling party
(iv)at least half of the male electorate is entitled to vote;

Democracy (BMR) (1900)



Highcharts.com | V-Dem data version 9.0 |

Democracy (BMR) (2010)



Ways of "measuring" democracy (1) - Greece

The Constitution of 1864 established universal male suffrage and was a pioneering development at European and world level.

The handwritten ballot paper was abolished because most Greeks were illiterate and therefore easily manipulated by party leaders.

The pellet (small lead bolus) was introduced as a means of voting, following a suggestion by the Ionian MPs.

There were as many ballot boxes at each polling station as there were candidates.

The voter would take a lead pellet from the pellet, put his hand into the hole in the pipe and drop the pellet into the partition corresponding to the "yes" or "no".

Ballot box after the new Constitution

BMR categorization of Greece 1855-1875

GREECE	1855	0
GREECE	1856	0
GREECE	1857	0
GREECE	1858	0
GREECE	1859	0
GREECE	1860	0
GREECE	1861	0
GREECE	1862	0
GREECE	1863	0
GREECE	1864	1
GREECE	1865	1
GREECE	1866	1
GREECE	1867	1
GREECE	1868	1
GREECE	1869	1
GREECE	1870	1
GREECE	1871	1
GREECE	1872	1
GREECE	1873	1
GREECE	1874	1
GREECE	1875	1

Ways to "measure" democracy (2): Polity Score

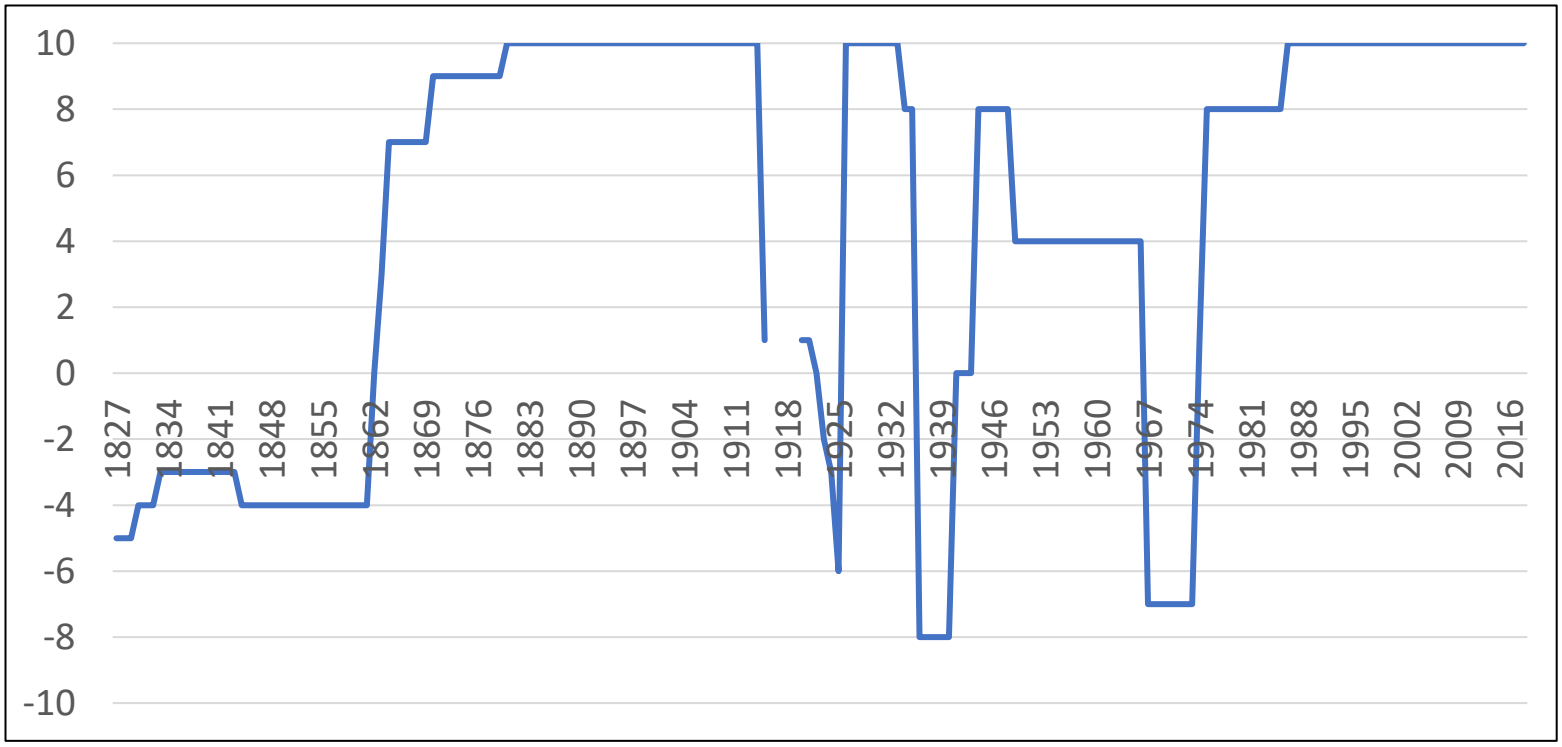
A more complex way of classifying political status is offered by the Polity Project.

The Polity Project takes values from -10 (hereditary monarchy) to +10 (unified republic).

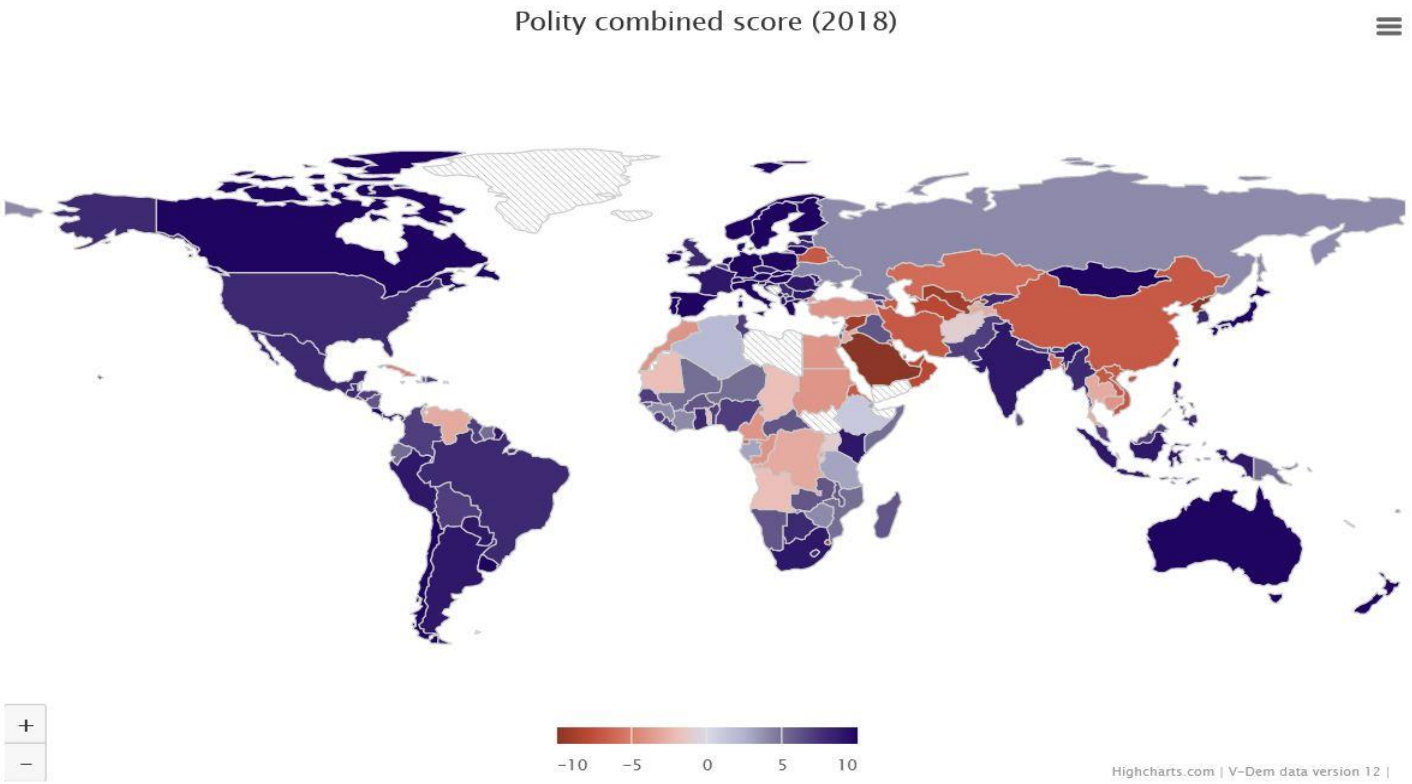
The Polity Project can also be transformed into regime categories in a proposed three-part categorization of "autocracies" (-10 to -6), (Bahrain, North Korea), "anocracies" (-5 to +5) (Cambodia, Jordan) and "democracies" (+6 to +10).

Methodology:
http://www.systemicpeace.org/inscr/p5manualv2018.pdf

Ways to "measure" democracy (2): Polity Score - Greece



Τρόποι “μέτρησης” της δημοκρατίας (2): Polity Score



Ways of "measuring" democracy (3): % of voters

A 3rd measure of democracy is the ratio of the population entitled to vote to the adult inhabitants of the country.

There are many examples where the right to vote was gradually given to the population – (usually) on the basis of economic criteria (income, acres of property).

The best example is Britain, which made five reforms, first giving voting rights to higher-income adult men, and then women:
Reform act 1832: 5.8%
Reform act 1867: 14.5%
Reform act 1884: 29.3%
Reform act 1910: 76.8%
Reform act 1928: 100%

	A	B	C
1	Country	Year	Democracy(=1)
8	United Kingdom	1880	0
9	United Kingdom	1881	0
10	United Kingdom	1882	0
11	United Kingdom	1883	0
12	United Kingdom	1884	0
13	United Kingdom	1885	1
14	United Kingdom	1886	1
15	United Kingdom	1887	1
16	United Kingdom	1888	1
17	United Kingdom	1889	1
18	United Kingdom	1890	1

The Representation of the People Act 1884 and the **Redistribution Act** of the following year extended the voting Franchise in Britain.

All women and 40% of adult males were still without the vote at the time!

Ways to "measure" democracy: Other popular sources

Varieties of Democracy (V-Dem) by the V-Dem project

Lexical Index of Electoral Democracy (LIED)

Freedom House's (FH) Freedom in the World

Bertelsmann Transformation Index (BTI) by the Bertelsmann Foundation

Economist Intelligence Unit's (EIU) Democracy Index

Measuring government intervention

- Previous literature have used mainly Fiscal variables to measure redistribution of income:

  - **Fiscal variables**: tax revenues (% of GDP), social benefits/transfers (% of GDP)

- A transfer payment is paid out by government to people who have been determined to be eligible to receive the payment.

- Payments can be in cash or in-kind transfers.
  - **Cash payments** for: sickness and invalidity benefits; unemployment benefits; pensions; etc.
  - **Social transfers in kind** reflect payments for individual goods and services such as education, health and housing, provided by government.

Measuring government intervention

- Sources for fiscal variables:

➢ *Historical Data:*

- **Flora, P., with Alber, J., Eichenberg, R., Kohl, J., Kraus, F., Pfenning,W., & Seebohm, K. (1983)**. *State, economy and society 1815-1975, Vol. I*. Frankfurt, Germany: Campus Verlag.
- **Mitchell, B. R. (2003).** *International historical statistics: 1750-2000*. Basingstoke: Palgrave Macmillan.

➢ *Modern Data* (1960-)

OECD.stat → National Accounts > National Accounts at a Glance > General Government

World Bank Development Indicators : Category→ Public Sector

Measuring income inequality

- Previous literature have used mainly **three variables** to measure the distance between the mean and the median income:

  - **1. The Gini coefficient**

  - **2. Income share held by third 20%** : Location of the middle class

  - **3. The median income / mean income**

Measuring income inequality

- Sources for Gini coefficients:

The Standardized World Income Inequality Database (SWIID) (v7) > variable: gini_market

OECD.stats > Social Protection and Well-being > Income Distribution and Poverty> variable: gini_market

- Sources for the location of the middle class:

World Development Indicators > variable: Market Income share held by third quintile

LIS Cross-National Data Center in Luxembourg > variable: Market income share held by third quintile(access is required)

- The mean market income / median market income

LIS Cross-National Data Center in Luxembourg > mean and median market income (access is required)

Democratisation and Fiscal Policy: Empirical Evidence

- **Acemoglu et al. (2015)** estimate (among others!) the following equation for 128 countries over the period 1960-2010.

$$z_{it} = \rho z_{it-1} + \gamma d_{it-1} + \mathbf{x}'_{it-1}\beta + \mu_t + \psi_i + u_{it},$$

Dependent variable: $\mathbf{Z_{it}}$ →Tax revenues (% of GDP)

Main Independent variable: $\mathbf{d_{it-1}}$ → democracy 5 years ago.

$\mathbf{Z_{it-1}}$: Lagged dependent variable

$\boldsymbol{\mu_t}$ ***and*** $\boldsymbol{\psi_i}$:time fixed effects and country fixed effects, respectively.

$\mathbf{x_{it-1}}$: other determinants of tax revenues (e.g., war and education) 5 years ago

$\mathbf{u_{it}}$: the error term.

Table 21.2 Effects of democratization on the log of tax revenue as a percentage of GDP

			GMM			Assuming AR(1) coefficient				
						$\rho = 0$	$\rho = 0.25$	$\rho = 0.5$	$\rho = 0.75$	$\rho = 1$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Democracy lagged	15.00***	11.71***	11.27	18.68**	14.63**	15.00***	11.92***	8.84***	5.77**	2.69
	(4.33)	(3.38)	(7.23)	(8.78)	(5.98)	(4.33)	(3.27)	(2.55)	(2.48)	(3.11)
Dep. Var. lagged		0.27***	0.27***	0.29***	0.33***					
		(0.06)	(0.10)	(0.07)	(0.08)					
Observations	944	944	816	816	816	944	944	944	944	944
Countries	128	128	125	125	125	128	128	128	128	128
Number of moments			81	61	61					
Hansen *p*-value			0.12	0.05	0.06					
AR2 *p*-value			0.92	0.83	0.78					
Democracy changes in the sample	92	92	82	82	82	92	92	92	92	92
Long-run effect of democracy	15.00	15.97	15.49	26.35	21.97	15.00	15.89	17.68	23.06	.
p-Value for the long-run effect	0.00	0.00	0.11	0.03	0.01	0.00	0.00	0.00	0.02	.

Table 21.6 Effects of democratization on inequality

			GMM			Assuming AR(1) coefficient				
						$\rho = 0$	$\rho = 0.25$	$\rho = 0.5$	$\rho = 0.75$	$\rho = 1$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: Gini coefficient, net income										
Democracy lagged	0.62	−0.74	−2.01	−2.60	−1.60	−0.42	−0.67	−0.92	−1.17	−1.42
	(0.78)	(0.88)	(1.59)	(1.63)	(1.51)	(0.93)	(0.89)	(0.89)	(0.93)	(1.00)
Dep. Var. lagged		0.32***	0.35***	0.39***	0.32***					
		(0.07)	(0.10)	(0.12)	(0.12)					
Observations	657	537	420	420	424	537	537	537	537	537
Countries	127	113	100	100	100	113	113	113	113	113
Number of moments			81	61	61					
Hansen p-value			0.60	0.69	0.30					
AR2 p-value			0.02	0.03	0.01					
Democracy changes	65	47	31	31	31	47	47	47	47	47
Long-run effect	0.62	−1.10	−3.12	−4.28	−2.36	−0.42	−0.90	−1.84	−4.67	.
p-Value	0.43	0.40	0.21	0.12	0.30	0.65	0.45	0.31	0.21	.
Dependent variable: Gini coefficient, gross income										
Democracy lagged	−1.22	−1.50	−1.45	−1.88	−1.22	−1.51	−1.50	−1.50*	−1.49*	−1.49
	(0.99)	(0.90)	(1.44)	(1.59)	(1.27)	(1.15)	(1.00)	(0.90)	(0.87)	(0.92)
Dep. Var. lagged		0.50***	0.64***	0.64***	0.76***					
		(0.06)	(0.11)	(0.11)	(0.11)					
Observations	657	537	420	420	424	537	537	537	537	537
Countries	127	113	100	100	100	113	113	113	113	113
Number of moments			81	61	61					
Hansen p-value			0.54	0.29	0.37					
AR2 p-value			0.59	0.57	0.48					
Democracy changes	65	47	31	31	31	47	47	47	47	47
Long-run effect	−1.22	−2.98	−3.99	−5.26	−5.15	−1.51	−2.00	−3.00	−5.97	.
p-Value	0.22	0.11	0.36	0.30	0.42	0.19	0.14	0.10	0.09	.

Note: OLS estimates (Columns 1–2) include a full set of country and year fixed effects. Arellano and Bond's GMM estimators of the dynamic panel model (Columns 3–4) remove country fixed effects by taking first differences of the data, or by taking forward orthogonal differences (Column 5) and then constructing moment conditions using predetermined lags of the dependent variable and democracy. Columns 4 and 5 use up to the fifth lag of predetermined variables to create moments, restricting the number of moments used. Columns 6–10 impose different values for the autocorrelation coefficient of the dependent variable, and estimates the effect of democracy including a full set of country and year fixed effects. All models control for lagged GDP per capita but this coefficient is not reported to save space. Robust standard errors, adjusted for clustering at the country level, are in parentheses. ***: significant at 1%; **: significant at 5%; *: significant at 10%. We do not report long-run effects and their p-values in Column 10 because they are not defined for $\rho = 1$.

Puzzling result: Although Democratisation increases Tax revenues (% GDP), THE EFFECT OF DEMOCRATISATION ON INEQUALITY IS STATISTICALLY INSIGNIFICANT!

Possible explanations:

- Lower quality of inequality data that do not reveal the actual effect.

- Democracy may be bringing new opportunities and economic change, which may increase inequality.

- Democracies and dictatorships actually follow different patterns of government spending; see **P. Kammas and V. Sarantides (2019).** Do dictatorships redistribute more?, Journal of Comparative Economics, forthcoming

Readings

Acemoglu D., & Naidu S. & Restrepo P. & J. Robinson, (2015). "Democracy, Redistribution and Inequality," Handbook of Income Distribution, Chapter 21.

Acemoglu, D. & Robinson, J. (2005). Economic Origins of Dictatorship and Democracy, Cambridge: Cambridge University Press. Chapter 4.4.1