

# Political Economy

131 Undergraduate Public Economics  
Emmanuel Saez  
UC Berkeley

## Political Economy

**Political Economy** is the positive analysis of government: why do governments do what they do?

In democracies, citizens vote to elect politicians to run the government

In principle, government decisions should reflect the will of citizens

Even non-democratic rulers are in part subject to people's preferences

## MAJORITY VOTING: WHEN IT WORKS

**Majority voting:** Mechanism used to aggregate individual votes into a social decision: individual policy options are put to a vote and the option that receives the majority of votes is chosen

Majority voting can produce a consistent aggregation of individual preferences only if preferences are restricted to take a certain form

Example: funding for local public schools using property taxes could be chosen as high (H), medium (M), or low (L)

## 9.2

## Majority Voting: When It Works

- There are three types of voters in a town: *parents*, *elders*, and *young couples without children*.
- They have different preferences over the level of school spending (high, medium, or low).

	<b>Parents (33.3%)</b>	<b>Elders (33.3%)</b>	<b>Young Couples (33.3%)</b>
First choice	<i>H</i>	<i>L</i>	<i>M</i>
Second choice	<i>M</i>	<i>M</i>	<i>L</i>
Third choice	<i>L</i>	<i>H</i>	<i>H</i>

## **MAJORITY VOTING: WHEN IT WORKS**

The town could proceed as follows:

- Vote on funding level H versus funding level L: L wins H
- Vote on funding level H versus funding level M: M wins H
- Vote on funding level L versus funding level M: M wins L

M has beaten both H and L so M is the overall winner.

Majority voting has aggregated individual preferences to produce a preferred social outcome: medium school spending and taxes.

## 9.2

## Majority Voting: When It Doesn't Work

- **Cycling:** When majority voting does not deliver a consistent aggregation of individual preferences.

	<b>Public school parents (33.3%)</b>	<b>Private school parents (33.3%)</b>	<b>Young Couples (33.3%)</b>
First choice	<i>H</i>	<i>L</i>	<i>M</i>
Second choice	<i>M</i>	<i>H</i>	<i>L</i>
Third choice	<i>L</i>	<i>M</i>	<i>H</i>

## **MAJORITY VOTING: WHEN IT DOES NOT WORK**

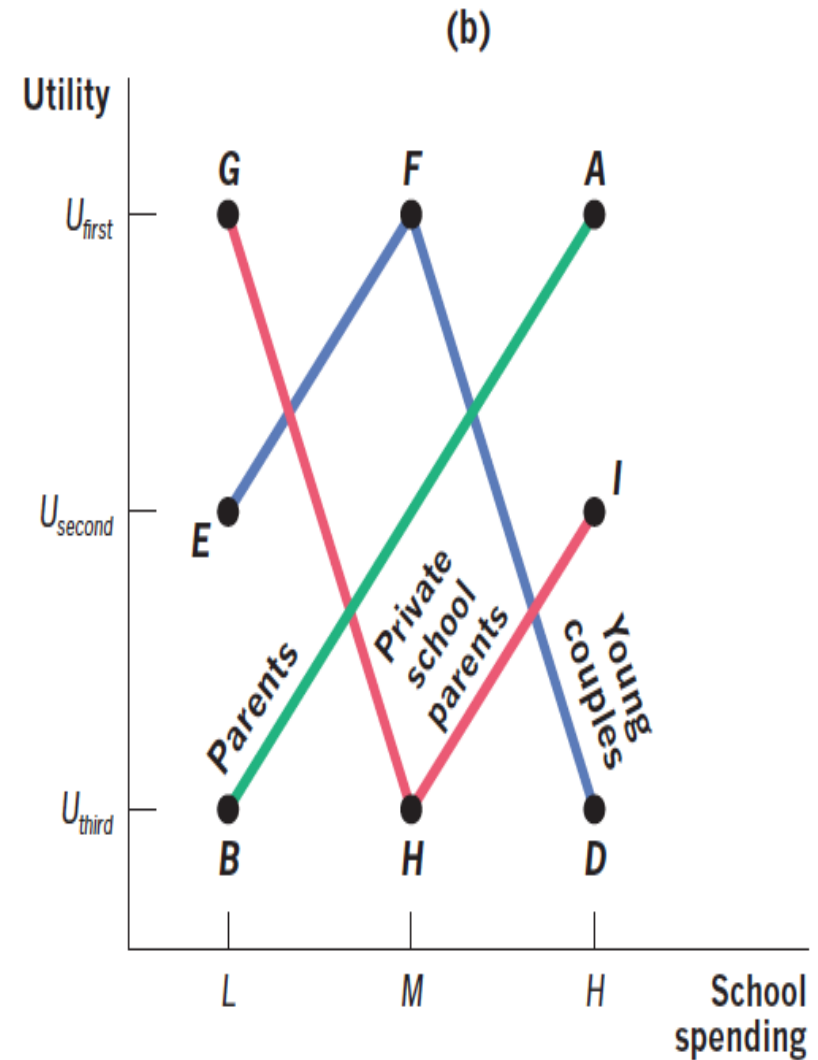
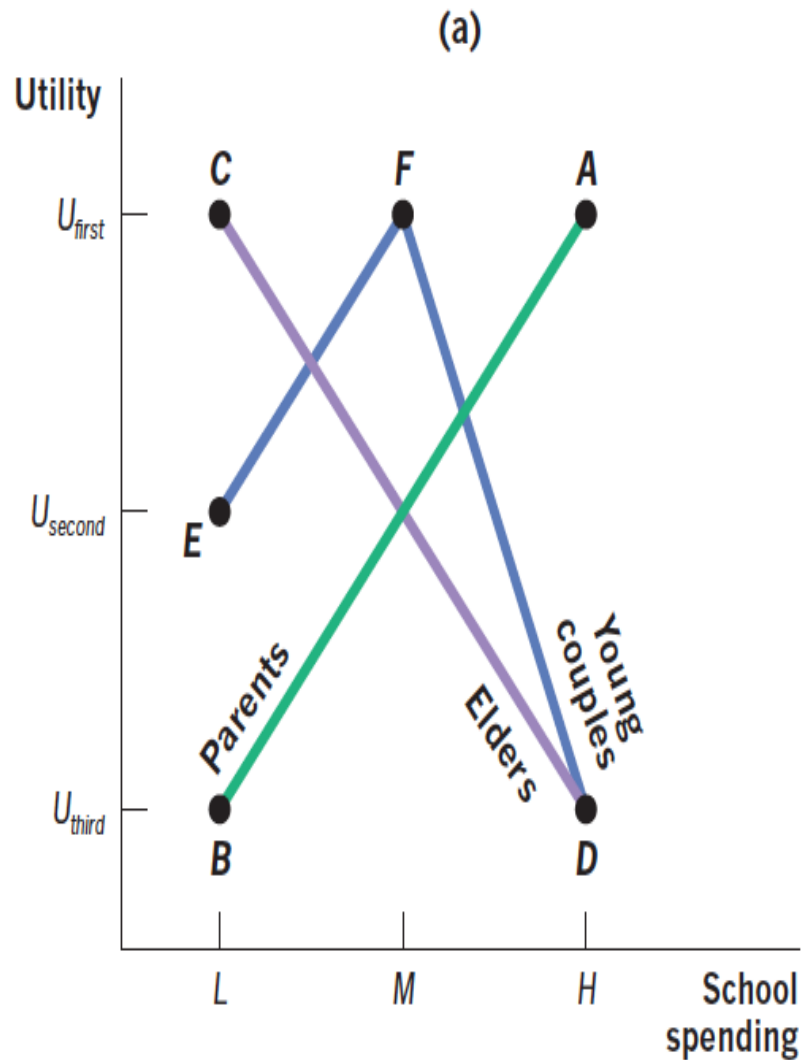
- Vote on funding level H versus funding level L: L wins H
- Vote on funding level H versus funding level M: H wins M
- Vote on funding level L versus funding level M: M wins L

Cycle with no clear winner.

Majority voting is unable to aggregate preferences in a meaningful way in that case

## 9.2

## Single-Peaked versus Non-Single-Peaked Preferences





## MEDIAN VOTER THEOREM

Consider choice along a single dimension (e.g., funding level)

**Single peaked preferences:** The preferences for funding increase and then decrease (always increasing, or always decreasing also considered single peaked). Peak is preferred funding level for the individual.

**Median voter** is the voter whose peak is at the median (half have lower peaks, half have higher peaks)

**Voting Equilibrium** (or Condorcet winner) is an outcome that wins in majority voting against any other alternative

**Median Voter Theorem:** Peak of median voter is a voting equilibrium

## PROOF OF MEDIAN VOTER THEOREM

Let  $a_1 < \dots < a_{median} < \dots < a_I$  be the peaks of individuals  $1, \dots, I$

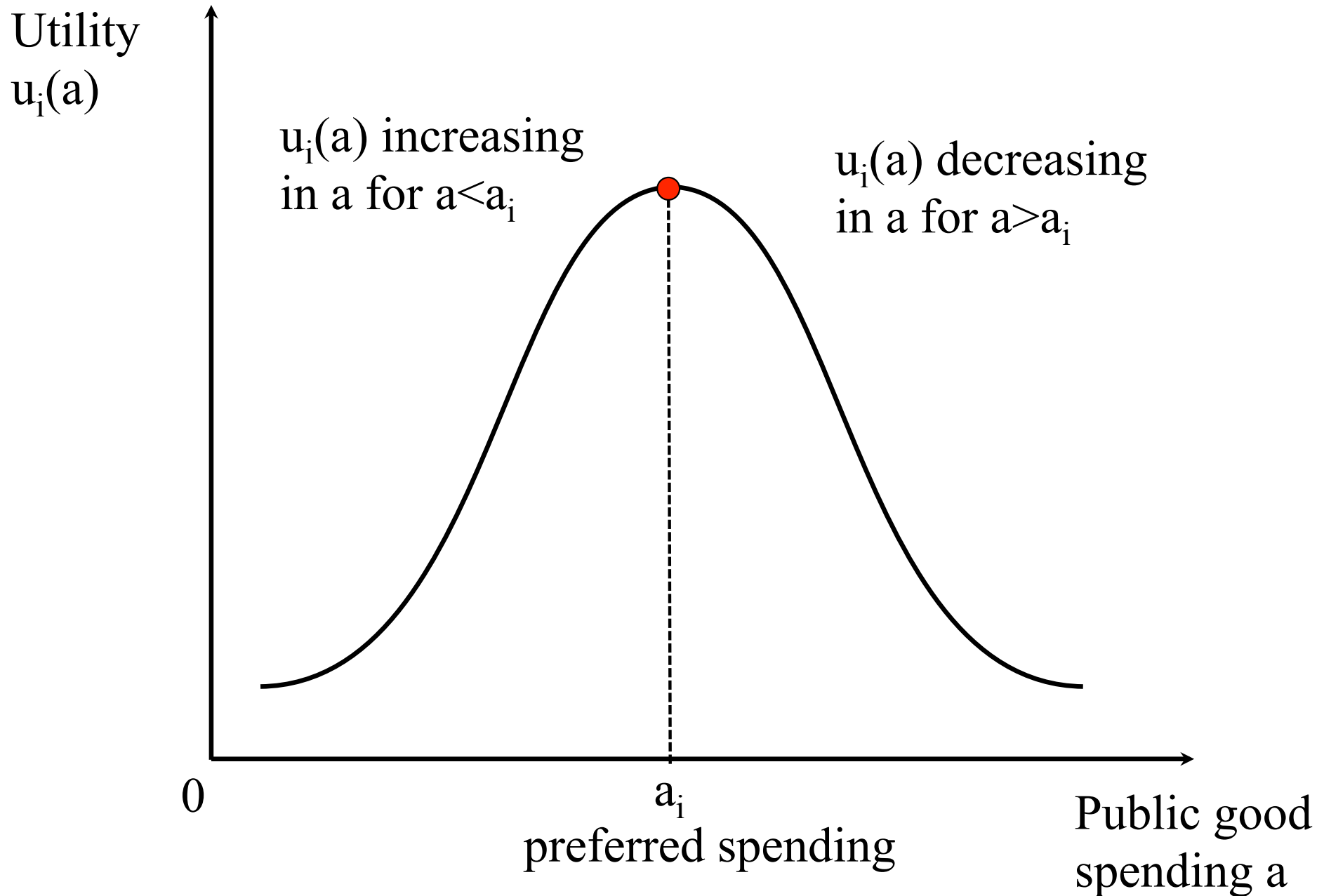
Suppose vote between  $a_{median}$  and  $a^*$  with  $a_{median} < a^*$

$a_{median}$  wins because  $i = 1, \dots, median$  all prefer  $a_{median}$  to  $a^*$   
(because they all have decreasing preferences for  $a$  beyond  $a_{median}$ )

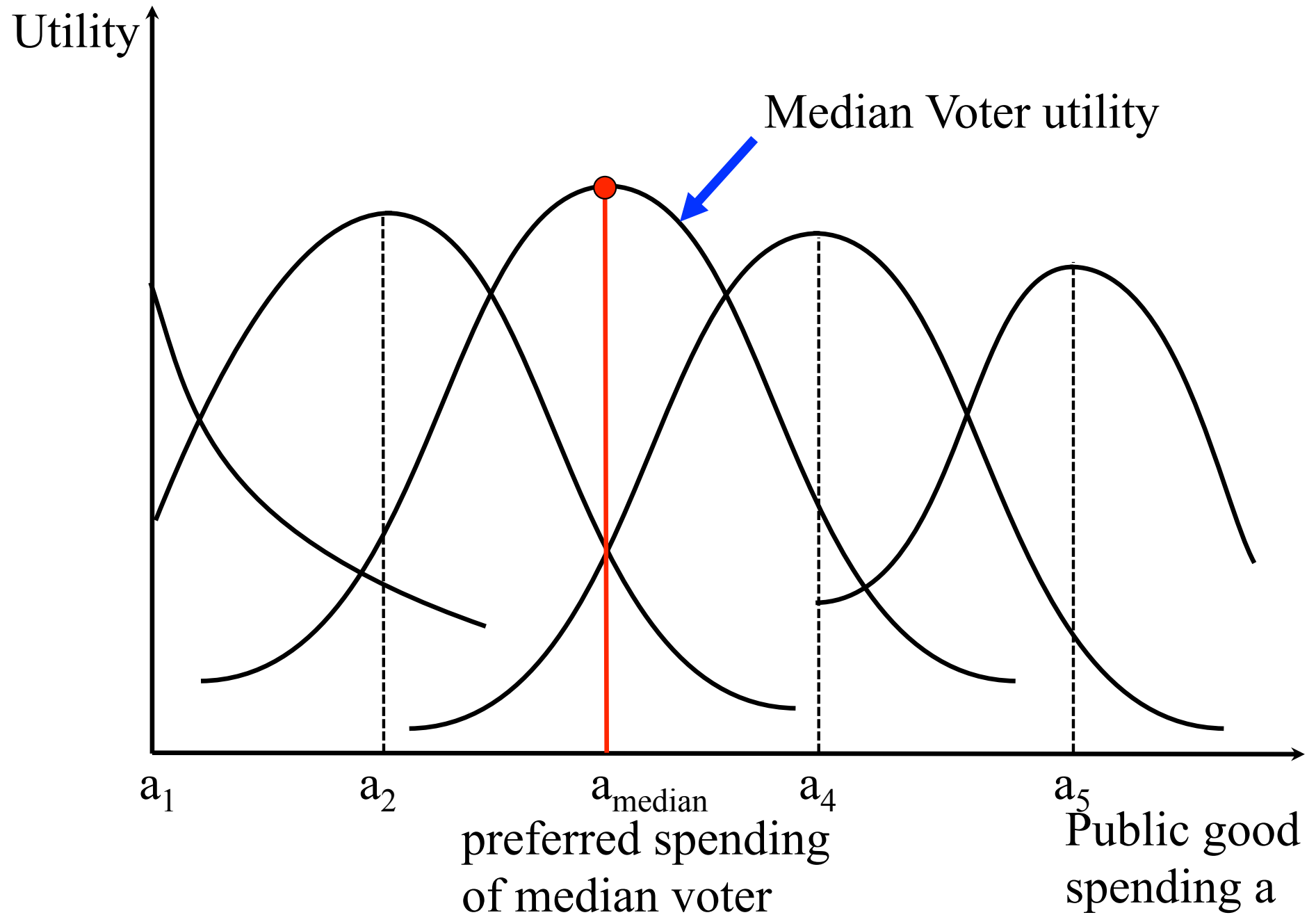
Symmetrically  $a_{median}$  wins against  $a^* < a_{median}$  because  $i = median, \dots, I$  prefer  $a_{median}$  to  $a^*$

Median voter outcome from majority voting is very useful and a hugely influential result in the political economy literature

# Single Peaked Preferences



# Median Voter Theorem



## ABSTRACT SOCIAL CHOICE PROBLEM

$n = 1, \dots, N$  possible choices society can make

$i = 1, \dots, I$  individuals have preferences  $\prec_i$  over the  $N$  choices

**Social decision rule:** It aggregates individuals preferences  $(\prec_i)_{i=1, \dots, I}$  into a social preference  $\prec_S$  over  $N$  choices that satisfies 3 key properties:

1) Pareto Dominance: if  $a \prec_i b$  for all  $i$  then  $a \prec_S b$

2) Transitivity: if  $a \prec_S b$  and  $b \prec_S c$  then  $a \prec_S c$

3) Independence of irrelevant alternatives: whether  $a \prec_S b$  or  $a \succ_S b$  depends only on how individuals rank  $a$  vs.  $b$  (and not any other alternative).

Importantly, 3) rules out “intensity of preferences effects” (focus is solely on counting fraction who prefer  $a$  to  $b$ )

## ABSTRACT SOCIAL CHOICE PROBLEM

**ARROW'S IMPOSSIBILITY THEOREM:** There is no social decision rule that converts individual preferences into a consistent aggregate decision without either

(a) restricting preferences or

(b) imposing dictatorship (i.e.  $\prec_S = \prec_i$  for some "dictator"  $i$ )

Geanakoplos (2005) provides simple proofs

This result was very influential and shows that the abstract social choice problem cannot have a general solution

Most common solutions are to:

(1) restrict preferences to single peaked preferences (median voter thm)

(2) let intensity of preferences play a role (social welfare function and Samuelson rule for efficiency)

## MEDIAN VOTER AND EFFICIENCY

Efficiency requires

$\sum$  social marginal benefits = social marginal costs

$\Rightarrow$  Public good is worth providing if  $\sum$  benefits  $>$  costs

What matters for efficiency is the **average** marginal benefit across individuals and not the **median** marginal benefit

$\Rightarrow$  Median outcome is not efficient unless Median = Average (not true in general)

Example: bridge project would serve 10 people. 6 people value bridge at \$50, 4 people value bridge at \$100. Total social value of bridge is \$700 =  $6 \cdot 50 + 4 \cdot 100$

Suppose cost is \$60 per person so total cost = \$600 =  $\$60 \cdot 10$ .

Mean net benefit is  $70 - 60 = \$10$ , median net benefit is  $50 - 60 = -\$10$

Project is socially desirable but is opposed by 6 people to 4 in majority voting  $\Rightarrow$  Median voter leads to an inefficient outcome

# ASSUMPTIONS OF THE MEDIAN VOTER MODEL

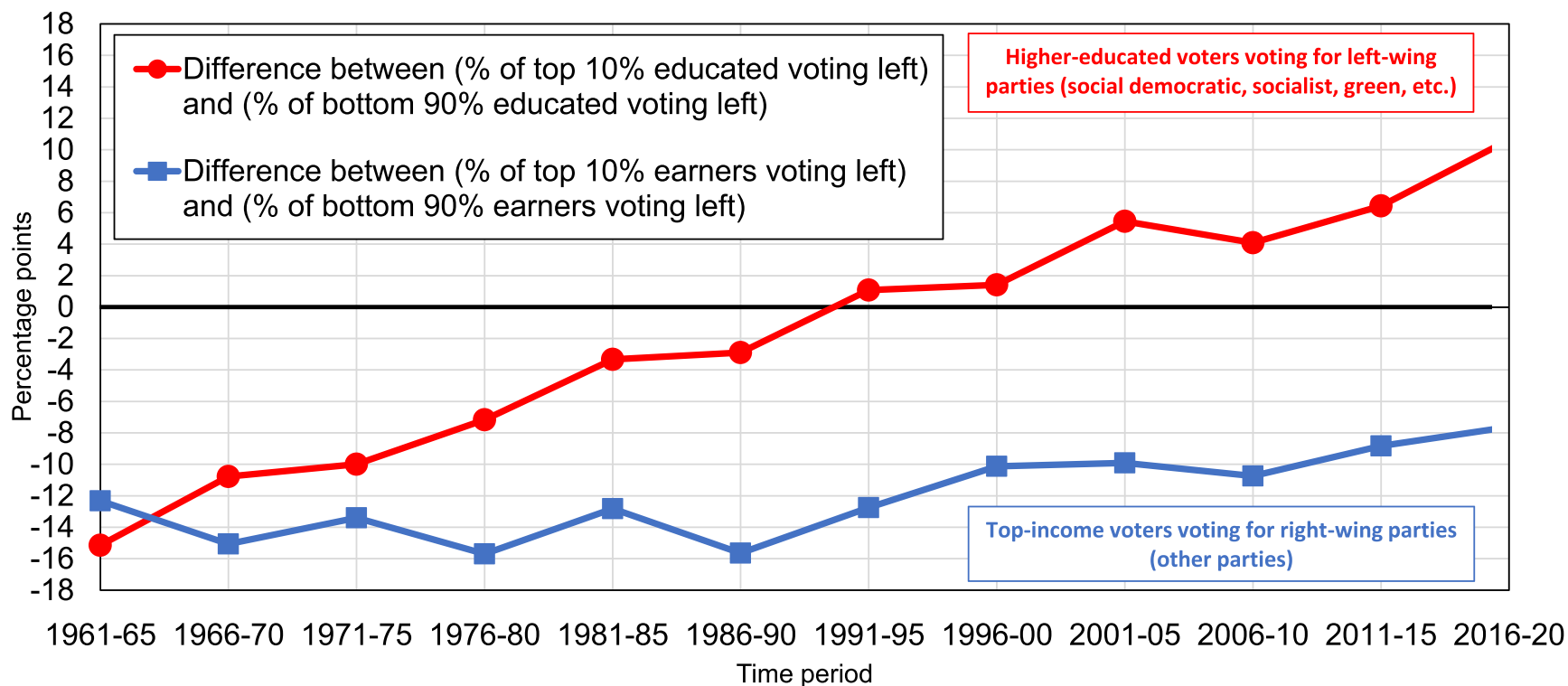
Median voter theorem makes a number of assumptions:

**1) Single-dimensional Voting:** Median voter theorem breaks down with multiple dimensions. Western Democracies aligned along single socio-econ cleavage in the 1960s, not multiple cleavages: econ vs. education with emergence of right-wing populists (Guethin, Piketty, Toledano 22)

**2) Only Two Candidates:** Median voter theorem breaks down with 3+ candidates. No stable equilibrium in the model with three or more candidates because there is always an incentive to move in response to your opponents' positions.

**3) No Selective Voting:** The median voter theory assumes that all people affected by public goods vote, but in fact, only a fraction of citizens vote in the United States. Appealing to the base (by moving away from median voter) is a way to increase turnout.





Source: Guethin, Piketty, Toledano 2022

FIGURE I

## The Disconnection of Income and Education Cleavages in Western Democracies

In the 1960s, higher-educated and high-income voters were less likely to vote for left-wing (social democratic/socialist/communist/green/other left-wing) parties than were lower-educated and low-income voters by more than 10 percentage points. The left vote has gradually become associated with higher education voters, giving rising to a complete divergence of the effects of income and education on the vote. Figures correspond to five-year averages for Australia, Britain, Canada, Denmark, France, Germany, Italy, the Netherlands, Norway, Sweden, Switzerland, and the United States. Estimates control for income/education, age, gender, religion, church attendance, rural/urban, region, race/ethnicity, employment status, and marital status (in country-years for which these variables are available). Data from World Political Cleavages and Inequality Database.

# **ASSUMPTIONS OF THE MEDIAN VOTER MODEL**

## **4) No Money**

The median voter theory ignores the role of money as a tool of influence in elections.

If taking an extreme position on a given topic maximizes fundraising, even if it does not directly maximize votes on that topic, it may serve the long-run interests of overall vote maximization by allowing the candidate to advertise more strongly.

## **5) Full Information**

The median voter model assumes perfect information along three dimensions: voter knowledge of the issues; politician knowledge of the issues; and politician knowledge of voter preferences.

All these assumptions are unrealistic.

## LOBBYING

**Lobbying:** The expending of resources by certain individuals or groups in an attempt to influence a politician

In principle, lobbying could correct inefficiencies due to median voter theorem: those who really want the bridge pay politicians who can provide transfers to those who don't want the bridge as much and get it built

However, lobbying can also lead to inefficiencies if public does not have perfect information and hence does not care to pay attention

Example: 5 people value bridge net of cost at \$100, 100 people value bridge net of cost at -\$6. Median voter does not produce the bridge (the socially desirable outcome)

However, 5 people have strong incentives to lobby and may get the project approved (if the 100 do not pay attention)

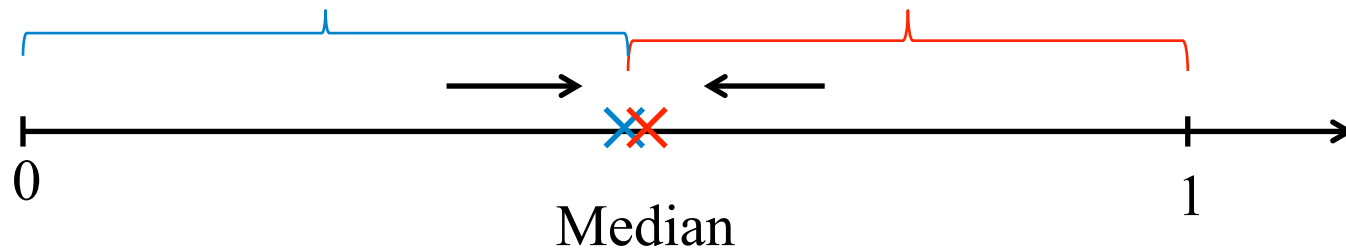
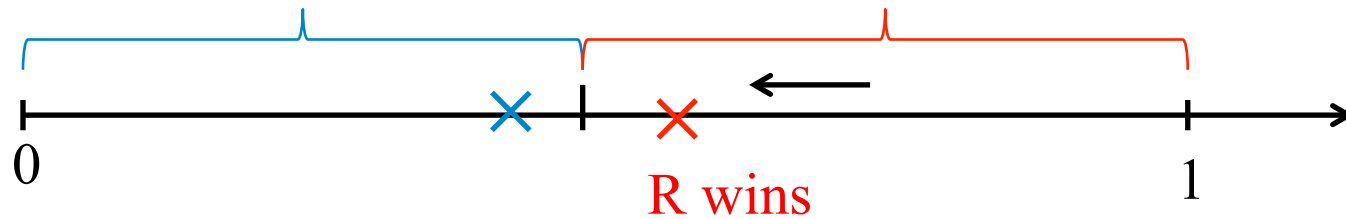
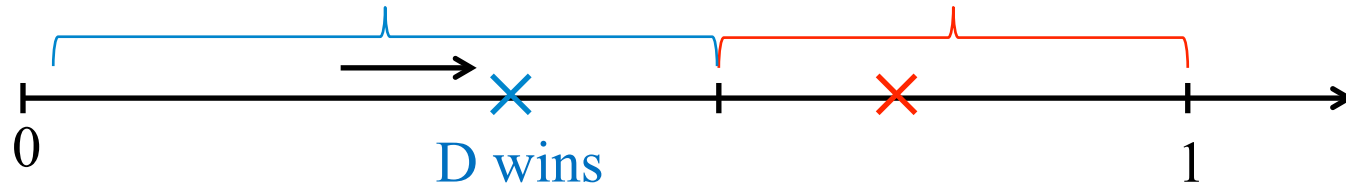
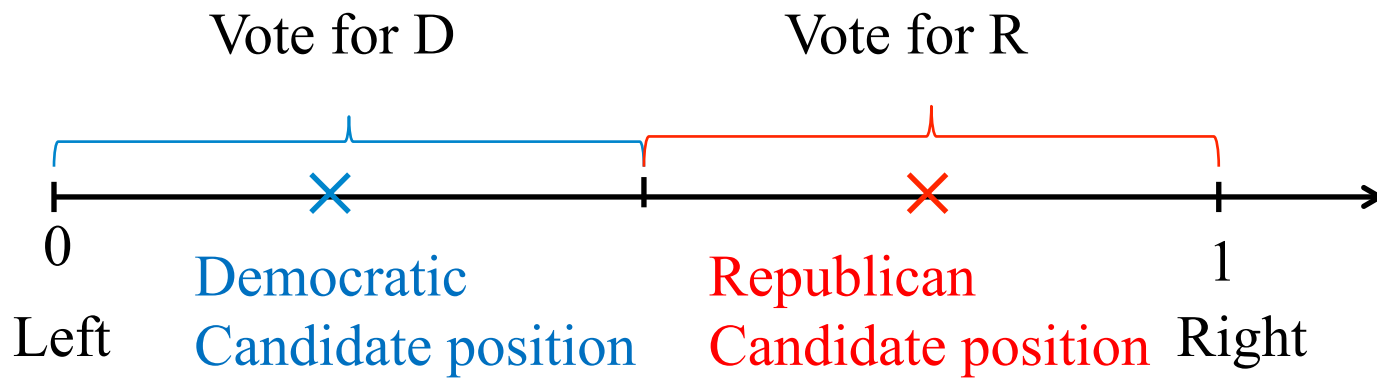
## EVIDENCE ON THE MEDIAN VOTER MODEL FOR REPRESENTATIVE DEMOCRACY

While the median voter model is a potentially powerful tool of political economy, its premise rests on some strong assumptions that may not be valid in the real world.

A large political economy literature has tested the median voter model by assessing the role of voter preferences on legislative voting behavior relative to other factors such as party or personal ideology.

In principle, candidates should adjust their position toward the median voter to win the election (see graph below)

⇒ Elected officials should represent the view of the median voter in their district



Both candidates positions converge to median

## TESTING THE MEDIAN VOTER MODEL

Evidence from US congress representatives:

**1) Senate:** 2 senators for each state in US senate: represent the same constituency and hence should vote in the same way in the senate if median voter model is right (Poole and Rosenthal, '96)

Yet, in the US, when a state has 1 republican senator and 1 democratic senator, those 2 senators vote very differently in the senate (contradicts the median voter model)

Current 2021 example: Joe Manchin (D) and Shelley Capito (R) are senators from West Virginia and vote very differently

## TESTING THE MEDIAN VOTER MODEL

**2) House of Representatives:** Using close elections for US representatives (Lee, Moretti, Butler QJE'04):

When a candidate crosses 50%, he/she gets elected. However, the constituency is virtually the same whether a candidate gets 49.9% or 50.1% of the vote.

Therefore, median voter implies that a Democratic representative elected with 50.1% should vote similarly in congress to a Republican representative elected with 50.1% of the votes.

Yet, in reality, closely elected representatives vote very differently (measured by Americans for Democratic Action ADA scores) if they are Democratic vs. Republican

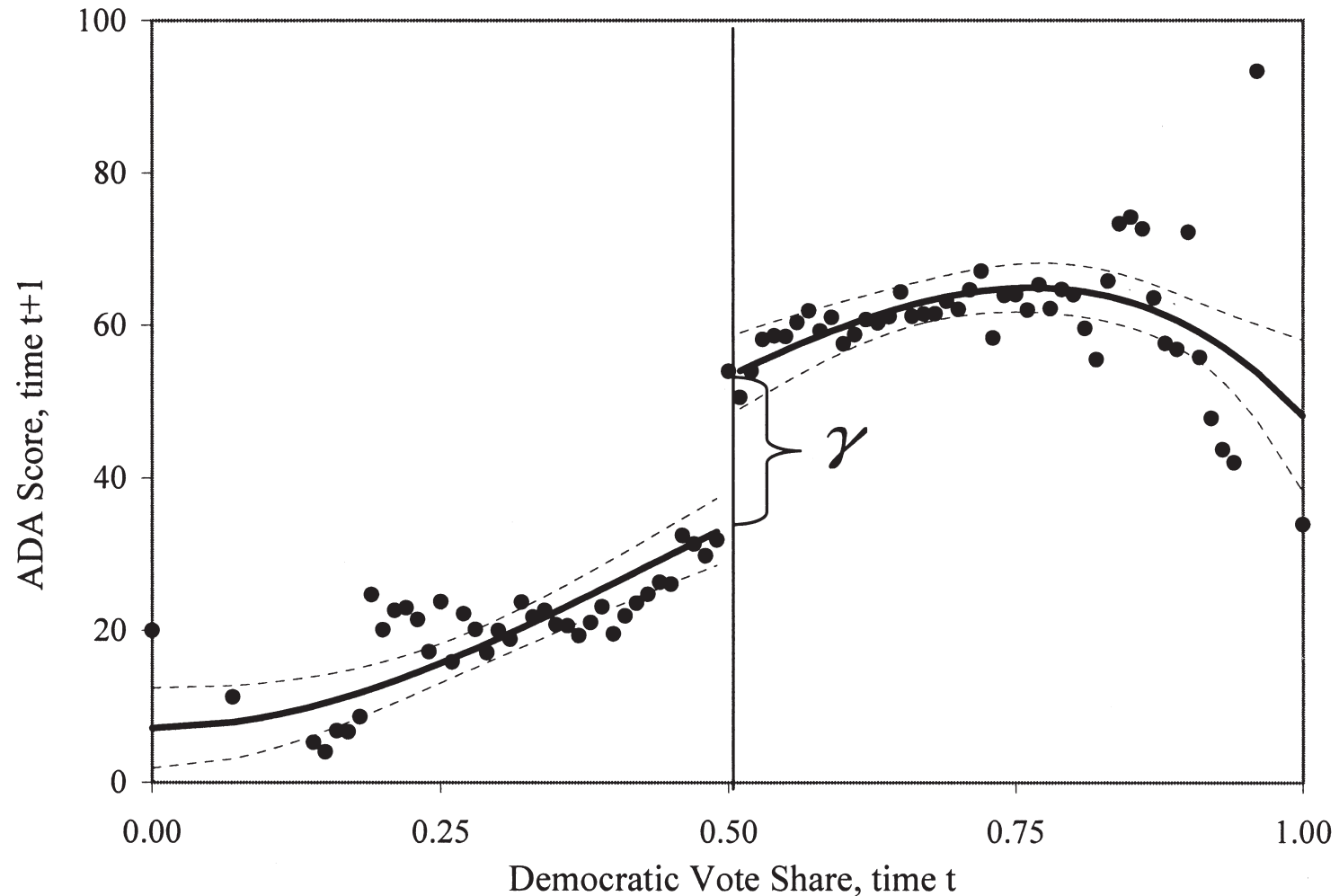


FIGURE I

Total Effect of Initial Win on Future ADA Scores:  $\gamma$

This figure plots ADA scores after the election at time  $t + 1$  against the Democrat vote share, time  $t$ . Each circle is the average ADA score within 0.01 intervals of the Democrat vote share. Solid lines are fitted values from fourth-order polynomial regressions on either side of the discontinuity. Dotted lines are pointwise 95 percent confidence intervals. The discontinuity gap estimates

$$\gamma = \underbrace{\pi_0(P_{t+1}^{*D} - P_{t+1}^{*R})}_{\text{“Affect”}} + \underbrace{\pi_1(P_{t+1}^{*D} - P_{t+1}^{*R})}_{\text{“Elect”}}.$$

Source: Lee, Moretti, Butler



# PUBLIC CHOICE THEORY: THE FOUNDATIONS OF GOVERNMENT FAILURE

**Public choice theory:** Government may not act to maximize the well-being of its citizens.

**Government failure:** The inability or unwillingness of the government to act primarily in the interest of its citizens.

Two examples:

**1) Dictatorship:** Dictator runs country for his (and family) benefits, not citizens

**2) Bureaucracies:** Organizations of civil servants that are in charge of carrying out the services of government but follow their self-interest

## LEVIATHAN THEORY

Under this theory, voters cannot trust the government to spend their tax dollars efficiently and must design ways to combat government overreach.

This view of government can explain the many rules in place in the United States and elsewhere that explicitly tie the government's hands in terms of taxes and spending.

Famous example: Proposition 13 passed by voters in California in 1978 sharply limits ability of CA legislature to increase taxes (needs a 2/3 super majority of both senate and assembly) and sets a 1% cap on the real estate property tax rate.

Democracy: 1 person = 1 vote. Free market view: \$1 = 1 vote. Reality is in between as money influences outcomes.

## PUBLIC VS. PRIVATE PROVISION

Are goods and services are provided more efficiently by the public or the private sector? (Cohen-Mikaelian 2021)

1) With competition, private production is more innovative and efficient but govt provision or regulation make sense for natural monopolies (e.g. utilities: water, energy, broadband)

2) For goods that consumers do not understand well (pensions, health insurance, education), private competition can lead to wasteful advertising or scamming

Private firms compete using enticing and costly advertising rather than underlying product quality  $\Rightarrow$  higher costs than public provision

3) In emergency situations (covid), govt command and control beats market to allocate resources (e.g. vaccine distribution)

4) Not-for-profit is an intermediate solution (e.g. education) more innovative than govt and not as predatory as for-profit

# Do Government Failures Affect Economic Growth?

Studies that suggest that poor government structure can have long-lasting negative impacts on economic growth

## 1) Effect of current institutions (Acemoglu and Robinson 2012):

North and South Korea had similar economies when they split in 1948 but South Korea is now more than 10 times richer per capita than North ⇒ Government policies/failures can have a huge impact

Conclusion of Acemoglu-Robinson: countries with “inclusive governments” (extending political and property rights broadly) grow faster than countries with “extractive governments” (power held by small self-serving elite)

## 2) Long-term consequences of institutions:

Acemoglu, Johnson, Robinson (2001) showed that places where European colonists settled instead of just extracting (settlers' mortality instrument) have experienced better economic development. Hugely influential study.

Dell (2010) shows long-run negative impacts of mita (forced labor mining in 16-17th century in a region of Peru) on stunting and consumption **today** using comparisons across old mita borders

## REFERENCES

Jonathan Gruber, *Public Finance and Public Policy*, Fourth Edition, 2019  
Worth Publishers, Chapter 9

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The colonial origins of comparative development: An empirical investigation." *American economic review* 91(5): 1369-1401. (web)

Acemoglu, Daron, and James Robinson. *Why nations fail: the origins of power, prosperity, and poverty*. Random House Digital, Inc., 2012.

Cohen, Donald and Allen Mikaelian. 2021. *The Privatization of Everything: How the Plunder of Public Goods Transformed America and How We Can Fight Back*, The New Press.

Dell, Melissa. "The persistent effects of Peru's mining mita." *Econometrica* 78.6 (2010): 1863-1903. (web)

Geanakoplos, John. "Three brief proofs of Arrow's impossibility theorem." *Economic Theory* 26.1 (2005): 211-215. (web)

Gethin, Amory, Clara Martinez-Toledano, Thomas Piketty. 2022. "Brahmin Left versus Merchant Right: Changing Political Cleavages in 21 Western Democracies, 1948-2020", *Quarterly Journal of Economics*, 137(1), 1-48. (web)

Lee, David S., Enrico Moretti, and Matthew J. Butler. "Do voters affect or elect policies? Evidence from the US House." *The Quarterly Journal of Economics* 119.3 (2004):807-859. (web)

Mauro, Paolo. "Corruption and growth." *The Quarterly Journal of Economics* 110.3 (1995): 681-712.(web)

Poole, Keith T. and Howard Rosenthal, "Are legislators ideologues or the agents of constituents?" *European Economic Review*,40(3-5), 1996, 707-717.(web)

Washington, Ebonya L. "Female Socialization: How Daughters Affect Their Legislator Fathers." *Voting on Womens Issues.* *American Economic Review* 98.1 (2008): 311-332.(web)