

Wages, taxes, and labor supply elasticities: The role of social preferences

EEA-ESEM Congress, Aug 27, 2024

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 - In practice, no distinction
- This paper: **not the same thing** if we incorporate **social preferences**
 - Specifically, preferences over tax-funded government expenditure
 - I might like/hate that my tax dollars eventually go towards public goods expenditure
 - Agnostic about whether it is pure altruism or warm glow

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 - Similar in spirit to Kosar, Sahin & Zafar (2019), plus a tax dimension
- On average, **wage elasticities are meaningfully larger than net-of-tax rate elasticities** among our respondents
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 - Consistent with **positive social preferences** towards tax-funded government expenditure
 - Wage-tax elasticity wedge is larger for respondents who have a better opinion of the government, or if taxes fund programs that the respondent likes
- For external validity, we examine correlations of the elasticity of taxable income (ETI) with proxies of social preferences

Modifying the usual model of labor supply

$$\begin{aligned} & \max_{c,h} U(c, h) && \text{Maximize utility} \\ & \text{s.t. } c = (1 - \tau)wh + N && \text{s.t. budget constraint} \end{aligned}$$

- c, h : consumption, hours worked
- τ, w, N : tax rate, wage, non-labor income

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$$\max_{c,h} U(c, h, G)$$

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- c, h : consumption, hours worked
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- G : Government expenditure funded by individual's tax contribution
- Intertemporal version yields the same elasticities, assuming government balances budget every period

Implications for labor supply elasticities

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Positive under usual assumptions

- With social preference term $v(G)$:
 - $U_G + U_{GG}G$ enters with a positive sign in ϵ_w^F and negative sign in $\epsilon_{1-\tau}^F$

Still positive

$$\epsilon_w^F = \frac{-w(1-\tau)U_{cc} \left[U_c + \frac{\tau}{1-\tau} (U_G + U_{GG}G) \right]}{h(U_{cc}U_{hh} - U_{ch}^2 + \tau^2 w^2 U_{cc} U_{GG})}$$

Still positive

$$\epsilon_{1-\tau}^F = \frac{-w(1-\tau)U_{cc} [U_c - (U_G + U_{GG}G)]}{h(U_{cc}U_{hh} - U_{ch}^2 + \tau^2 w^2 U_{cc} U_{GG})}$$

- U_G : MU of tax-funded government expenditure (expect +)
- $U_{GG}G$: DMU (times G) of tax-funded government expenditure (expect -)

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Pre-vignette

- Demographics
- Work situation
- Assets and consumption (including unemployment consumption)

Instructions

- Instructions slide show
- Simple test
- Optional review of slides

10 pairs of vignettes

- Pairs 1 to 4
- Pairs 5 to 8
- Pairs 9 and 10

Post-vignette

- Political opinion
- Attitudes towards government expenditures
- Misc demographics


The scenarios we asked respondents to think about

Slide 1 of instructions slide

In the next section, we will show you 10 pairs of **hypothetical scenarios**.

In all scenarios, suppose you have to **leave your current job and find a new one**.

We will ask if you would take up a job in each scenario and which of the two scenarios you prefer.



Next Slide



Slide 2 of instructions slide

For Example

"You have to leave your current job and find a new one. You have received a job offer that will pay you **\$25** per hour and require that you work **40** hours per week. You will have to pay the federal income tax on the amount you earn from this job at the rate of **15%**."

The scenarios differ only in these three numbers

Next Slide



Layout of the scenarios shown to respondents (scenario pairs 1–4)

	If unemployed, would you take up this job?	
	Yes	No
<p><u>Scenario 1</u></p> <p>Scenario details:</p> <p>Hourly wage rate: \$12.00 Weekly work hours: 35 hours Income tax rate: 4%</p> <p>This means that, every month: ⓘ</p> <p>Your pre-tax earnings: \$1,680 You pay this tax to the government: \$67 Your post-tax earnings: \$1,613</p>	<input type="radio"/>	<input type="radio"/>

Given these scenario characteristics, check "Yes" if you would work, and "No" if you would prefer to remain unemployed.

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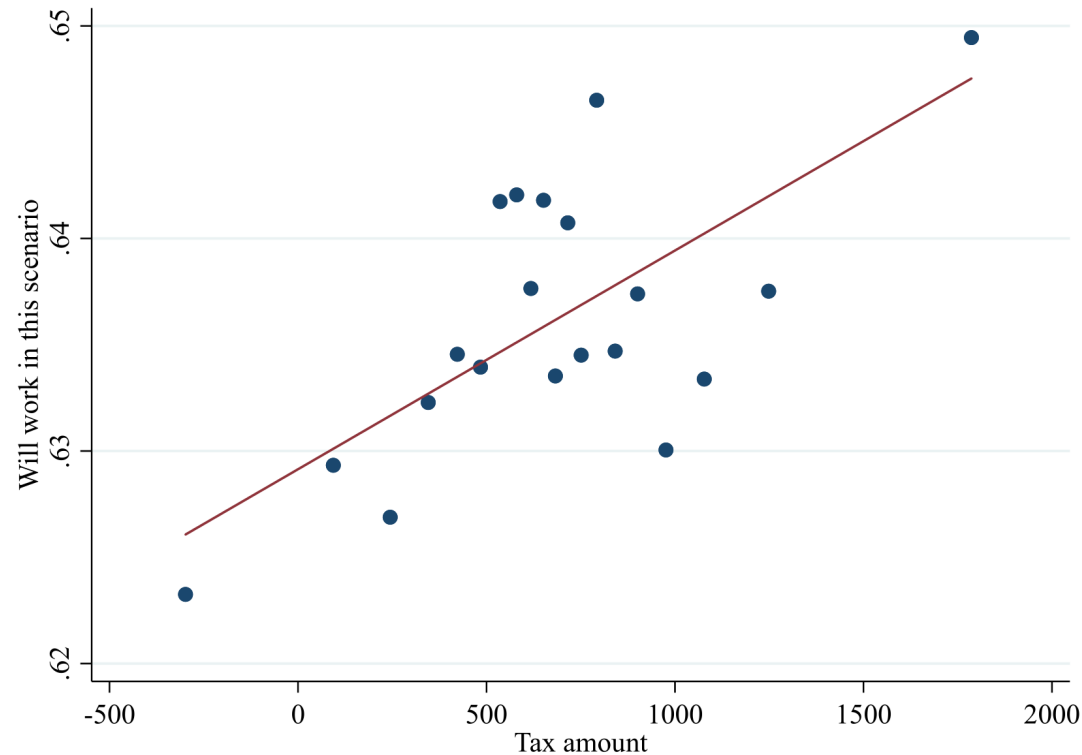
	If unemployed, would you take up this job?	
	Yes	No
<p>Scenario 2</p> <p>Scenario details: Hourly wage rate: \$10.00 Weekly work hours: 60 hours Income tax rate: 20%</p> <p>This means that, every month: ⓘ Your pre-tax earnings: \$2,400 You pay this tax to the government: \$480 Your post-tax earnings: \$1,920</p>	<input type="radio"/>	<input type="radio"/>
<p>Read the details for Scenario 2 and make the analogous selections.</p>		

	If unemployed, would you take up this job?		Which scenario would you prefer?
	Yes	No	
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<p>Finally, check the top box if you would prefer Scenario 1, or check the bottom box if you would prefer Scenario 2. This is also your chance to check if your answers on this page are what you intend before you submit.</p>			

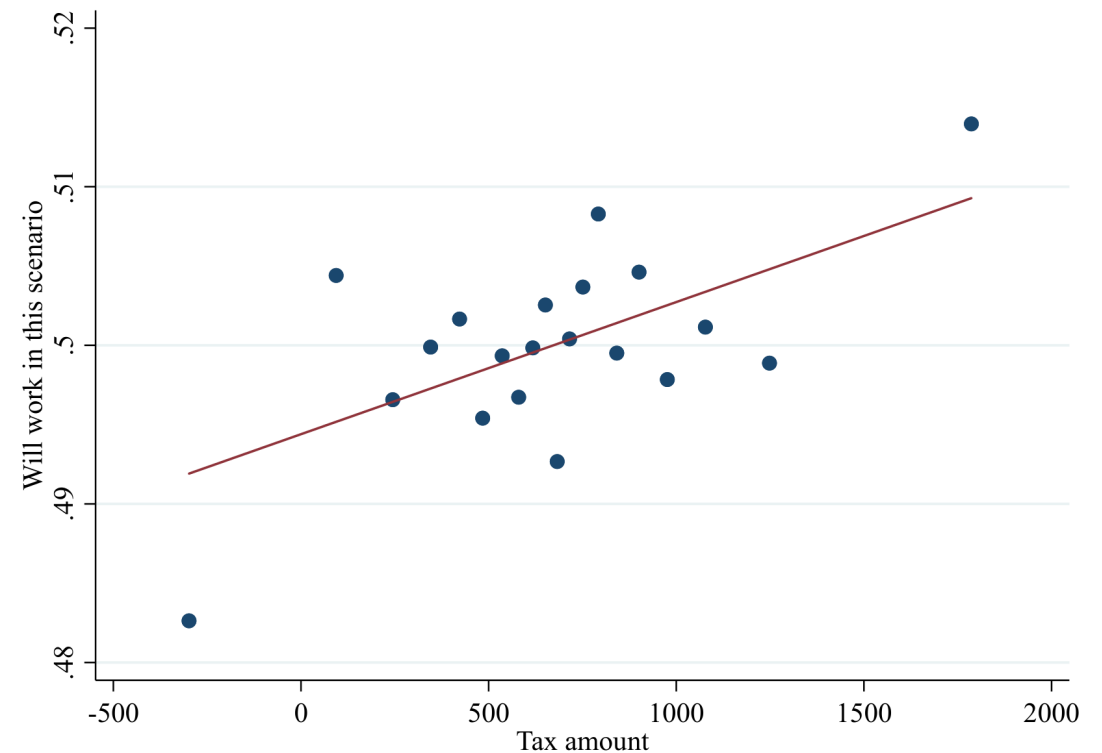
Reduced form evidence: respondents exhibit **positive** social preferences

- Regress choice on vignette taxes paid, controlling for:
 - Individual, pair, and order FEs
 - Fixed effects in centile of disposable income by centile of work hours

Choice of work or not



Choice of whether to pick the scenario over the other



Scenario pairs 5–8 also ask how much respondent would consume in each scenario (needed for our estimation)

	Log(consumption) (1)
Log(Take-home earnings)	0.37*** (0.036)
Log(Pre-tax earnings)	0.024 (0.036)
Observations	43502
Respondents	5440

Additional controls: respondent FEs, pair FEs, and option FEs.

- In regression, effect of “more earnings” loads on take-home earnings
- To estimate elasticities, we predict (log) consumption using (log) take-home earnings at individual-level
 - Variation for consumption comes from take-home earnings + a slope based on 8 data points

Empirical strategy

1. Estimate structural parameters of a logit choice model
2. Simulate elasticities (from the model section) using coefficients and *actual* c_i , h_i , and tax-simulation G_i
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- Logit model conditional on respondent-pair fixed effects
 - Given a pair of scenarios, respondent i chooses option j in pair t if it yields a higher utility, with utility specified as:

$$U(c_{itj}, h_{itj}, G_{itj}) = \beta_c \log c_{itj} + \beta_h \log(\bar{L} - h_{itj}) + \beta_{cc} (\log c_{itj})^2 + \beta_{hh} (\log(\bar{L} - h_{itj}))^2 + \beta_{ch} \log c_{itj} \log(\bar{L} - h_{itj}) \\ + \beta_G G_{itj} + \beta_{GG} G_{itj}^2 + \beta_{GGG} G_{itj}^3 + \text{controls} + \varepsilon_{itj}$$

Plus separable cubic in G

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Controls:

Scenario order (first or second scenario of the pair)

Quadratic in $\log(\text{assets}_i + \text{spouseincome}_i + \text{savings}_{itj})$

Whether $h_{itj} < 35$ hours per week

- Wedge for Marshallian and Hicksian elasticities are similar

	Based on dep. var.: Will work in this scenario		Based on dep. var.: Prefers this scenario over other	
	No social preferences (1)	With social preferences (2)	No social preferences (3)	With social preferences (4)
<i>Frisch elasticity of labor supply with respect to:</i>				
Wage	1.31*** (0.11)	1.22*** (0.10)	1.86*** (0.15)	1.78*** (0.15)
Net-of-tax rate	1.31*** (0.11)	0.63*** (0.080)	1.86*** (0.15)	1.17*** (0.11)
Wage-tax elasticity wedge	0 (.)	0.59*** (0.065)	0 (.)	0.62*** (0.063)
Respondents	4,671	4,671	5,381	5,381

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- Wedge is robust to various specification checks

Scenario pairs 9 and 10 add earmarked tax for a specific program

Scenario Pair 9. For this scenario pair, the income tax rate is the same in both scenarios and equal to 10%. However, the federal government will also collect an additional tax at the rate specified in the table, for the specific purpose of funding the following expenditure:

Income Security and Other Financial Assistance Programs

This includes programs like Earned Income Tax Credits (EITC), food stamps, unemployment compensation, and housing assistance.

In each scenario, please select whether you would accept the job and which scenario you would prefer. For a reminder about the assumptions of each scenario, please click here.

Scenario Pair 10. For this scenario pair, the income tax rate is the same in both scenarios and equal to 10%. However, the federal government will also collect an additional tax at the rate specified in the table, for the specific purpose of funding the following expenditure:

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This includes programs that provide health coverage for low income people, and programs related to health research and training. This category excludes Medicare.

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Now for these last two scenario pairs, please suppose the income tax rate is 10% in both scenarios. However, the federal government will collect an additional tax to fund a specific purpose.

Click anywhere to continue.

Scenario details:

This means that, every month:

Your pre-tax earnings: \$1,200
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 You pay this additional tax to fund *Income Security and Other Financial Assistance Programs*: \$120
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Scenario details:	If unemployed, would you take up this job?		Which scenario would you prefer?
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<p>Scenario 1</p> <p>Scenario details: Hourly wage rate: \$34.00 Weekly work hours: 30 hours Additional income tax rate: 8%</p> <p>This means that, every month: ⓘ Your pre-tax earnings: \$4,080 You pay this baseline tax to the government: \$408 You pay this additional tax to fund <i>Medicaid, Affordable Care Act, and Other Health Services</i>: \$326 Your post-tax earnings: \$3,346</p>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
<p>Scenario 2</p> <p>Scenario details: Hourly wage rate: \$12.00 Weekly work hours: 50 hours Additional income tax rate: 4%</p> <p>This means that, every month: ⓘ Your pre-tax earnings: \$2,400 You pay this baseline tax to the government: \$240 You pay this additional tax to fund <i>Medicaid, Affordable Care Act, and Other Health Services</i>: \$96 Your post-tax earnings: \$2,064</p>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>

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- To investigate if the wedge varies with whether taxes fund specific programs that respondents like more
- Near the end of the survey, we ask respondents how much they like tax money being used for these programs

Wage-tax elasticity wedge is larger if respondent likes the category

$$U(c_{itj}, h_{itj}, G_{itj}, S_{itj}) = \text{translog}(c_{itj}, \bar{L} - h_{itj}) + \beta_G G_{itj} + \beta_S S_{itj} + \beta_{GS} G_{itj} S_{itj} + \text{controls} + \varepsilon_{itj}$$

	Average partial effect of liking the program on the wedge specified (1)
Marshallian wage-tax elasticity wedge	0.27** (0.13)
Hicksian wage-tax elasticity wedge	0.55** (0.27)
Frisch wage-tax elasticity wedge	0.69* (0.41)
Respondents	3,136

Next, we turn to a recent meta-analysis of the elasticity of taxable income (ETI) with respect to the net-of-tax rate

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- Using Neisser's replication kit, we examine the relationship between the ETI and variables from the World Values Survey/European Values Survey
- Follow Neisser's main specification (including controls), except:
 - Exclude one control (country-group) to use all cross-country variation
 - Combine both before-deductions and after-deductions ETIs in one regression

The ETI is negatively correlated with proxies for social preferences

	Dependent variable: ETI. Government-related social preferences proxy is:						
	Confidence in government (1)	Confidence in political parties (2)	Confidence in parliament (3)	Confidence in civil service (4)	Income should be made more equal (5)	Gvt should increase ownership of businesses (6)	Proud to be a citizen (7)
<i>Panel A: Main estimates</i>							
Gvt-related social preferences proxy	-0.50*** (0.079)	-0.36*** (0.073)	-0.41*** (0.12)	-0.49* (0.25)	-0.054 (0.059)	-0.16** (0.078)	-0.37*** (0.13)
Observations	1,701	1,701	1,701	1,701	1,701	1,701	1,701
Number of studies	60	60	60	60	60	60	60
<i>Panel B: Robustness</i>							
1 Before-deduction elasticities only	-0.36*** (0.12)	-0.28 (0.17)	-0.23* (0.12)	-0.19 (0.11)	-0.044 (0.046)	-0.00071 (0.053)	-0.28*** (0.097)
2 After-deduction elasticities only	-0.53*** (0.082)	-0.38*** (0.074)	-0.46*** (0.13)	-0.76** (0.36)	-0.066 (0.12)	-0.30** (0.11)	-0.48* (0.25)
3 Include Neisser's contextual factors	-0.44*** (0.078)	-0.48*** (0.091)	-0.48*** (0.072)	-0.73*** (0.21)	-0.13 (0.093)	-0.21*** (0.060)	-0.010 (0.12)
4 Include country-group FE	-0.51*** (0.087)	-0.37*** (0.080)	-0.41*** (0.15)	-0.42 (0.28)	-0.025 (0.060)	-0.23*** (0.083)	-0.28* (0.15)
5 Include country-group and time FE	-0.52*** (0.088)	-0.41*** (0.069)	-0.44*** (0.14)	-0.63* (0.38)	-0.050 (0.100)	-0.31*** (0.11)	-0.28 (0.18)

The ETI is negatively correlated with proxies for social preferences

	Dependent variable: ETI. Government-related social preferences proxy is:						
	Confidence in government (1)	Confidence in political parties (2)	Confidence in parliament (3)	Confidence in civil service (4)	Income should be made more equal (5)	Gvt should increase ownership of businesses (6)	Proud to be a citizen (7)
<i>Panel A: Main estimates</i>							
Gvt-related social preferences proxy	-0.50*** (0.079)	-0.36*** (0.073)	-0.41*** (0.12)	-0.49* (0.25)	-0.054 (0.059)	-0.16** (0.078)	-0.37*** (0.13)
Observations	1,701	1,701	1,701	1,701	1,701	1,701	1,701
Number of studies	60	60	60	60	60	60	60
<i>Panel B: Robustness</i>							
1 Before-deduction elasticities only	-0.36*** (0.12)	-0.28 (0.17)	-0.23* (0.12)	-0.19 (0.11)	-0.044 (0.046)	-0.00071 (0.053)	-0.28*** (0.097)
2 After-deduction elasticities only	-0.53*** (0.082)	-0.38*** (0.074)	-0.46*** (0.13)	-0.76** (0.36)	-0.066 (0.12)	-0.30** (0.11)	-0.48* (0.25)
3 Include Neisser's contextual factors	-0.44*** (0.078)	-0.48*** (0.091)	-0.48*** (0.072)	-0.73*** (0.21)	-0.13 (0.093)	-0.21*** (0.060)	-0.010 (0.12)
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Conclusion

- Government-related social preferences drive a wedge between labor supply responses to taxes and wages
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Conclusion

- Government-related social preferences drive a wedge between labor supply responses to taxes and wages
 - Wage elasticities are 1.5 times as large as net-of-tax rate elasticities
- Most quasi-experimental labor supply elasticity estimates use taxes for variation
 - When modeling response to wages (or business cycles), economists should take this difference into account
- More generally, government-related social preferences have implications for optimal taxation through its effect on the social welfare function
 - Positive social preferences => higher optimal tax rates
 - Heterogeneity in social preferences would affect optimal nonlinear optimal tax rates

Appendix

- Large literature estimating **labor supply elasticities** using:
 - **Wages**: MaCurdy 1981; Altonji 1986; Camerer et al. 1997; Oettinger 1999; Pistaferri 2003; Ziliak and Kniesner 2005; Farber 2005; Blau and Kahn 2007; Fehr and Goette 2007; Stafford 2015; Giné et al. 2017; Chen et al. 2019
 - **Tax rates**: Eissa 1995; Blundell et al. 1998; Blundell et al. 1998; Bianchi et al. 2001; Eissa and Hoynes 2004; Chetty et al. 2011; Gelber 2014; Blundell et al. 2016; Sigurdsson 2019; Stefánsson 2019; Unrath 2020; Martinez et al. 2021; Elder et al. 2023; Sigaard 2023
- ★ **First to show (with empirical evidence) that social preferences induces a wedge between the two**
 - Other reasons that literature has pointed out/alluded to: salience (Chetty et al. 2009; Finkelstein 2009; Blumkin et al. 2012; Taubinsky and Rees-Jones 2018; Kroft et al. 2024), tax-benefit linkages (Summers 1989; Gruber 1997; Bozio 2019)
- ★ **This difference matters for the micro-macro labor supply elasticities debate**

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- ★ **This difference matters for the micro-macro labor supply elasticities debate**
- Large literature investigating **social preferences**
 - **Intrinsic motivations for paying taxes**: Frey 1992; Konrad and Qari 2012; Lambertson et al. 2018; Nathan et al. 2021; Doerrenberg and Peichl 2022; Cingl et al. 2023; Besley et al. 2023
 - **Taxation and public goods**: Cowell and Gordon 1988; Alm et al. 1993; Hall and Preston 2000; Cullen et al. 2021; Giacobasso et al. 2022; Falsetta et al. 2023
 - **Charitable giving and volunteering**: Freeman 1997; DellaVigna et al. 2012; Bauer et al. 2013; Andreoni and Payne 2013; Lilley and Slonim 2014; Exley 2016; Ottoni-Wilhelm et al. 2017; Carpenter 2021
 - **Redistribution**: Alesina and Angeletos 2005; Alesina and Giuliano 2011; Luttmer and Singhal 2011; Durante et al. 2014; Kuziemko et al. 2015; Karadja et al. 2017; Stantcheva 2021; Almås et al. 2022; Hvidberg et al. 2023
 - **Optimal taxation**: Saez 2004; Diamond 2006
 - **Worker effort**: Krueger and Mas 2004; Gneezy and List 2006; Mas 2006; Kube et al. 2012, 2013; DellaVigna et al. 2022
- ★ **We add to the evidence on non-volunteering labor supply and income tax contribution**

$$V(a, w, \tau, N) = \max_{c, a', h} u(c, h) + v(G) + \beta E[V(a', w', \tau', N')]$$

$$\text{s. t. } c + \frac{1}{1+r} a' = a + (1 - \tau)wh + N$$

$$G = \tau wh$$

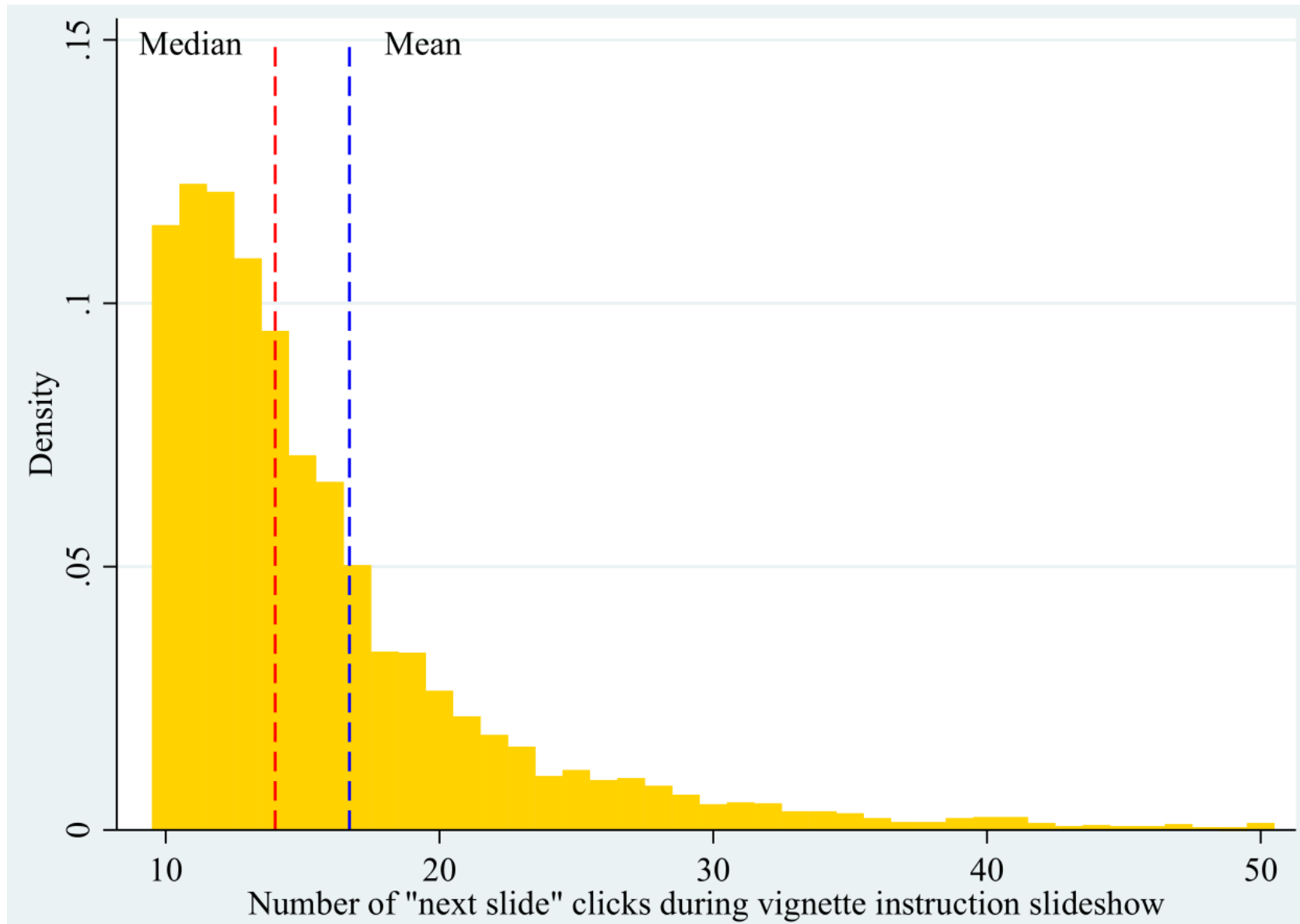
Summary statistics

	U.S. Population	Survey Sample
Male	0.52	0.51
25-34 years old	0.29	0.28
35-44 years old	0.27	0.26
45-54 years old	0.24	0.24
55+ years old	0.21	0.22
0-19,999 dollars	0.12	0.08
20,000-39,999 dollars	0.23	0.24
40,000-59,999 dollars	0.23	0.27
60,000-99,999 dollars	0.24	0.28
100,000+ dollars	0.18	0.13
Four-year college degree or more	0.43	0.60
High-school graduate or less	0.31	0.12
Married	0.61	0.52
White	0.76	0.82
Black	0.12	0.08
Asian	0.08	0.07
Others	0.04	0.04
Hispanic	0.20	0.09
Republican	0.30	0.27
Democrat	0.29	0.40
Independent	0.38	0.26
Voted for Biden in the 2020 presidential election	0.51	0.51
Voted for Trump in the 2020 presidential election	0.47	0.32
Sample Size		5,440

Other instructions to respondents

1. Jobs and family members' situations are otherwise identical to current
2. Tax rate in the scenarios is the federal income tax, and applies to people "similar to you"
 - Test of instructions is on whether it is federal, state, or local (7% failed)
3. Federal government balances budget
4. If respondent doesn't choose to work, (s)he will have access to same resources that is available if quit actual job, and same chance of finding new job

“Next” clicks during slide show





Scenario pairs 5–8 additionally collect information on consumption

Scenario Pair 8. Suppose you have to leave your current job and find a new one. Below, we will show you two different scenarios. In each scenario, you are offered a job with the following pay and hours package. You will also pay income tax to the federal government at the rate specified in the table.

Every other aspects of these two scenarios are exactly the same. In each scenario, please select how much your household would spend in a month in that scenario, whether you would accept the job, and which scenario you would prefer.

For a reminder about the assumptions of each scenario, please [click here](#).



	Suppose you took this job, how much would your household spend in total each month? ①	If unemployed, would you take up this job?		Which scenario would you prefer?
		Yes	No	
<p>Scenario 1</p> <p>Scenario details: Hourly wage rate: \$14.00 Weekly work hours: 30 hours Income tax rate: 8%</p> <p>This means that, every month: ① Your pre-tax earnings: \$1,680 You pay this tax to the government: \$134 Your post-tax earnings: \$1,546</p>	 Spend \$1,013 per month, saving \$533 of your monthly post-tax earnings	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
<p>Scenario 2</p> <p>Scenario details: Hourly wage rate: \$24.00 Weekly work hours: 20 hours Income tax rate: 26%</p> <p>This means that, every month: ① Your pre-tax earnings: \$1,920 You pay this tax to the government: \$499 Your post-tax earnings: \$1,421</p>	 Spend \$1,280 per month, saving \$141 of your monthly post-tax earnings	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

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- Pair 7 was an attention check question
 - Two scenarios had equal work hours and tax rate, but one had higher wages
 - 8% failed

Reduced form evidence for social preferences

	Dependent variable: Will work in this scenario.			Dependent variable: Prefers this scenario over other.		
	Fifth-order polynomial in controls (1)	FEs for interacted centiles of controls (2)	FEs from (2), further allowing het- erogeneous slopes within cells (3)	Fifth-order polynomial in controls (4)	FEs for interacted centiles of controls (5)	FEs from (5), further allowing het- erogeneous slopes within cells (6)
Tax paid (\$1000)	0.021*** (0.0045)	0.010*** (0.0031)	0.014*** (0.0034)	0.014*** (0.0041)	0.0083** (0.0036)	0.014*** (0.0042)
Observations	87,037	86,978	86,978	87,040	86,981	86,981
Respondents	5,440	5,440	5,440	5,440	5,440	5,440

Controls: Individual, pair, and order FEs; specified bivariate polynomial in disposable income and work hours.

Estimates of utility parameters

	Dependent variable:			
	Will work in this scenario		Prefers this scenario over other	
	(1)	(2)	(3)	(4)
Log(Consumption)	2.26 (1.63)	0.47 (1.63)	1.14 (1.37)	-0.37 (1.39)
Log(672 - Work hours)	219.3*** (20.7)	204.2*** (20.8)	143.5*** (13.5)	134.4*** (13.6)
Log(Consumption) × Log(Consumption)	0.18*** (0.018)	0.17*** (0.018)	0.19*** (0.032)	0.18*** (0.032)
Log(672 - Work hours) × Log(672 - Work hours)	-16.9*** (1.63)	-15.7*** (1.64)	-11.0*** (1.07)	-10.3*** (1.07)
Log(Consumption) × Log(672 - Work hours)	-0.44* (0.25)	-0.15 (0.25)	-0.29* (0.18)	-0.055 (0.18)
1.parttime	-0.23*** (0.056)	-0.23*** (0.057)	-0.17*** (0.036)	-0.17*** (0.036)
Tax paid (\$1000)		0.89*** (0.089)		0.48*** (0.070)
Tax paid (\$1000) ^ 2		-0.17*** (0.038)		-0.064*** (0.024)
Tax paid (\$1000) ^ 3		0.0068** (0.0032)		0.0016** (0.00078)
Observations	36,038	36,038	80,434	80,434
Respondents	4,671	4,671	5,381	5,381
$E(U_c) \times 1,000$	1.1***	1.0***	1.0***	0.99***
$E(U_G) \times 1,000$		0.70***		0.41***
$E(U_G) / E(U_c)$		0.69		0.41
$E(U_{GGG}) \times 1,000$		-0.17***		-0.069***
Log pseudo-likelihood	-8612.4	-8442.8	-21773.8	-21596.4

- On average, respondents have positive social preferences

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- On average, respondents have positive social preferences
- Ratio of average MU_G to $MU_c \approx 0.4-0.7$
- Analogous ratios for charitable giving (our calculations)
 - DellaVigna et al. 2012: 0.25
 - Ottoni-Wilhelm et al. 2017: 0.9

Estimates of utility parameters

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	Will work in this scenario		Prefers this scenario over other	
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- Ratio of average MU_G to $MU_c \approx 0.4-0.7$
- Analogous ratios for charitable giving (our calculations)
 - DellaVigna et al. 2012: 0.25
 - Ottoni-Wilhelm et al. 2017: 0.9
- Social preferences exhibits DMU
 - More consistent with warm glow than pure altruism (DellaVigna et al. 2012)

Results are robust to changes in specification (I)

		Frisch wage-tax elasticity wedge, estimated based on:	
		Will work in this scenario	Prefers this scenario over other
		(1)	(2)
0	Main estimates	0.59*** (0.065)	0.62*** (0.063)
1	Fifth order polynomial in G	0.47*** (0.086)	0.54 (1.25)
2	G interacted with $\log(c)$ and $\log(\bar{L} - h)$	0.25*** (0.097)	0.32** (0.13)
3	Quadratic utility	0.61*** (0.079)	0.65*** (0.090)
4	β_c and β_h varies with individual characteristics	0.56*** (0.063)	0.59*** (0.061)
5	Using non-imputed consumption	0.76*** (0.11)	0.75*** (0.10)
6	Consumption imputed based on Empirical Bayes	0.42*** (0.070)	0.40*** (0.071)

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Basic checks on specification

Results are robust to changes in specification (I)

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Utility specifications that others have used

Results are robust to changes in specification (I)

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		Will work in this scenario	Prefers this scenario over other
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Don't impute consumption (pairs 5–8 only)

Results are robust to changes in specification (I)

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Imputation using empirical bayes

Results are robust to changes in specification (II)

		Frisch wage-tax elasticity wedge, estimated based on:	
		Will work in this scenario	Prefers this scenario over other
		(1)	(2)
0	Main estimates	0.59*** (0.065)	0.62*** (0.063)
7	No log ($assets_i + spouseincome_i + savings_{itj}$) controls	1.01*** (0.092)	1.03*** (0.080)
8	Exclude pairs since observation of the intransitivity prompt	0.46*** (0.057)	0.53*** (0.059)
9	Exclude respondents who ever made an intransitive choice	0.51*** (0.064)	0.54*** (0.062)
10	Good quality responses	0.42*** (0.059)	0.43*** (0.052)
11	Median estimate	0.57*** (0.065)	0.56*** (0.068)
12	Reweight for demographics	0.52*** (0.10)	0.65*** (0.13)

Results are robust to changes in specification (II)

		Frisch wage-tax elasticity wedge, estimated based on:	
		Will work in this scenario	Prefers this scenario over other
		(1)	(2)
0	Main estimates	0.59*** (0.065)	0.62*** (0.063)
7	No log ($assets_i + spouseincome_i + savings_{itj}$) controls	1.01*** (0.092)	1.03*** (0.080)
8	Exclude pairs since observation of the intransitivity prompt	0.46*** (0.057)	0.53*** (0.059)
9	Exclude respondents who ever made an intransitive choice	0.51*** (0.064)	0.54*** (0.062)
10	Good quality responses	0.42*** (0.059)	0.43*** (0.052)
11	Median estimate	0.57*** (0.065)	0.56*** (0.068)
12	Reweight for demographics	0.52*** (0.10)	0.65*** (0.13)

If Scenario 1 \succ Nonwork \succ Scenario 2, but then choose Scenario 2 \succ Scenario 1, we warn that “most people would find it inconsistent”

Results are robust to changes in specification (II)

		Frisch wage-tax elasticity wedge, estimated based on:	
		Will work in this scenario	Prefers this scenario over other
		(1)	(2)
0	Main estimates	0.59*** (0.065)	0.62*** (0.063)
7	No log ($assets_i + spouseincome_i + savings_{itj}$) controls	1.01*** (0.092)	1.03*** (0.080)
8	Exclude pairs since observation of the intransitivity prompt	0.46*** (0.057)	0.53*** (0.059)
9	Exclude respondents who ever made an intransitive choice	0.51*** (0.064)	0.54*** (0.062)
10	Good quality responses	0.42*** (0.059)	0.43*** (0.052)
11	Median estimate	0.57*** (0.065)	0.56*** (0.068)
12	Reweight for demographics	0.52*** (0.10)	0.65*** (0.13)

Exclude inattentive, “too fast”, “too many clicks on instructions slides”

Results are robust to changes in specification (II)

		Frisch wage-tax elasticity wedge, estimated based on:	
		Will work in this scenario	Prefers this scenario over other
		(1)	(2)
0	Main estimates	0.59*** (0.065)	0.62*** (0.063)
7	No log ($assets_i + spouseincome_i + savings_{itj}$) controls	1.01*** (0.092)	1.03*** (0.080)
8	Exclude pairs since observation of the intransitivity prompt	0.46*** (0.057)	0.53*** (0.059)
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Results are robust to changes in specification (II)

		Frisch wage-tax elasticity wedge, estimated based on:	
		Will work in this scenario	Prefers this scenario over other
		(1)	(2)
0	Main estimates	0.59*** (0.065)	0.62*** (0.063)
7	No log ($assets_i + spouseincome_i + savings_{itj}$) controls	1.01*** (0.092)	1.03*** (0.080)
8	Exclude pairs since observation of the intransitivity prompt	0.46*** (0.057)	0.53*** (0.059)
9	Exclude respondents who ever made an intransitive choice	0.51*** (0.064)	0.54*** (0.062)
10	Good quality responses	0.42*** (0.059)	0.43*** (0.052)
11	Median estimate	0.57*** (0.065)	0.56*** (0.068)
12	Reweight for demographics	0.52*** (0.10)	0.65*** (0.13)

Frisch elasticities of labor supply, by sex and marital status

	Subsample:			
	Non-married men (1)	Non-married women (2)	Married men (3)	Married women (4)
<i>Panel A: Dependent variable: Will work in this scenario</i>				
Frisch wage elasticity	1.35*** (0.19)	1.24*** (0.17)	1.03*** (0.22)	0.87*** (0.13)
Frisch net-of-tax rate elasticity	0.69*** (0.18)	0.60*** (0.16)	0.58*** (0.22)	0.36*** (0.13)
Frisch wage-tax elasticity wedge	0.66*** (0.072)	0.64*** (0.066)	0.45*** (0.075)	0.52*** (0.062)
Respondents in subsample	1,136	1,056	1,244	1,235
<i>Panel B: Dependent variable: Prefers this scenario over other</i>				
Frisch wage elasticity	1.76*** (0.20)	1.82*** (0.20)	1.29*** (0.24)	1.76*** (0.20)
Frisch net-of-tax rate elasticity	1.14*** (0.19)	1.19*** (0.19)	0.75*** (0.23)	1.14*** (0.19)
Frisch wage-tax elasticity wedge	0.62*** (0.070)	0.63*** (0.064)	0.54*** (0.084)	0.62*** (0.070)
Respondents in subsample	1,304	1,251	1,457	1,304

Heterogeneity: wage-tax elasticity wedge is larger if respondent has a better opinion of the government

	Frisch wage-tax elasticity wedge, differenced across specified heterogeneity variable (1)
General opinion of government	0.26*** (0.083)
Importance of government	0.020 (0.059)
Trust in government	0.26** (0.13)
Programs benefit people like me	0.15* (0.082)
Government revenue allocation is fair	0.20*** (0.064)

- We find little heterogeneity in effect by political affiliation

Opinions on government expenditures

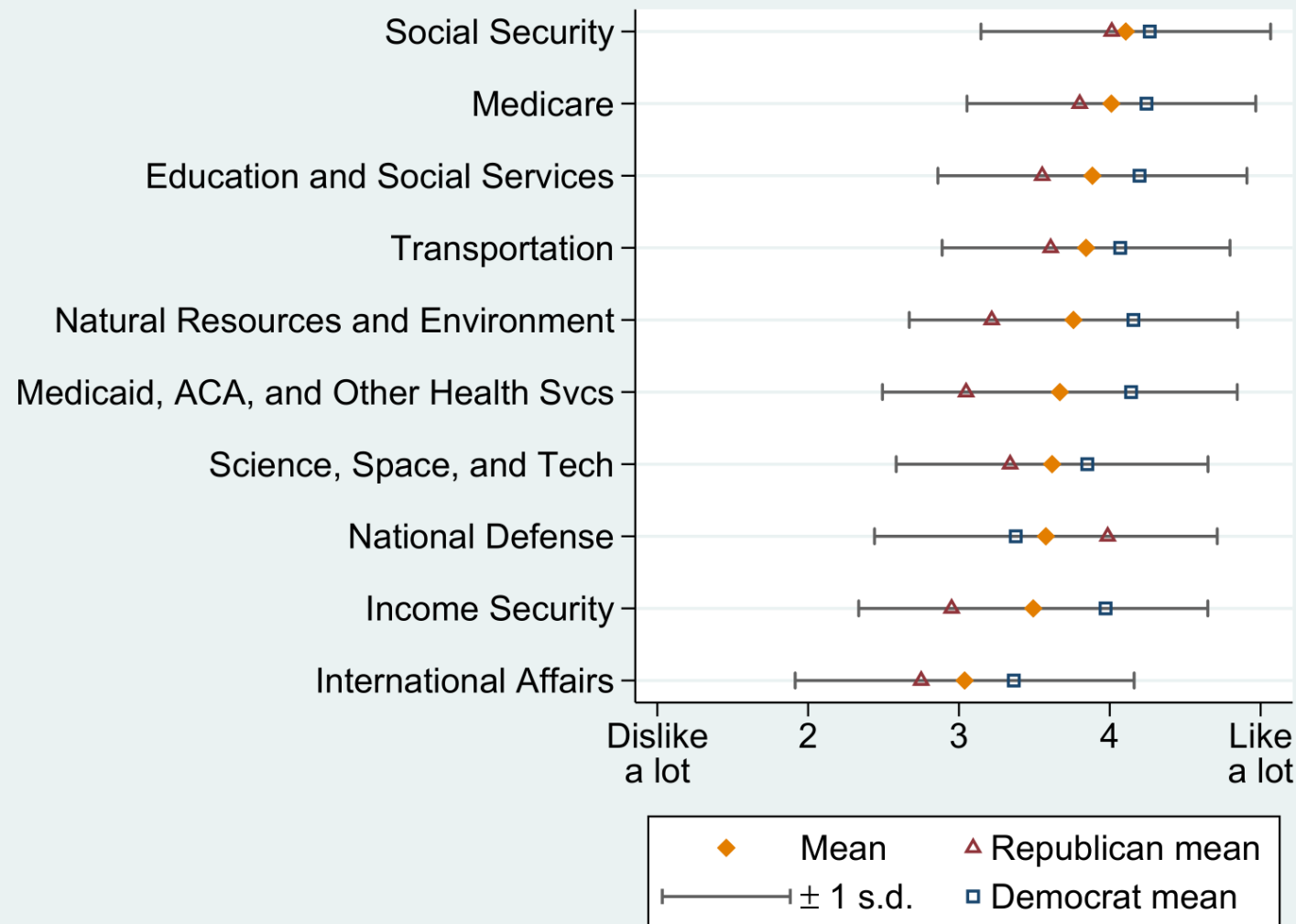
- General opinion
 - Some people say they are content with the current federal government, others say they are frustrated. Which of these best describes how you feel? [Very satisfied; Basically content; Frustrated; Angry]
 - How satisfied are you about how the federal government spends tax money? [Very satisfied; Somewhat satisfied; Somewhat dissatisfied; Very dissatisfied]
- Importance of government
 - Some people think the federal government is doing too many things that should be left to individuals and businesses. Others think that the federal government should do more. Which comes closer to your own view? [Government is doing way too much; Government is doing a little too much; Government is doing just the right amount; Government should do a bit more; Government should do a lot more]
 - The federal government is crucial for solving most of our country's problems. [7-point Likert scale]

Opinions on government expenditures (cont.)

- Trust in government
 - How much of the time do you think you can trust the federal government to do what is right? [Almost always; Most of the time; Not very often; Almost never]
 - Federal policymakers serve their own personal interests and those of large corporations. [7-point Likert scale]
- Programs benefit people like me
 - How much would you say that federal programs and policies benefit or hurt people like you? [They hurt me a lot; They hurt somewhat; They don't affect me; They benefit me somewhat; They benefit me a lot]
 - On net, people like me pay more in taxes than we receive in services from the federal government. [7-point Likert scale]
- Government revenue allocation is fair
 - Would you say that the current federal income tax system is broadly very fair, somewhat fair, somewhat unfair, or very unfair? [Very fair; Somewhat fair; Somewhat unfair; Very unfair]
 - Everything considered, federal policies are targeted towards benefiting the right people. [7-point Likert scale]

To what extent do you like or dislike that your tax money is used to fund each category?

Mean liking for each program



- Each respondent gets 5 from this list of 10
 - 2 of the 5 are the programs in pairs 9 and 10
- Match to the programs in pairs 9 and 10