Online Supplemental Information (SI) for

"A Cause to Fight"

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A Supplementary Empirics

A.1 Descriptive Statistics

Variable	Mean	SD	Complete Obs
Routh Class 1-5	3.522	1.211	1550
Routh Occupational Status 1-9	6.785	2.495	1550
Class ISCO 1-10	6.611	2.466	1550
Weekly Wage (Pounds)	78.701	68.562	1465
CP Party Member	0.501	0.5	2344
Age in 1936	28.002	6.863	2100
Woman	0.018	0.134	2344
Arrival Date (Relative to FEA)	130.645	175.087	2155
Days in Spain	270.22	196.156	1698
KIA	0.229	0.42	2344
Deserter	0.153	0.36	2344

Table A1. This table gives descriptive statistics for covariates derived from the IBMT database

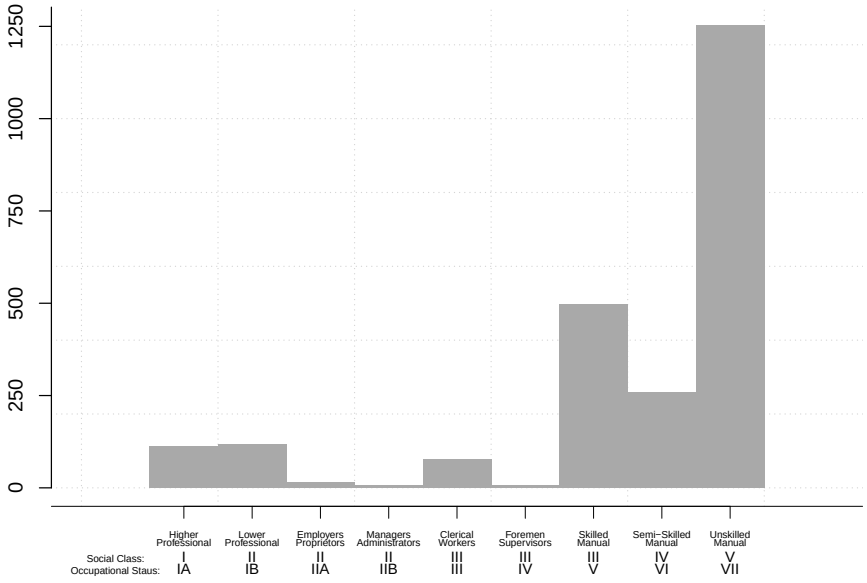


Figure A1. This figure gives the histogram of occupations as classified by Routh (2010). This gives the most disaggregated 9-point occupational classification and then provides the mapping between the 9-point scale and the 5-point scale.

	Not KIA	KIA	Total
Non-deserter	1474 (74.3%)	511 (25.7%)	1985 (100%)
Deserter	333 (92.8%)	26 (7.2%)	359 (100%)
Total	1807 (77.1%)	537 (22.9%)	2344 (100%)

Table A2. Cross-tabulation of Desertion and Killed in Action

A.2 Alternative Coding of Students and Recruits with No Occupation Listed

Communist Party Membership & Occupational Status in the British Battalion

	1.	2.	3.	4.	5.	6.
	Omit Students			*Students = Unskilled Workers*		
Routh [1-5]	-0.030	-0.038	-0.046	-0.028	-0.038	-0.045
	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)	(0.008)
Model:	OLS	OLS	OLS	OLS	OLS	OLS
Arrival Date FE	No	Yes	Yes	No	Yes	Yes
Country of Origin FE	No	No	Yes	No	No	Yes
Year of Birth FE	No	No	Yes	No	No	Yes
Gender	No	No	Yes	No	No	Yes
N	1,520	1,520	1,448	1,550	1,550	1,476
R^2	0.005	0.304	0.344	0.005	0.301	0.340

Table A3. This table replicates columns 1-3 of Table 1. In the first three columns, we simply remove students from the sample. In the last three columns, we code them as unskilled workers. Standard errors clustered by country of origin in parentheses.

Alternative Coding of Cases of No Occupation

No Occupation Coded As:	V.	IV.	III.	II.	
Routh (I-V)	-0.064	-0.053	-0.022	0.005	-0.042
	(0.010)	(0.011)	(0.011)	(0.009)	(0.009)
No Occupation					-0.117
					(0.024)
Model:	OLS	OLS	OLS	OLS	OLS
Controls					
Arrival Date FE	Yes	Yes	Yes	Yes	Yes
Country of Origin FE	Yes	Yes	Yes	Yes	Yes
Year of Birth FE	Yes	Yes	Yes	Yes	Yes
Gender	Yes	Yes	Yes	Yes	Yes
N	2,100	2,100	2,100	2,100	2,100
R^2	0.285	0.277	0.270	0.269	0.291

Table A4. This table gives the association between Class (the Five Point Routh Scale) and party membership, assigning different values (listed above each column) to those fighters for whom we have no occupation data. In the final column, instead of assigning a value to those without a documented occupation, we include a separate dummy for them. Standard errors clustered by country of origin.

A.3 Attributable Risk Associated with Party Membership

We would like to make inferences about the *attributable risk* associated with Party membership. To be precise, the target quantity is:

$$AR(Enlist|CP\ Member) = Pr(Enlist|CP\ Member) - Pr(Enlist|\neg CP\ Member)$$

A direct application of Bayes' rule allows us to write this as:

$$[\underbrace{Pr(CP\ Member|Enlist)}_{\textbf{Observed in IBMT Data}} - Pr(CP\ Member)] \times \overbrace{\frac{Pr(Enlist)}{Pr(CP\ Member)\big(1 - Pr(CP\ Member)\big)}}^{\textbf{Calculated from Aggregate Data}},$$

which is comprised of three terms. The first, $Pr(CP\ Member|Enlist)$, reflects the proportion of communists amongst those who actually enlisted. Subtracted from this is the overall proportion of Communist Party membership, $Pr(CP\ Member)$, in the population. The third term, $Pr(Enlist)$, is the proportion of enlistees in the population.

We can directly estimate $Pr(CP\ Member|Enlist)$ from the IBMT database. We need additional sources of information to estimate the remaining two terms. For party membership, we rely on the estimates of Thorpe (2000), which gives the number of Party members at various points in time between 1920 and 1945. For the total population of potential recruits, we use the Office for National Statistics Population Estimates for Great Britain, which offers population estimates by quinary age groups and by gender. The most conservative estimate using these data is from the end of the conflict when Party membership was largest. We thus treat 1939 as our baseline year for population and Party membership. We calculate $Pr(CP\ Member) = \frac{\#\text{CP Members}}{\#\text{Adults}}$ and $Pr(Enlist) = \frac{\#\text{Battalion Members}}{\#\text{Adults}}$.

Attributable Risk of Communist Party Membership on Enlistment in the British Battalion

	1.	2.	3.	4.
AR(Elist/CP Member)	0.068	0.067	0.134	0.097
Genders:	Men & Women	Men	Men	Men & Women
CP Assumptions:	·	Male CP	$\frac{1}{2}$ Male CP	·
Year:	1939	1939	1939	1937

Table A5. This table gives estimates of the attributable risk of being a Communist party member on volunteering for the International Brigades.

In Table A5 we provide estimates of the attributable risk of Party Membership. In the first column, we treat our pool of potential recruits as the 1939 adult population (15-65),[1] including both men and women. We estimate a 6.8% increase in the probability of enlisting associated with CP membership. This is relative to an overall enlistment rate in the adult population of 0.001%.

Since the vast majority of recruits were men, in the next two columns we limit our analysis to the male population of Britain. This forces us to make additional assumptions about the distribution of genders in the Communist Party membership. We present results from two extreme assumptions. First, we assume that the entirety of the Communist Party membership was male, except for the women who enlisted in Spain. Second, we assume that party membership was split evenly between men and women. This produces estimates of the attributable risk of Party membership on enlistment of 6.7% and 13.4%, respectively. Finally, in column (5), we use data from 1937, the earliest point in time when we have both data on the age distribution and party membership to estimate the attributable risk of party membership. Here, we produce an estimate of 9.7%.

[1] When we allow the population under consideration to include all of those aged 15 and above it does not meaningfully change our point estimate.

A.4 The Effect of Age

A.4.1 Age Distribution in Our Data and Potential Recruit Pool

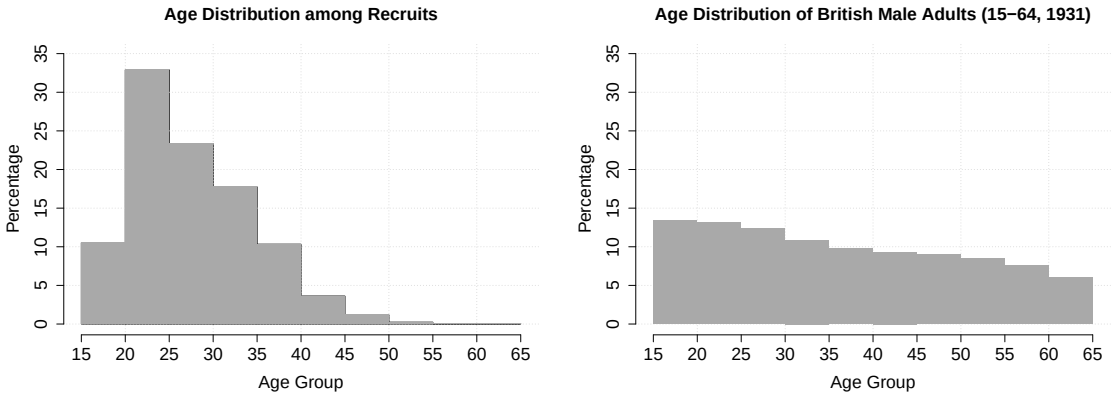


Figure A2. This figure plots the age distribution of recruits in our data and British male adults between 15 and 64 in 1931. British population data come from Mitchell (1988, 15-19). We use the 1931 census for England, Wales, and Scotland. We proximate population in 1931 for Northern Ireland by averaging over population counts in the 1926 and 1937 censuses, and for Ireland by averaging over data in 1926 and 1936. Population data for both male and female adults show similar patterns.

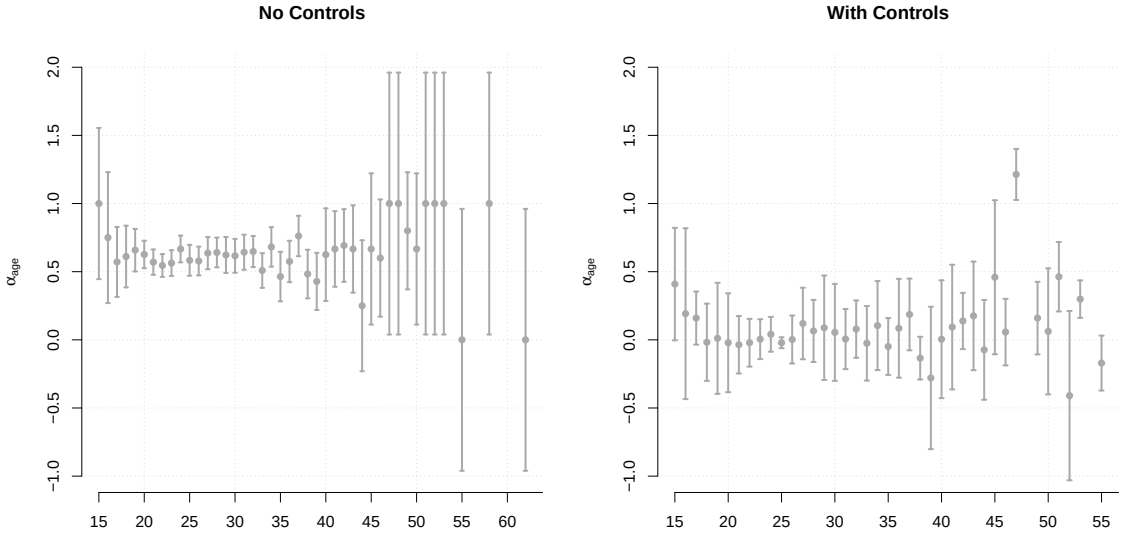
A.4.2 Age, Communist Party Membership, and Performance in Combat

Throughout our analysis in the main text, we condition on the full set of age fixed effects. To the degree that life cycle decisions (e.g. marriage and child-rearing) and the tendency for adventure and heroism are associated with age, these fixed effects can absorb much of this variation. In this section, we show that there is no obvious pattern relating age to any of our outcomes (Party membership, desertion, and being killed in action). To do this we estimate the following:

$$Outcome_i = \alpha_{age} + \boldsymbol{\beta^T X_i} + \epsilon_i \tag{3}$$

Where α_{age} are the set of age fixed effects and X is the full vector of controls (including our measure of class). Thus the estimates of α_{age} are equivalent to the nuisance parameters absorbing the (potentially confounding) effects of age. We then plot the recovered fixed effects describing the (non-parametric) association between age and each of our three outcomes both with and without the vector of controls (including our baseline measure of Class). These are given in Figures A3-A5. There is no clear pattern recovered from this

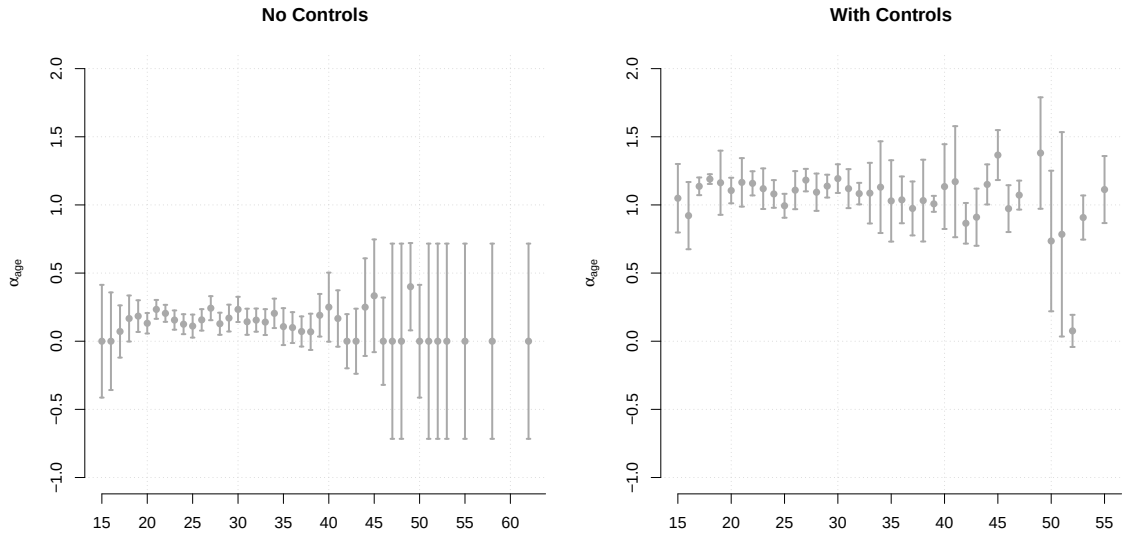
Figure A3. Age and Communist Party Membership



Notes: Figure A3 gives estimates of the regression $Communist_i = \alpha_{age} + \boldsymbol{\beta^T X_i} + \epsilon_i$ where α_{age} are the set of age fixed effects and X is the full vector of controls (including our measure of class). The left panel gives estimates without controls and the right-hand panel gives estimates with controls. Standard errors are clustered by country of origin.

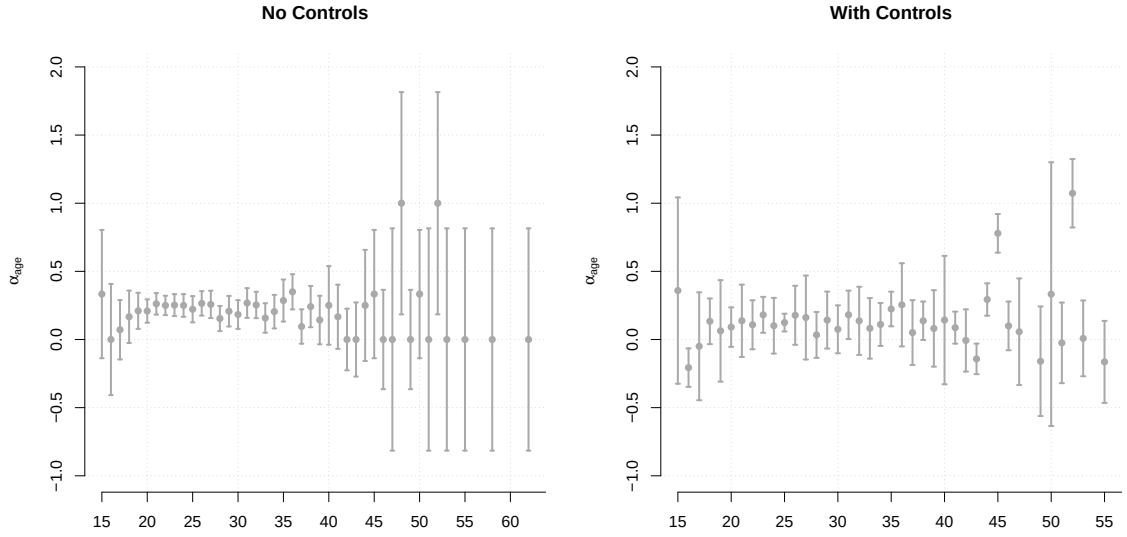
exercise, suggesting that these life cycle dynamics were not a major factor in determining the outcomes we investigate. Further, note that coefficients in the main analysis remain qualitatively unchanged with and without age fixed effects.

Figure A4. Age and Desertion



Notes: Figure A4 gives estimates of the regression $Deserter_i = \alpha_{age} + \boldsymbol{\beta^T X_i} + \epsilon_i$ where α_{age} are the set of age fixed effects and X is the full vector of controls (including our measure of class). The left panel gives estimates without controls and the right-hand panel gives estimates with controls. Standard errors are clustered by country of origin.

Figure A5. Age and KIA



Notes: Figure A5 gives estimates of the regression $KIA_i = \alpha_{age} + \boldsymbol{\beta^T X_i} + \epsilon_i$ where α_{age} are the set of age fixed effects and X is the full vector of controls (including our measure of class). The left panel gives estimates without controls and the right-hand panel gives estimates with controls. Standard errors are clustered by country of origin.

A.4.3 Main Results with Sample that Could Not Have Participated in WWI

Main results w/ sample that could not have participated in WWI

	1.	2.	3.
Outcome:	Communist Party	Deserter	KIA
Class	-0.041		
	(0.009)		
Communist Party		-0.097	0.074
		(0.016)	(0.030)
Model:	OLS	OLS	OLS
Arrival Date FE	Yes	Yes	Yes
Year of Birth FE	Yes	Yes	Yes
Country of Origin FE	Yes	Yes	Yes
Gender	Yes	Yes	Yes
N	1,246	1,723	1,723
R^2	0.349	0.219	0.211

Table A6. This Table reproduces the main results, sub-setting the data to individuals less than 18 in 1919, e.g. those who were too young to have (legally) fought in World War I. Standard errors clustered by country of origin in parentheses.

A.5 Party Membership and Performance in Combat

A.5.1 Competing Risks Survival Analysis

Competing Risk Regression Impact of CP Membership on Duration of Service and Risk of Death

	1.		2.		3.	
	Depart	*KIA*	*Depart*	*KIA*	*Depart*	*KIA*
Communist	-0.404	0.165	-0.289	0.202	-0.346	0.207
	(0.086)	(0.091)	(0.102)	(0.105)	(0.090)	(0.096)
Arrival Date FE	No		Yes		No	
Country of Origin FE	No		No		Yes	
Year of Birth FE	No		No		Yes	
Gender	No		No		Yes	

Table A7. This table gives the competing risk survival estimates of the association between Communist party membership and time to two competing outcomes, departure from Spain and being killed in action.

We consider the simultaneous determination of desertion and being killed in combat through competing risk survival analysis. Time to failure is determined by the entry date in Spain and then the date a volunteer left Spain (for whatever reason) and the date at which a recruit was killed. That is, we have two mutually exclusive failure times: 1.) departure from Spain and 2.) being killed. The former is partially determined by desertion but also could be driven by other factors that we cannot completely observe. In other words, we do not observe the exact date of desertion but do observe the date of departure. We treat those who were stood down at the end of the conflict as censored. Results from this exercise are presented in Table A7. As in the main analysis, we find that being a Party member is associated with an increased risk of failure via death in combat and decreases the associated risk of departing Spain. The results from column 1 (the model with no covariates) are presented in Figure A6. The first region (defined by the dashed lines) gives the cumulative incidence of being killed in action. We see that this is always greater for members of the Communist Party. The second region, between the dashed and solid lines, gives the cumulative incidence associated with departing Spain. Here, we see, again, that Communists are less likely to depart Spain, with the non-Communists (black) plotted above the Communists (red). The third region (above the solid lines) is those who are censored due to being stood down.

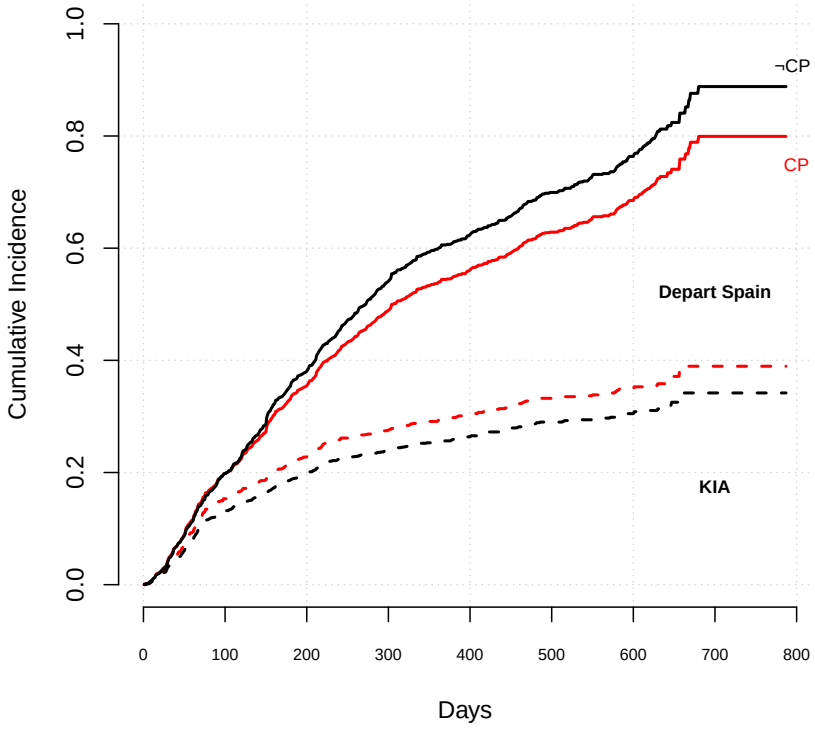


Figure A6. Results derived from column 1 of Table A7.

A.5.2 Communist Networks and Performance

Political ideology can influence individual choices by affecting their social interactions and how they bond with peers (Orsini, 2012). Ideology guides the decision to associate with or distance from certain groups based on shared or differing political beliefs. Shared communist ideology and prior political networks can enhance interpersonal bonds, build trust, and foster norms of cooperation among combatants, which have been shown to impact combat decisions, such as desertion (McLauchlin, 2020). As such, peer pressure or communist social networks might be operative when recruits decide how much effort to exert in combat. To account for this possibility, we control for the average percentage of communist party members in the battalion over each recruit's time in Spain. Table A8 shows that this variable positively correlates with desertion and negatively correlates with being killed in action, but the coefficients are insignificant at any conventional significance level. Our main results concerning communist party recruits remain qualitatively unchanged after controlling for communist social networks. Similarly, in Table A9 we control for the percentage of communist party members from each member's country of origin. The social network measure

significantly correlates with desertion but not with being killed in action. Again, our main results remain qualitatively unchanged.

Average Party Membership within the Brigade and Effort

	1.	2.	3.	4.
	Deserter		*KIA*	
Communist	-0.113	-0.102	0.067	0.040
	(0.010)	(0.009)	(0.025)	(0.021)
Mean Communist	0.012	0.005	-0.043	-0.040
	(0.006)	(0.004)	(0.025)	(0.023)
KIA		-0.159		
		(0.027)		
Deserter				-0.238
				(0.047)
Model:	OLS	OLS	OLS	OLS
N	1,623	1,623	1,623	1,623
R^2	0.230	0.259	0.276	0.304
Controls				
Arrival Date FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
Country of Origin FE	Yes	Yes	Yes	Yes
Year of Birth FE	Yes	Yes	Yes	Yes
Gender	Yes	Yes	Yes	Yes

Table A8. This table gives the association between average party membership (defined over a fighter's time in Spain) and our measures of effort. Standard errors clustered by country of origin.

Average Party Membership within Country of Origin and Effort

	1.	2.	3.	4.
	Deserter		*KIA*	
Communist	-0.088	-0.077	0.071	0.051
	(0.014)	(0.012)	(0.026)	(0.023)
Mean Communist in	-0.002	-0.002	-0.002	-0.002
Country of Origin	(0.0007)	(0.0007)	(0.001)	(0.001)
KIA		-0.161		
		(0.027)		
Deserter				-0.218
				(0.041)
Model:	OLS	OLS	OLS	OLS
N	2,100	2,100	2,100	2,100
R^2	0.196	0.225	0.177	0.206
Controls				
Arrival Date FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
Country of Origin FE	Yes	Yes	Yes	Yes
Year of Birth FE	Yes	Yes	Yes	Yes
Gender	Yes	Yes	Yes	Yes

Table A9. This table gives the association between average party membership within each member's country of origin and our measures of effort. Standard errors clustered by country of origin.

The Effect of Party Membership on Effort Varying by Arrival Date

	Deserter		*KIA*	
	1.	2.	3.	4.
Communist	-0.092	-0.083	0.059	0.039
	(0.026)	(0.025)	(0.027)	(0.026)
Communist ×	0.003	0.006	0.023	0.024
Arrival Date	(0.042)	(0.044)	(0.026)	(0.031)
KIA		-0.165		
		(0.027)		
Deserter				-0.221
				(0.041)
Controls				
Country of Origin FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
Arrival FE	Yes	Yes	Yes	Yes
Gender FE	Yes	Yes	Yes	Yes
N	2,037	2,037	2,037	2,037
R^2	0.205	0.234	0.193	0.222

Table A10. This table reproduces our results on desertion and KIA, allowing the relationship between Communist Party membership to vary with the date of entry into Spain.

A.6 Perturbing the FEA Announcement Date

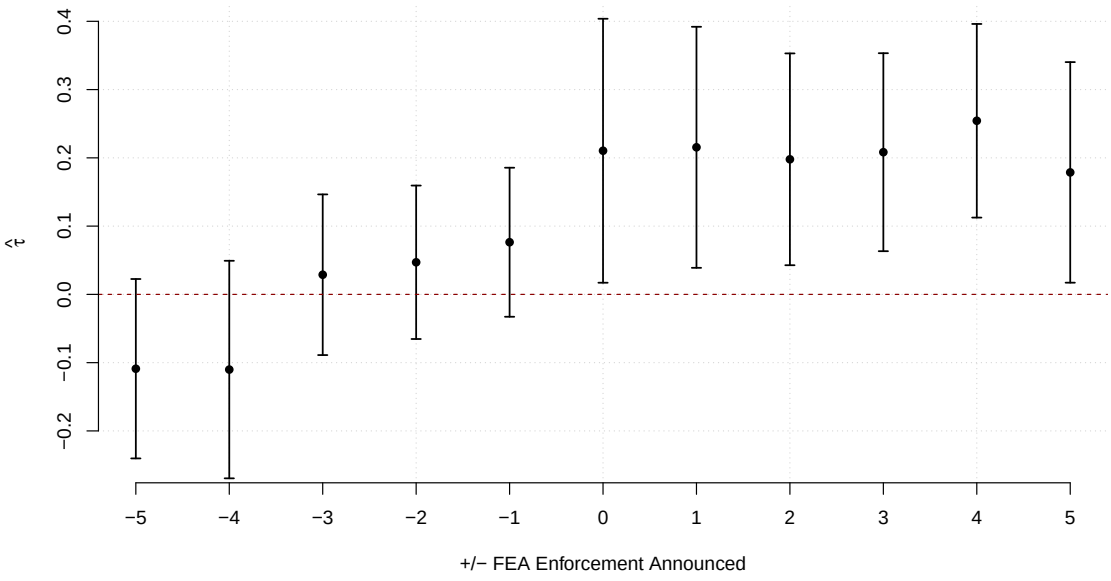


Figure A7. This figure gives results where we replicate our baseline estimate from Table 4 (Column 1, Robust Bias-Corrected) and perturb the cutoff (the announcement date) by five days before and after the actual notice of FEA enforcement.

A.7 Controlling for Class and Occupation

An alternative explanation of the correlation between class/occupation and party membership is that higher-status professionals have more exposure to communist ideology via education. Higher-status professionals and better-educated people also have more access to inherited wealth or other assets, allowing them to enlist and pursue their political ideals free of financial concerns. We argue that this is unlikely. First, assuming a similar risk of death, more inherited wealth indicates higher opportunity costs. Moreover, little evidence suggests that wealthier volunteers received financial support from their families back home. There was also a severe lack of food and material supplies in the republican government-controlled part of Spain, especially in the mid to later stages of the war. Even if they had money, there was virtually nothing to spend on.

Second, a comparison with the population data suggests that these volunteers did not tend to come from better socioeconomic backgrounds relative to the recruitment pool. Ac-

cording to Routh (2010, 4-5), professionals[2] accounted for 14.96% of the occupied population in Great Britain in the 1931 census. In our data, the vast majority (86.7%, 91.2% if counting the unemployed as working class) of all occupied recruits came from the working class, and only 13.3% (8.8% if counting the unemployed as working class) were professionals. The percentages of working-class people among all occupied communist and non-communist recruits are 85.7% and 88.2%, respectively (88.9% and 93.6% if counting the unemployed as working class).

Third, additional empirical results on volunteers performance in combat and their sensitivity to change in enlistment costs are consistent with our theory, but they cannot be explained by socioeconomic/occupational status. In particular, we replicate the analysis for desertion, being killed in action, and the effect of FEA enforcement by including fixed effects for class (Rouths 5-point scale) or the full set of occupations. Our results persist, as shown in Table A11.

[2] We count Class I and II of Routh's 5-point scale measure combined as professionals. Alternative measures (for example, counting IA and IB as professionals in Routh's 9-point scale measure) produce the same conclusion that volunteers did not tend to come from better socioeconomic backgrounds relative to the recruitment pool.

Outcome:	*Deserter*		*KIA*	
	(1)	(2)	(3)	(4)
Communist	-0.076	-0.069	0.049	0.046
	(0.014)	(0.021)	(0.025)	(0.021)
KIA	-0.164	-0.167		
	(0.025)	(0.037)		
Deserter			-0.220	-0.219
			(0.038)	(0.058)
Model:	OLS	OLS	OLS	OLS
N	2,100	2,100	2,100	2,100
R^2	0.24	0.46	0.23	0.47

Outcome:	*Communist Party Member*			
	Conventional		*Bias-Corrected Robust*	
FEA Enforcement	0.280	0.126	0.305	0.132
	(0.063)	(0.061)	(0.071)	(0.073)
Bandwidth	21.790	20.157	21.790	20.157
	488/203	447/201	488/203	447/201
Controls				
Arrival Date FE	Yes	Yes	Yes	Yes
Country of Origin FE	Yes	Yes	Yes	Yes
Year of Birth FE	Yes	Yes	Yes	Yes
Gender	Yes	Yes	Yes	Yes
Class FE	Yes	No	Yes	No
Occupation FE	No	Yes	No	Yes

Table A11. This table reproduces our results on desertion, being killed in action, and the effect of FEA enforcement including fixed effects for class (Routh's 5-Point Scale) and the the full set of occupations listed in our data.

A.8 Other Political Affiliations

The Effect of FEA Enforcement on Other Left Parties

	1.	2.	3.	4.	5.	6.
Outcome:		*Other Left Party*			*Labour Party*	
Conventional	-0.033	-0.135	-0.213	-0.068	-0.101	-0.172
	(0.019)	(0.037)	(0.050)	(0.019)	(0.034)	(0.038)
Bandwith	36.263	26.526	28.599	28.808	31.907	28.557
N (L/R)	593/279	285/128	277/147	537/243	280/121	261/124
Robust	-0.052	-0.194	-0.257	-0.083	-0.135	-0.209
	(0.022)	(0.046)	(0.061)	(0.023)	(0.045)	(0.047)
Bandwith	81.463	63.131	75.286	58.954	59.181	55.712
N (L/R)	677/399	335/185	377/227	647/364	312/159	339/193
Sample:	Full	No Communists	Communist & Other Left	Full	Non-partisans Labour	Communists & Labour

Table A12. This table gives regression discontinuity estimates (optimal bandwidth estimates) of the effect of FEA enforcement on other left party membership (columns 1-3) and Labour party membership, a subset of all other left party members (columns 4-6). These are estimated on our full data (columns 1 and 4), excluding Communists (column 2), including only Communists and other left parties (column 3), including only Labour and non-partisans (column 5), and including only Communists and Labour (column 6). Standard errors clustered by country of origin. However, the results are not robust —the coefficients either become insignificant or flip signs if we halve or double the optimal bandwidth (results not reported).

A.9 Density Discontinuity Estimates

In the first column of Table A14, we present our estimate of the discontinuity in the density of volunteers around the announcement of the FEA's enforcement using the full sample and the optimal bandwidth as selected by the procedure of Cattaneo, Jansson and Ma (2020). As expected, we find that the FEA's announcement was associated with a statistically significant reduction in the overall number of volunteers. The estimated discontinuity is presented graphically in the upper panel of Figure A8.

In our next set of results, we present estimates of the density discontinuity for each group (Communist Party members and non-party members) separately. First (columns 2 & 3), we

Communist, Left and Labour Membership's Association With Effort

	1.	2.	3.	4.
	KIA		*Deserter*	
Communist	0.053	0.051	-0.095	-0.087
	(0.023)	(0.023)	(0.011)	(0.013)
Other Left	0.041		-0.109	
	(0.029)		(0.040)	
Labour		0.042		-0.091
		(0.047)		(0.036)
Deserter	-0.220	-0.220		
	(0.039)	(0.038)		
KIA			-0.163	-0.164
			(0.026)	(0.025)
F-Test				
Communist=Other/Labour	0.095	0.021	0.143	0.022
p-value	(0.758)	(0.884)	(0.706)	(0.883)
Model:	OLS	OLS	OLS	OLS
N	2,100	2,100	2,100	2,100
Controls				
Arrival Date FE	Yes	Yes	Yes	Yes
Age FE	Yes	Yes	Yes	Yes
Country of Origin FE	Yes	Yes	Yes	Yes
Year of Birth FE	Yes	Yes	Yes	Yes
Gender	Yes	Yes	Yes	Yes

Table A13. This table gives a comparison of the associations between being a Communist party member and being a Labour or other left party member on our measures of effort. Standard errors clustered by country of origin in parentheses.

Density Discontinuity Estimates

	Full Sample	CP Members	¬ CP Members	CP Members	¬ CP Members
	1.	2.	3.	4.	5.
CJM Test Stat	-6.898	-1.178	-8.024	-0.770	-5.249
p-value	(0.000)	(0.239)	(0.000)	(0.441)	(0.000)
Density Discontinuity:	-0.015	-0.003	-0.030	-0.001	-0.015
Difference:		0.027		0.013	
		(0.017,0.037)		(0.006,0.021)	
Bandwidth	31	31	31	48	44
N (L/R)	547/275	250/131	297/144	316/181	327/177

Table A14. This table gives estimates of the density discontinuity estimates of Cattaneo, Jansson and Ma (2024) around the FEA enforcement announcement in the top row. Differences between Communist Party and non-party members in the discontinuity estimates are given in the second row. Bootstrap 95% confidence interval below in parentheses.

use the optimal bandwidth as derived from the full sample (column 1) across both groups. Second (columns 4 & 5), we separately estimate the optimal bandwidth for each group. These results are presented graphically in the lower panel of Figure A8. Regardless, we find that there is no statistically significant density discontinuity in the sample of party members. By contrast, in the sample of non-party members, we find a statistically significant and negative discontinuity. Taking the difference between the estimated discontinuities, we obtain a positive difference, meaning that party members exhibited a smaller decrease in enlistment. Furthermore, we can reject the null hypothesis that the change in enlistment around the announcement of the FEA was the same across party members and non-members.[3]

One concern is that the decrease in non-communist recruits was due to changes in the recruitment network instead of individual responses to the increased cost of enlistment. We argue that this is unlikely. First, the British Communist Party recruited in the open prior to the FEA announcement, thus anyone interested could in principle know about the opportunity. Those who paid little attention to the war were likely to be ideologically unaligned and therefore would not have enlisted anyway. Second, after the announcement the recruitment went underground but it is unlikely that the network of individuals that knew about the opportunity or that could be reached out for recruitment drastically changed within days of the announcement. Yet we observe a significant drop in non-communist recruits right after the announcement, alleviating the concern that this was primarily driven by changes in the recruitment network.

[3] We obtain measures of uncertainty for the difference in discontinuities through a non-parametric bootstrap.

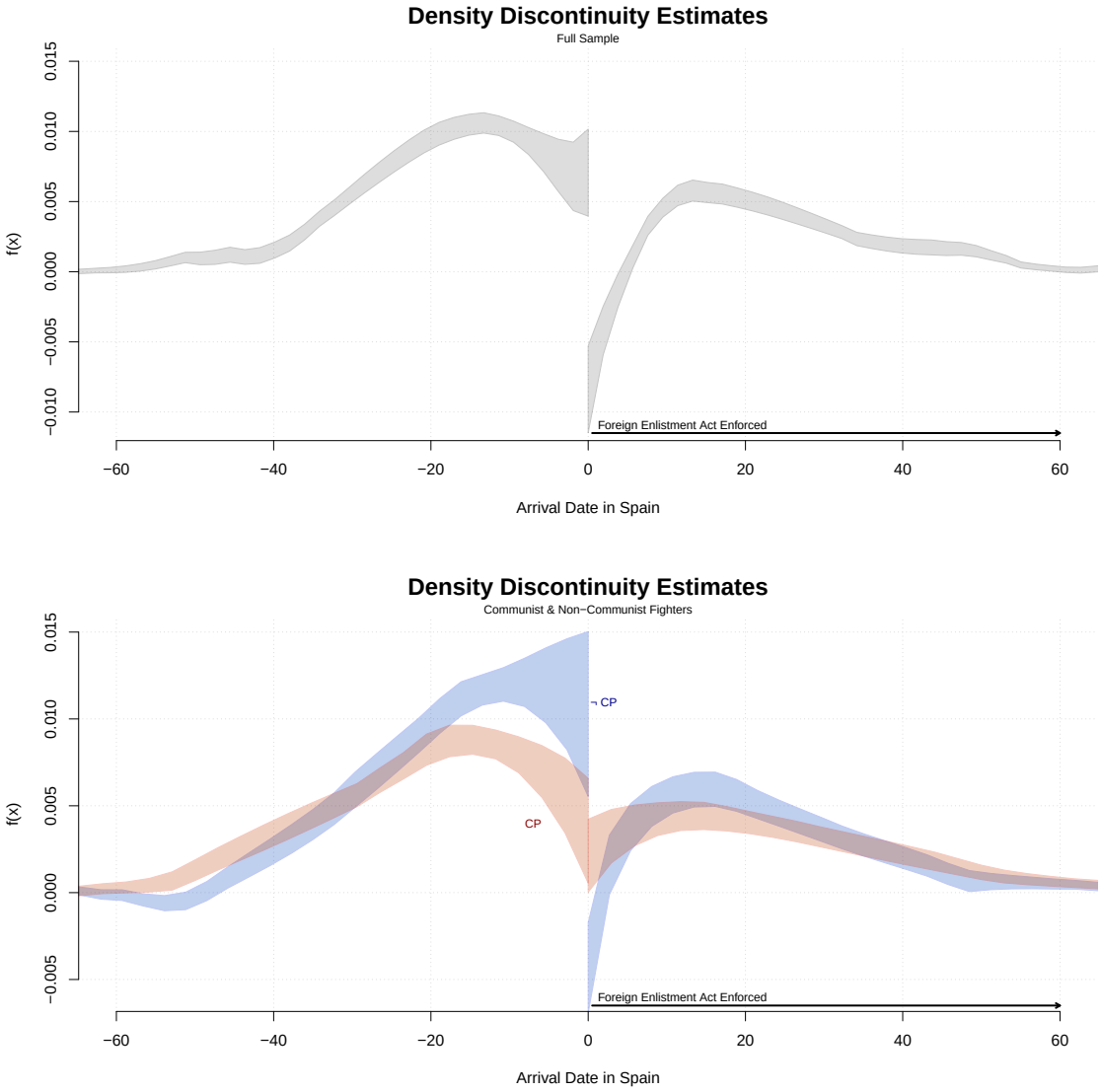


Figure A8. This figure gives the confidence regions of the density discontinuities from the first column (top) and the second and third columns (bottom) of Table A14.

B Proofs of Formal Results

Proof of Proposition 1. Recall that $r^h(e^*_{1,h}, 1)$ is the payoff the most ideologically aligned individual receives for exerting optimal effort in a high-risk task, which is higher than his payoff for optimal effort in a low-risk task. If $w > r^h(e^*_{1,h}, 1) + w_s - c$, then the opportunity cost is so large that he cannot obtain more from enlisting regardless of the task assignment even if his ideology aligns perfectly with the group Thus, all types stay at home in every PBE. □

Proof of Proposition 2. G receives 1 for assigning a low-risk task regardless of ideology and effort. The group's payoff for assigning a high-risk task is a little more involved. The conditional pdf of i given w is

$$f(i|w) = \frac{f(w,i)}{\int_o^\infty f(w,i)dw},$$

and the truncated conditional pdf of i given w such that $i \geq i' \in [0,1]$ is

$$f(i|w, i \geq i') = \frac{f(w,i)}{\int_o^\infty f(w,i)dw} \cdot \frac{1}{\int_{i'}^1 \frac{f(w,i)}{\int_0^\infty f(w,i)dw}di}.$$

Thus, the group's expected utility from assigning a recruit a high-risk task if all individuals with $i > i'$ join and all individuals with $i < i'$ stay at home is

$$\int_{i'}^1 v(e^*_{i,h}, i) f(i|w, i \geq i')di = \frac{\int_{i'}^1 v(e^*_{i,h}, i)\frac{f(w,i)}{\int_0^\infty f(w,i)dw}di}{\int_{i'}^1 \frac{f(w,i)}{\int_0^\infty f(w,i)dw}di}. \tag{B.1}$$

The expression is strictly increasing in i' because $v(e^*_{i,h}, i)$ increase in i and strictly increases in $e^*_{i,h}$, and $e_{i,h}$ and $e^*_{i,h}$ both strictly increase in i. Also, $i' = 0$ yields

$$\int_0^1 v(e^*_{i,h}, i)\frac{f(w,i)}{\int_0^1 f(w,i)dw}di,$$

which, by assumption, is smaller than 1. We also have $v(e^*_{1,h}, 1) > 1$. The above analysis ensures that, for all w, a unique solution $i^\dagger(w)$ exists to

$$h(w, i') = \frac{\int_{i'}^1 v(e^*_{i,h}, i)\frac{f(w,i)}{\int_0^\infty f(w,i)dw}di}{\int_{i'}^1 \frac{f(w,i)}{\int_0^\infty f(w,i)dw}di} = 1. \tag{B.2}$$

The Implicit Function Theorem ensures that $i^\dagger(w)$ is a smooth function of w.

Now consider $g^l(w) = r^l\big(e^*_{i^\dagger(w),l}, i^\dagger(w)\big) - w + w_s - c$, a smooth function of w. Let $\tilde{w}$ denote $r^h(e^*_{1,h}, 1) + w_s - c$. First note that $g^l(\tilde{w}) = r^l\big(e^*_{i^\dagger(\tilde{w}),l}, i^\dagger(\tilde{w})\big) - r^h(e^*_{1,h}, 1) < 0$. We assume that $g^l(0) = r^l\big(e^*_{i^\dagger(0),l}, i^\dagger(0)\big) + w_s - c > 0$. Note that the individual with wage $w = 0$ and ideology $i = i^\dagger(0)$ makes G indifferent between assigning a high-risk and assigning a low-risk task if all individuals with $i > i^\dagger(0)$ join and all individuals with $i < i^\dagger(0)$ do not join. Substantively, the assumption means that this individual actually prefers to join. This is a reasonable assumption because historical records show that the Spanish government did run into the problem of jobless individuals joining for opportunist reasons. The above analysis implies that there exists a $\underline{w} \in (0, \tilde{w})$ such that for all $w < \underline{w}$, $g^l(w) > 0$, equivalent with $r^l\big(e^*_{i^\dagger(w),l}, i^\dagger(w)\big) + w_s - c > w$.

Now suppose $w < \underline{w}$. All types with i such that $r^l(e^*_{i,l}, i) + w_s - c > w$ prefer to join and receive at least $r^l(e^*_{i,l}, i) + w_s - c$. Since $w < \underline{w}$, we know that the indifference type is smaller than $i^\dagger(w)$. Thus, G prefers to assign a low-risk task. Note that at this point we do not know yet what individuals with i such that $r^l(e^*_{i,l}, i) + w_s - c < w$ will do. However, any additional recruit with a less aligned ideology will only reduce G's expected utility of assigning high-risk tasks, which is already below 1. Now, knowing that they will be assigned a low-risk task if they join and retain w if they stay at home, all individuals with i such that $r^l(e^*_{i,l}, i) + w_s - c < w$ choose not to join.

□

Proof of Proposition 3. Recall that $i^\dagger(w)$ is the unique solution to equation (B.2). Now consider $g^h(w) = r^h\big(e^*_{i^\dagger(w),h}, i^\dagger(w)\big) - w + w_s - c$, a smooth function of w. First note that $g^h(\tilde{w}) = r^h\big(e^*_{i^\dagger(\tilde{w}),h}, i^\dagger(\tilde{w})\big) - r^h(e^*_{1,h}, 1) < 0$. We also have $g^h(0) = r^h\big(e^*_{i^\dagger(0),h}, i^\dagger(0)\big) + w_s - c > r^l\big(e^*_{i^\dagger(0),l}, i^\dagger(0)\big) + w_s - c > 0$. Thus, there exists a $\overline{w} \in (\underline{w}, \tilde{w})$ such that for all $w > \overline{w}$, $g^h(w) < 0$, equivalent with $r^h\big(e^*_{i^\dagger(w),h}, i^\dagger(w)\big) + w_s - c < w$.

Now suppose $w > \overline{w}$ and we show that no player has a profitable deviation. Since G assigns a high-risk task with certainty, all types with $r^h(e^*_{i,h}, i) + w_s - c > w$ will join and all types with $r^h(e^*_{i,h}, i) + w_s - c < w$ will stay at home. Deviating only yields a lower payoff. Since $r^h(e^*_{i,h}, i) + w_s - c > w > r^h\big(e^*_{i^\dagger(w),h}, i^\dagger(w)\big) + w_s - c$, we know that the ideologically least aligned recruit is more aligned than $i^\dagger(w)$. This implies that G's expected utility from assigning a high-risk task is larger than 1, so deviating to assign a low-risk task or mix in any way is not profitable.

However, if $w \in \big(r^l(e^*_{1,l}, 1) + w_s - c, r^h(e^*_{1,h}, 1) + w_s - c\big)$, multiple equilibria exist. In addition to the one described above, there exist equilibria such that G takes an off-the-equilibrium-path belief that the recruit's expected ideology is sufficiently low and therefore assigns a low-risk task. All types choose to stay at home because the payoff from low-risk

tasks is lower than w for all $i \in [0,1]$: $r^l(e^*_{i,l}, i) + w_s - c \leq r^l(e^*_{1,l}, 1) + w_s - c < w$. We apply the Intuitive Criterion refinement proposed by Cho and Kreps (1987) to rule out such equilibria. Intuitive criterion requires that off-the-equilibrium-path beliefs put 0 probability on types that could not gain from the deviation if the receiver responds optimally to the deviation under some beliefs. In this case, all types prefer not to join if they are signed a low-risk task with certainty. It is also shown that for all $w > \overline{w}$, $r^h\big(e^*_{i^\dagger(w),h}, i^\dagger(w)\big) + w_s - c < w$. Thus, all types with $i < i^\dagger(w)$ cannot possibly gain by joining regardless of task assignment. The intuitive criterion refinement requires that G puts 0 probability on believing that any deviation comes from these types. Thus, G should assign a high-risk task if it observes anyone joining, ruling out the type of equilibria just described.

□

Proof of Proposition 4. The proof of Case 1 is similar to that of Proposition 2 and the proof of Case 2 is similar to that of Proposition 3, without the need to invoke the refinement. Therefore, both are omitted.

For Case 3, suppose that $w \in \big(r^l(e^*_{i^\dagger(w),l}, i^\dagger(w)) + w_s - c, r^h(e^*_{i^\dagger(w),h}, i^\dagger(w)) + w_s - c\big)$. We show that G cannot play pure strategies. First, it cannot be that G assigns all recruits to high-risk tasks. If it did, then all types i' with $r^h(e^*_{i',h}, i') + w_s - c > w$ will join. But since $w < r^h(e^*_{i^\dagger(w),h}, i^\dagger(w)) + w_s - c$, we have $\int_{i'}^1 v(e^*_{i,h}, i) f(i|w, i \geq i')di < 1$. Thus, G can profitably deviate to assign the recruit low-risk tasks. Second, it cannot assign all types low-risk tasks. If it did, then all types i' with $r^l(e^*_{i',l}, i') + w_s - c > w$ will join. However, since $w > r^l(e^*_{i^\dagger(w),l}, i^\dagger(w)) + w_s - c$, $\int_{i'}^1 (e^*_{i,h}, i) f(i|w, i \geq i')di > 1$. Thus, G has a profitable deviation to assign the recruit a high-risk task. Consequently, G must mix. For G to mix, it must be indifferent between assigning high-risk and low-risk tasks, suggesting that all types with $i > i^\dagger(w)$ join and all types with $i < i^\dagger(w)$ stay at home.

Let σ be the probability of a high-risk task. Type $i^\dagger(w)$ must be indifferent between joining and not joining:

$$\sigma \cdot [r^h(e^*_{i^\dagger(w),h}, i^\dagger(w)) + w_s - c] + (1-\sigma) \cdot [r^l(e^*_{i^\dagger(w),l}, i^\dagger(w)) + w_s - c] = w$$
$$\Rightarrow \sigma = \frac{w - w_s + c - r^l\big(e^*_{i^\dagger(w),l}, i^\dagger(w)\big)}{r^h\big(e^*_{i^\dagger(w),h}, i^\dagger(w)\big) - r^l\big(e^*_{i^\dagger(w),l}, i^\dagger(w)\big)}.$$

□

Proof of Proposition 5. Suppose that $p > i^\dagger(w)$ for all w. Given any w, if all types $i \in [p,1]$ join, $\int_p^1 v(e^*_{i,h}, i) f(i|w, i \geq p)di > 1$ so that G wants to assign a high-risk task. Knowing this, all types with i such that $r^h(e^*_{i,h}, i) + w_s - c > w$ will join and all types with i such that $r^h(e^*_{i,h}, i) + w_s - c < w$ will not join, and no type can profitably deviate. □

Proposition B.1. *The ideology level of the least aligned communist recruit weakly increases in w. The ideology level of the least aligned non-communist recruit strictly increases in w.*

Proof of Proposition B.1. We begin by examining the case of communist recruits. Consider $g^h(w,i) = r^h(e^*_{i,h}, i) + w_s - c - w$. First note that $g^h(w,i)$ strictly increases in i. Second, we know that $r^h(e^*_{1,h}, 1) + w_s - c = \tilde{w} > w$, implying that $g^h(w,1) > 0$ for all $w \in (0, \tilde{w})$. Third, given any w, if $g^h(w,p) = r^h(e^*_{p,h}, p) + w_s - c - w > 0$, then $g^h(w,i) > 0$ for all $i \in [p,1]$, in which case, all types prefer to join. If by contrast $g^h(w,p) = r^h(e^*_{p,h}, p) + w_s - c - w < 0$, then there exists $i^*_h(w) \in (p,1)$ such that all individuals with $i < i^*_h(w)$ will stay at home and all individuals with $i > i^*_h(w)$ will join. Applying the Implicit Function Theorem yields that

$$\frac{di^*_h(w)}{dw} = -\frac{\frac{\partial g^h(w,i^*_h)}{\partial w}}{\frac{\partial g^h(w,i)}{\partial i}\Big|_{i^*_h}} = \frac{1}{\frac{\partial g^h(w,i)}{\partial i}\Big|_{i^*_h}} > 0,$$

implying that the ideology of the least ideologically aligned recruits increases as w increases. There are two cases. **Case 1**, $i^*_h(0) < p$. We know that $i^*_h(\tilde{w}) = 1 > p$. That is, at $\tilde{w}$, only the most extreme individual $i = 1$ is willing to join even for a high-risk task. Since $i^*_h(w)$ strictly increases in w, there exists $w^* \in (0, \tilde{w})$ such that for all $w < w^*$, $i^*_h(w) < p$ and for all $w > w^*$, $i^*_h(w) > p$. In this case, for all $w < w^*$, all types join with $i = p$ being the least ideologically aligned type, and for all $w > w^*$, only a fraction of types with $i > i^*_h(w)$ join with $i = i^*_h(w)$ being the least aligned type. Since $i^*_h(w)$ strictly increases in w, over the entire range, the ideology of the least aligned recruit weakly increases. **Case 2**, $i^*_h(0) > p$. In this case, $i^*_h(w) > p$ for all $w \in (0, \tilde{w})$. Thus, only a fraction of types with $i > i^*_h(w)$ join with $i = i^*_h(w)$ being the least aligned type. And in this case, $i^*_h(w)$ strictly increases in w.

We now turn to non-communist recruits. It is straightforward to see that the ideology of the least aligned recruit is continuous in w. Thus, only piecewise increase is left to prove. First, for $w < \underline{w}$, all types i with $r^l(e^*_{i,l}, i) + w_s - c > w$ will join. Consider $g^l(w,i) = r^l(e^*_{i,l}, i) + w_s - c - w$, which strictly increases in i. Similar to the proof in the case of communist recruits, there exists $i^*_l(w) \in (0,1)$ such that all types with $i < i^*_l(w)$ stay at home and all types with $i > i^*_l(w)$ join. Applying the Implicit Function Theorem yields

$$\frac{di^*_l(w)}{dw} = -\frac{\frac{\partial g^l(w,i^*_l)}{\partial w}}{\frac{\partial g^l(w,i)}{\partial i}\Big|_{i^*_l}} = \frac{1}{\frac{\partial g^l(w,i)}{\partial i}\Big|_{i^*_l}} > 0,$$

as required.

Second, for $w \in (\overline{w}, \tilde{w})$, all types i with $r^h(e^*_{i,h}, i) + w_s - c > w$ will join. The proof is similar to that of **Case 2** of communist recruits and therefore is omitted.

Third, for $w \in (\underline{w}, \overline{w})$, the proofs of the first two cases are omitted because the first case is the same as $w < \underline{w}$ and the second case is the same as $w \in (\overline{w}, \tilde{w})$. We look at **Case 3** where $w \in \big(r^l(e^*_{i^\dagger(w),l}, i^\dagger(w)) + w_s - c, r^h(e^*_{i^\dagger(w),h}, i^\dagger(w)) + w_s - c\big)$, and all types i with $i > i^\dagger(w)$ will join. Applying the Implicit Function theorem yields that

$$\frac{di^\dagger(w)}{dw} = -\frac{\frac{\partial h(w,i^\dagger)}{\partial w}}{\frac{\partial h(w,i^\dagger)}{\partial i^\dagger}} > 0,$$

because $\frac{\partial h(w,i^\dagger)}{\partial i^\dagger} > 0$ and $\frac{\partial h(w,i^\dagger)}{\partial w} < 0$. The former holds because $h(w, i')$ in equation (B.2) strictly increases in i'. To show that the latter holds, recall that $v(e^*_{i,h}, i)$ is an increasing concave function of i, and for all $w < w'$, $f(i|w, i \geq i')$ first-order stochastically dominates $f(i|w', i \geq i')$. This means that for all $w < w'$, $\int_{i'}^1 v(e^*_{i,h}, i) f(i|w, i \geq i')di > \int_{i'}^1 v(e^*_{i,h}, i) f(i|w', i \geq i')di$. Thus, $h(w, i^\dagger)$ decreases in w.

□

The proof of Proposition B.1 establishes results that are useful for proving the remaining comparative statics that we will test empirically.

Proposition B.2. *Suppose $w^* \geq \overline{w}$[4]. The share of communists among enlisted individuals increases as w increases.*

Proof of Proposition B.2. Suppose that $w^* \geq \overline{w}$. It is straightforward to see that the share of communists continuously changes in w. Thus, we only need to show piecewise increase. There are two cases to consider. **Case 1.** $w < w^*$, all communists join and only a fraction of non-communists join. Recall that q is the probability of communists in the broader population. Let $\underline{i}(w)$ denote the least aligned recruit at w. Thus, the ratio of communist vs. non-communist recruits is

$$\frac{q}{(1-q)\int_{\underline{i}(w)}^1 f(i|w)di},$$

which strictly increases in w because $\int_{\underline{i}(w)}^1 f(i|w)di$ strictly decreases in w. This follows from the fact that $\underline{i}(w)$ increase in w (Proposition B.1) and $f(i|w)$ first-order stochastically dominates $f(i|w')$ for all $w < w'$. Essentially, as w increases, the weight of $f(i|w)$ shifts towards lower values of i and we integrate over a narrower range of smaller $f(i|w)$. **Case 2.** $w > w^*$, for communists and non-communists alike, all types with $i > i^*_h(w)$ join. The ratio

[4] See the proof of Proposition B.1 for the definition of w^*. Substantively, this means that p is sufficiently high, which is reasonable given the extremeness of the communist ideology

of communists vs. non-communists is

$$\frac{q \cdot \int_{i_h^*(w)}^1 f(i|w, i \geq p)di}{(1-q) \cdot \int_{i_h^*(w)}^1 f(i|w)di} = \frac{q \cdot \frac{1-F\left(i_h^*(w)|w\right)}{\int_p^1 f(i|w)di}}{(1-q) \cdot \left[1 - F\left(i_h^*(w)|w\right)\right]}$$
$$= \frac{q}{1-q} \cdot \frac{1}{\int_p^1 f(i|w)di},$$

which increases in w because $\int_p^1 f(i|w)di$ decreases in w. This follows from the fact that $f(i|w)$ first-order stochastically dominates $f(i|w')$ for all $w < w'$. In both cases, the ratio and hence the share of communists increase in w, as required. □

Proposition B.3. *On average, communist recruits exert higher effort and are more likely to be assigned to high-risk tasks.*

Proof of Proposition B.3. The logic is explained in the main text and thus the proof is omitted. □

Proposition B.4. *Suppose $w^* \geq \overline{w}$. As c increases, the fractions of communists and non-communists who join relative to their respective populations both decrease, but the share of communists among the recruits increases.*

Proof of Proposition B.4. We start by examining the case of communists. Recall that for all communists, given any w, all types with i such that $g^h(w,i) = r^h(e_{i,h}^*, i) + w_s - c - w > 0$ join. As c increases, for any given w, $g^h(w,i) = r^h(e_{i,h}^*, i) + w_s - c - w > 0$ is more difficult to satisfy, shifting $i_h^*(w)$ upward. This also implies that w^* decreases. Thus, the range of w for which all types join shrinks, the range of w for which $i \geq i_h^*(w)$ expands and $i_h^*(w)$ increases. Together, they imply that the fraction of communists who join relative to the population decreases.

Now consider the non-communists. There are several cases. First, if $w > \overline{w}$, given any w, all types with i such that $g^h(w,i) = r^h(e_{i,h}^*, i) + w_s - c - w > 0$ join. The same logic applies. Thus, as c increases, $\overline{w}$ decreases and $i_h^*(w)$ increases. Additionally, $\tilde{w} = r^h(e_{1,h}^*, 1) + w_s - c$ also decreases. Second, if $w < \underline{w}$, given any w, all types with i such that $g^l(w,i) = r^l(e_{i,l}^*, i) + w_s - c - w > 0$ join. A similar logic applies. Thus, as c increases, $\underline{w}$ decreases and $i_l^*(w)$ increases. Third, if $w \in (\underline{w}, \overline{w})$, the first and second scenarios are similar to $w < \underline{w}$ and $w > \overline{w}$ respectively. We only need to consider the case where $\underline{i} = i^\dagger(w)$. Recall that $i^\dagger(w)$ is the unique solution to equation (B.2), which is independent of c. Thus, $i^\dagger(w)$ is constant in c. Together, the above analysis implies that the fraction of non-communists who join relative to the population decreases.

Suppose that $w^* \geq \overline{w}$. Thus, for all $w > w^*$, both communists and non-communists decrease by the same amount. For all $w < w^*$, all communist recruits still join while non-communist recruits drop. Together, they imply that as c increases, communist recruits decrease less than non-communist recruits and the share of communists among the enlisted individuals increases. □

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