

THE MISSING MEN  
WORLD WAR I AND FEMALE LABOR FORCE PARTICIPATION\*

ONLINE APPENDIX

Jörn Boehnke      Victor Gay.

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\*Jörn Boehnke is an assistant professor in the Graduate School of Management at the University of California, Davis, CA, and an associate research scholar in the Center of Mathematical Sciences and Applications at Harvard University, Cambridge, MA. Victor Gay is an assistant professor of economics at the Toulouse School of Economics and a research fellow at the Institute for Advanced Study in Toulouse, University of Toulouse Capitole, Toulouse, France (corresponding author, [victor.gay@tse-fr.eu](mailto:victor.gay@tse-fr.eu)). The replication material for this article can be found at: <https://doi.org/10.7910/DVN/APIHZ8>.

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## A. Appendix Figures and Tables

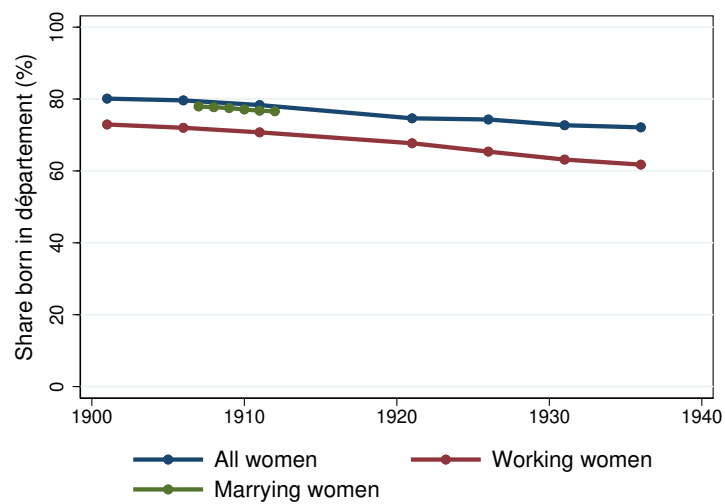


Figure A.1. Shares of Women Born in their Département of Residence

*Notes.* This figure displays average shares of women born in their département of residence for all women, working women, and women at the time of marriage across 87 départements in percent.

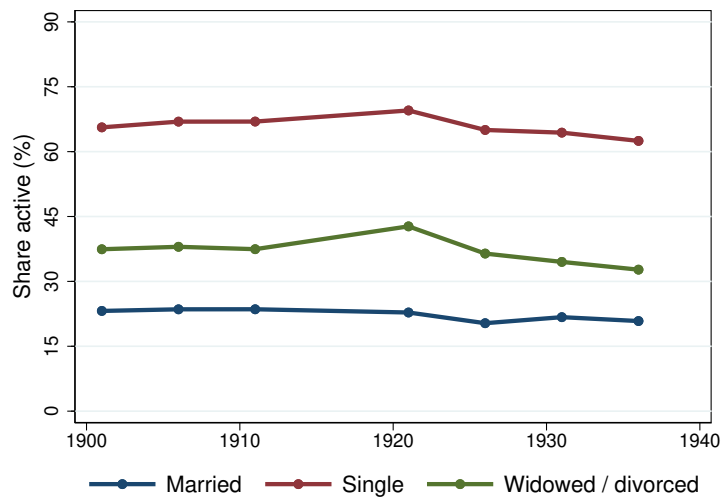


Figure A.2. National-Level FLFP Rates by Marital Status

*Notes.* This figure displays female labor participation rates by marital status at the national level. The labor force participation rate of a given marital status is the share of women aged 15 and older of that marital status that is in the labor force in percent.

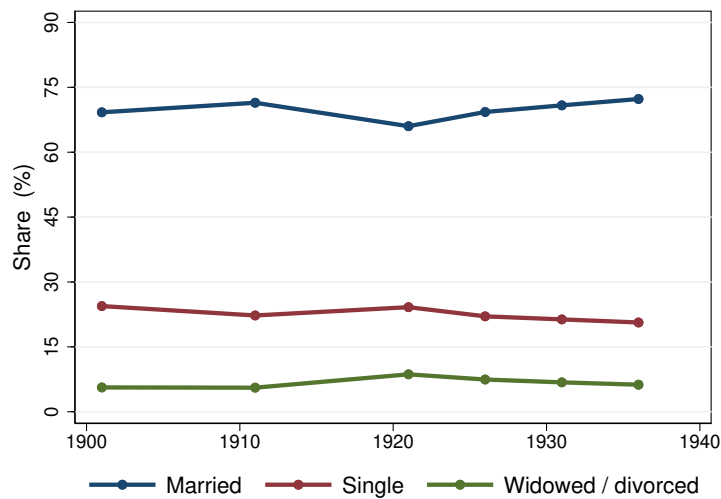


Figure A.3. Shares of Women Aged 20 to 49 by Marital Status

*Notes.* This figure displays average shares of women aged 20 to 49 of each marital status across 87 départements in percent.

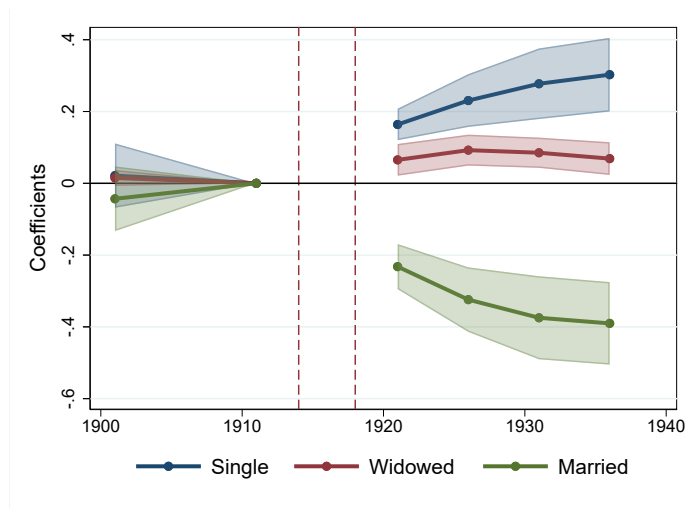


Figure A.4. Impact of WWI Military Fatalities on Female Marital Status

*Notes.* This figure reports year-specific OLS coefficients from estimating a specification analogous to 2. The dependent variable is the share of women in a given marital status among women aged 20 to 49. Controls include the share of rural population in percent and the share of population born in the département in percent. Shaded areas represent 95 percent confidence intervals.

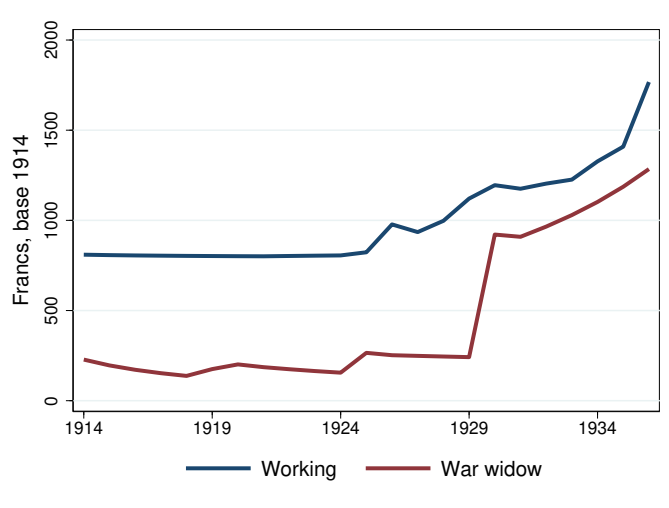


Figure A.5. Estimated Pensions to War Widows

*Notes.* This figure displays estimated real incomes of single working women and non-working war widows with no children. Their incomes are calculated following the evolution of pensions to war widows from laws on social security passed from 1914 to 1936.

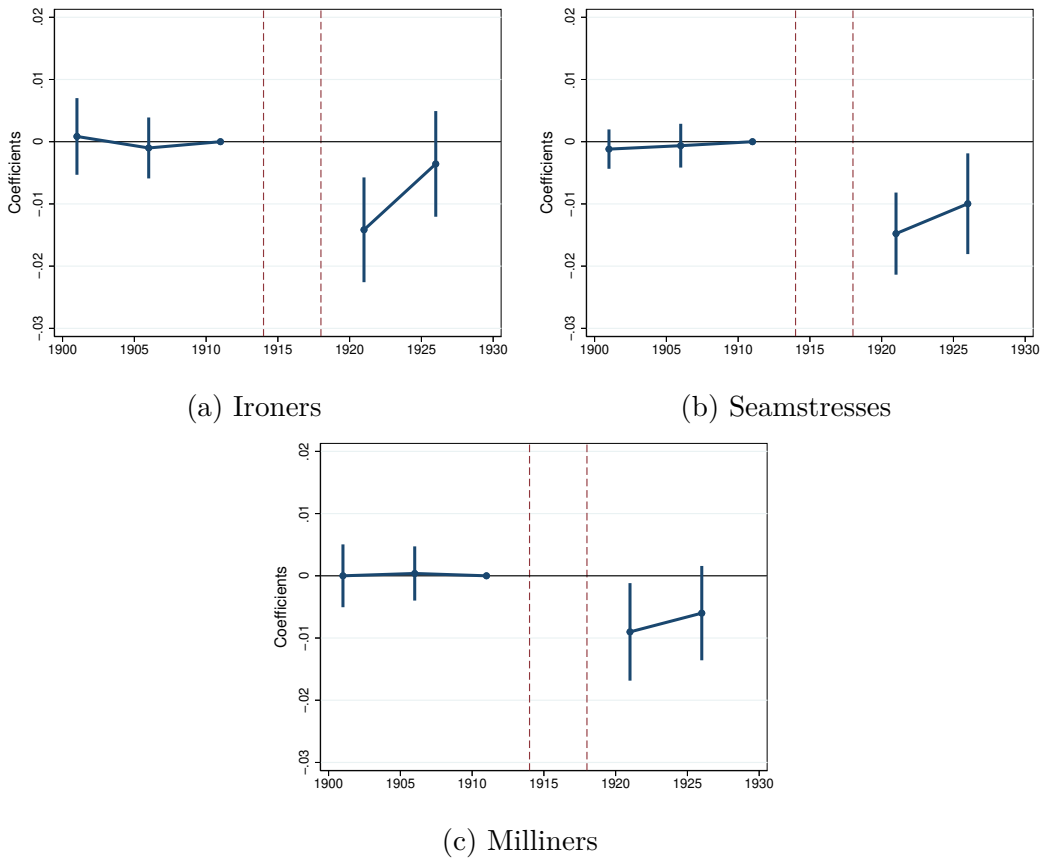


Figure A.6. Impact of WWI Military Fatalities on Wages

*Notes.* These figures show year-specific OLS coefficients from estimating Specification 2. The dependent variable is log hourly wage rates of ironers in Panel a, seamstresses in Panel b, and milliners in Panel c. All specifications include as time-varying controls the share of rural population in percent and the share of population born in the département in percent. Vertical lines represent 95 percent confidence intervals.

Table A.1. Military Death Rates and Pre-War Characteristics

		Dependent variable: military death rate					
A. Demographic		B.1. Economic		B.2. Economic		C. Other	
Variable	Estimate	Variable	Estimate	Variable	Estimate	Variable	Estimate
Population (thousands)	0.00 [0.00]	FLFP (%)	-0.06 [0.07]	Personal wealth (francs)	0.00 [0.00]	Distance to war (km)	-0.00 [0.00]
Population density (per km <sup>2</sup> )	0.00 [0.00]	Share in industry (%)	-0.03 [0.05]	Banking deposits (francs)	-0.02 [0.05]	Share in religious schools (%)	0.03 [0.07]
Share rural population (%)	0.11*** [0.03]	Road density (km per km <sup>2</sup> )	0.00 [0.00]	Direct taxes (francs)	0.05 [0.05]	Vote in 1905 (%)	-0.00 [0.01]
Share born in département (%)	0.15*** [0.04]	Rail density (km per km <sup>2</sup> )	-0.86 [1.01]	Share read and write (%)	-0.04 [0.06]	Turnout in 1914 (%)	0.05 [0.05]
Age	-0.30 [0.23]	Share cultivated land (%)	-0.01 [0.02]	Share primary education (%)	-0.01 [0.02]		

Notes. Each cell in this table reports OLS coefficients from estimating a regression of the form  $\text{death\_rate}_d = \alpha + \beta \mathbf{X}_d + \varepsilon_d$ , where  $\mathbf{X}_d$  is a set of département characteristics in 1911. It corresponds to Table 2, Column 4. The regression contains 87 départements. The dependent variable is military death rate. *FLFP* is female labor force participation in percent. Robust standard errors are in brackets. \*\*\* Significant at the 1 percent level.

Table A.2. Soldiers Mobilized Outside of Armed Services (Thousands)

Date	War Factories	Mines	Administrations	Agriculture	Total
08–1914	0	0	408	0	408
07–1915	122	0	<i>n.a.</i>	0	<i>n.a.</i>
01–1916	339	0	<i>n.a.</i>	0	<i>n.a.</i>
07–1916	467	59	<i>n.a.</i>	0	<i>n.a.</i>
01–1917	515	65	357	0	937
07–1917	559	75	349	130	1,113
11–1917	511	110	354	220	1,195
01–1918	534	110	352	307	1,303
07–1918	493	96	353	301	1,243
11–1918	487	97	352	311	1,247

*Notes.* This table reports the number of soldiers mobilized outside of armed services in thousands between August 1914 and November 1918. *Mines* includes navigation; *Administrations* includes railway transportation; *Agriculture* does not include soldiers on agricultural leaves. *n.a.* denotes missing data. Data are from Fontaine (1924, 61).

Table A.3. Impact of WWI Military Fatalities on FLFP by Age

Dependent variable:	FLFP						
	A. Decennial age group				B. Age group 20–49		
Denominator:							
Age group:	20–49	20–29	30–39	40–49	20–29	30–39	40–49
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Death rate $\times$ post	0.40*** [0.09]	0.27*** [0.09]	0.48*** [0.10]	0.47*** [0.10]	0.13*** [0.03]	0.15*** [0.03]	0.11*** [0.03]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	435	435	435	435	435	435	435
Départements	87	87	87	87	87	87	87
Within R <sup>2</sup>	0.633	0.685	0.685	0.591	0.661	0.668	0.402
1901 FLFP mean	31.1	34.7	30.1	27.7	13.0	10.0	8.1

*Notes.* This table reports OLS coefficient from estimating Specification 1. All regressions include département and year fixed effects, as well as controls for the share of rural population in percent as well as the share of population born in the département in percent. In Panel A, *FLFP* in a given age group is defined as the ratio of the number of working women in that age group to the number of women aged 20 to 49. In Panel B, *FLFP* in a given age group is defined as the ratio of the number of working women in that age group to the number of women in that age group. Census years are 1901, 1921, 1926, 1931, and 1936. Standard errors are in brackets and clustered at the département level.

\*\*\* Significant at the 1 percent level.



Table A.4. Adjusting Standard Errors

Dependent variable:		FLFP								
		A. Clusters			B. Spatial cutoffs					
Dép.	Dép. & year	Adm. reg.	Mil. reg.	100 km	250 km	500 km	750 km	1,000 km		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Death rate $\times$ post ( $\hat{\beta} = 0.35$ )	0.07***	0.08***	0.07***	0.05***	0.06***	0.06***	0.06***	0.06***	0.06***	0.06***
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	609	609	609	609	609	609	609	609	609	609
Départements	87	87	87	87	87	87	87	87	87	87
Clusters	87 and 7	21	22							

*Notes.* This table reports standard errors on the OLS coefficient from estimating Specification 1. All regressions include département and year fixed effects, as well as controls for the share of rural population in percent as well as the share of population born in the département in percent. *Clusters* corresponds to standard errors that are clustered at the département level (Column 1, 87 units), at the département and year level (Column 2, 87 units and 7 periods), at the administrative region level (Column 3, 21 units), and at the military region level (Column 4, 22 units). *Spatial cutoffs* corresponds to standard errors that are corrected for spatial correlation up to some distance cutoff. These standard errors are computed using Hsiang's (2010) `ols_spatial_HAC` command implemented by Fetzner's (2014) `reg2hdffespatial` package. *FLFP* denotes female labor force participation in percent. Census years are 1901, 1906, 1911, 1921, 1926, 1931, and 1936. Reported significance levels are those relevant to the specification and its degrees-of-freedom adjustment. For instance, clustering by administrative region leaves 20 degrees of freedom, meaning that p-values are calculated using a Student distribution for *t* statistics with 20 degrees of freedom.

\*\*\* Significant at the 1 percent level.

Table A.5. Class Characteristics at Age 20

	Age classes				
	1909	1910	1911	1912	1914
Height (cm)	166.2 (1.1)	166.2 (1.0)	166.2 (1.2)	166.5 (1.1)	166.3 (1.0)
<u>Education</u>					
Cannot read nor write	2.6 (1.8)	2.6 (1.8)	2.5 (1.8)	2.4 (1.7)	2.2 (1.5)
Can read	1.1 (0.7)	1.3 (1.3)	1.3 (0.9)	1.3 (1.2)	1.3 (1.0)
Can read and write	26.4 (11.0)	27.0 (11.5)	27.8 (11.6)	29.6 (12.1)	29.9 (11.8)
Primary school	59.4 (13.3)	58.4 (13.7)	56.5 (14.5)	54.1 (15.0)	53.0 (14.9)
School certificate	2.5 (1.1)	2.5 (1.0)	2.5 (0.9)	2.6 (1.0)	2.6 (0.9)
High school diploma	2.1 (0.7)	2.1 (0.8)	2.0 (0.8)	2.0 (0.8)	2.0 (0.8)
Unkown	6.0 (4.0)	6.1 (3.7)	7.4 (4.9)	8.1 (4.7)	9.1 (5.1)
Départments	87	87	87	87	84

*Notes.* This table reports means of class characteristics at age 20 across 87 départements—data are only available across 84 départements for the class 1914. *Education* refers to the share of conscripts with a given level of education in percent. Standard deviations are in parenthesis.

Table A.6. Impact of WWI Military Fatalities on Female Marital Status  
Replication of Table 2 in Abramitzky et al. (2011, 136)

Dependent variable:	Share of Marital Status			
	Single	Married	Widowed	Divorced
	(1)	(2)	(3)	(4)
<u>Age group</u>				
15–19	0.02 [0.03]	-0.06** [0.02]	0.00 [0.00]	0.00 [0.00]
20–29	0.27*** [0.05]	-0.30*** [0.06]	0.01 [0.02]	-0.01*** [0.00]
30–39	0.11*** [0.04]	-0.23*** [0.05]	0.16*** [0.04]	-0.03*** [0.00]
40–49	0.08*** [0.03]	-0.17*** [0.04]	0.13*** [0.03]	-0.01*** [0.00]

*Notes.* Each cell reports OLS coefficients from estimating Specification 4. Dependent variables are the share of women in a given age group with a specific marital status in percent. All regressions include 87 départements. This table partially reproduces Table 2 in Abramitzky, Delavande and Vasconcelos (2011, 136). Census years are 1911 and 1921. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level.

Table A.7. Impact of WWI Military Fatalities on Female Marital Status: Robustness

Dependent variable:	A. Share Single			B. Share Widowed			C. Share Married					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Death rate × post	0.23*** [0.04]	0.09** [0.04]	0.24*** [0.04]	0.22*** [0.06]	0.07*** [0.02]	0.08** [0.03]	0.04** [0.02]	0.07*** [0.02]	-0.31*** [0.05]	-0.16*** [0.05]	-0.27*** [0.04]	-0.28*** [0.05]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Specification	Baseline	Dép.- specific trends	Region × year FE	Residual measure	Baseline	Dép.- specific trends	Region × year FE	Residual measure	Baseline	Dép.- specific trends	Region × year FE	Residual measure
Difference from baseline	0.00	-0.14** [0.06]	0.01 [0.06]	-0.01 [0.07]	0.00	0.01 [0.04]	-0.03 [0.03]	0.00 [0.03]	0.00	0.14** [0.07]	0.03 [0.06]	0.02 [0.07]
Observations	522	522	522	522	522	522	522	522	522	522	522	522
Départements	87	87	87	87	87	87	87	87	87	87	87	87
Within R <sup>2</sup>	0.693	0.907	0.828	0.681	0.864	0.929	0.941	0.862	0.763	0.905	0.876	0.750
1911 mean	22.3	22.3	22.3	22.3	5.6	5.6	5.6	5.6	71.4	71.4	71.4	71.4

*Notes.* This table reports OLS coefficients from estimating Specification 4. The dependent variable is the share of single women in percent in Panel A, the share of widowed or divorced women in percent in Panel B, and the share of married women in percent in Panel C, all relative to age group 20–49. All regressions include département and year fixed effects, and controls for the share of rural population in percent and the share of population born in the département in percent. Census years are 1901, 1911, 1921, 1926, 1931, and 1936. Columns 2, 6, and 10 include département-specific linear time trends, and Columns 3, 7, and 11, region-by-year fixed effects. In Columns 4, 8, and 12, military death rates are purged from pre-war trends between 1901 and 1911 in FLFP and rurality. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level.

Table A.8. Impact of WWI Military Fatalities on Female Marital Status by Age

Dependent variable:	A. Share Single				B. Share Widowed				C. Share Married			
	20-49	20-29	30-39	40-49	20-49	20-29	30-39	40-49	20-49	20-29	30-39	40-49
Age group:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Death rate $\times$ post	0.23*** [0.04]	0.13*** [0.02]	0.07*** [0.02]	0.04*** [0.01]	0.07*** [0.02]	0.00 [0.00]	0.02*** [0.01]	0.05*** [0.01]	-0.31*** [0.05]	-0.06* [0.03]	-0.16*** [0.03]	-0.09*** [0.02]
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	522	522	522	522	522	522	522	522	522	522	522	522
Départements	87	87	87	87	87	87	87	87	87	87	87	87
Within R <sup>2</sup>	0.693	0.834	0.169	0.295	0.864	0.860	0.928	0.690	0.763	0.734	0.790	0.510
Pre-war mean	22.3	13.9	4.9	3.4	5.6	0.5	1.6	3.5	71.4	20.8	27.1	23.5

Notes. This table reports OLS coefficients from estimating Specification 4. The dependent variable is the share of single women in percent in Panel A, the share of widowed or divorced women in percent in Panel B, and the share of married women in Panel C. All regressions include département and year fixed effects, and controls for the share of rural population in percent and the share of population born in the département in percent. Shares are defined with respect to the female population aged 20 to 49. Census years are 1901, 1911, 1921, 1926, 1931, and 1936. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level.

Table A.9. Female Employment Across Industries During the War

	Pre-war employment in July 1914 = 100													
	Aug-14	Jan-15	Jul-15	Jan-16	Jul-16	Jan-17	Jul-17	Jan-18	Jul-18	Jan-19	Jul-19	Jan-20	Oct-20	
Book industry	49	57	59	64	68	75	74	77	75	81	75	90	103	
Casting, excavation	40	80	152	115	198	121	201	176	335	199	154	143	186	
Chemical industry	51	75	89	110	125	146	150	150	139	127	112	127	128	
Clothing, fabric, and feathers	37	58	64	75	79	82	87	87	90	86	85	92	89	
Cutting of precious stones	32	52	60	69	70	73	75	83	75	86	80	101	108	
Fine metals	18	45	55	63	70	70	75	80	84	82	102	113	107	
Food industry	49	64	75	72	88	86	98	75	67	65	75	74	78	
Handling and transportation	59	79	129	170	336	376	425	367	370	371	316	265	193	
Leather	40	65	78	81	95	96	107	105	108	106	117	121	109	
Metallurgy	43	140	300	367	569	631	768	667	636	323	244	247	238	
Rubber, paper, and cardboard	42	71	74	86	88	94	96	104	95	94	94	118	121	
Textile industry	45	68	74	84	85	90	90	90	85	81	77	100	113	
Various commerces	61	72	78	91	95	97	101	102	107	107	111	111	113	
Wood industry	32	59	75	94	109	128	145	150	152	116	109	120	116	
Work on stones	20	40	45	60	64	70	73	76	78	75	78	87	99	
Total	43	68	80	94	105	114	121	118	113	98	92	108	113	

Notes. Data are from five industrial surveys conducted in July 1917, January 1918, July 1918, January 1919, and July 1919.

Table A.10. Military Death Rates and Female Wartime Employment by Sector and Occupation

A. Sectors						
Dependent variable:	FLFP by Sector					
Sector:	All	Agriculture	Industry	Commerce	Liberal	Domestic
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate $\times$ post	0.32*** [0.07]	-0.01 [0.04]	0.29*** [0.05]	-0.04* [0.02]	-0.02 [0.01]	0.10*** [0.03]
Wartime employment $\times$ post	-0.01 [0.01]	0.00 [0.01]	-0.01 [0.01]	0.00 [0.00]	0.00 [0.00]	-0.00 [0.00]
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	522	522	522	522	522	522
Within R <sup>2</sup>	0.633	0.679	0.620	0.832	0.907	0.741
1911 outcome mean	32.7	8.3	14.2	4.4	1.8	4.1
B. Occupations						
Dependent variable:	FLFP by Occupation					
Sector:	All	Boss	White collar	Blue collar	Self employed	Unemployed
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate $\times$ post	0.32*** [0.07]	0.05*** [0.01]	-0.17*** [0.04]	0.10* [0.06]	0.36*** [0.07]	-0.03** [0.01]
Wartime employment $\times$ post	-0.01 [0.01]	-0.00 [0.00]	0.01 [0.00]	-0.01 [0.01]	-0.01 [0.01]	0.00* [0.00]
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	522	522	522	522	522	522
Within R <sup>2</sup>	0.633	0.311	0.878	0.534	0.710	0.475
1911 outcome mean	32.7	3.2	1.9	15.4	11.9	0.3

*Notes.* This table reports OLS coefficients from estimating Specification 1 separately for each sector and occupation. All regressions include département and year fixed effects. *FLFP* denotes female labor force participation in percent. Controls include the share of rural population in percent and the share of population born in the département in percent. Labor force participation in a sector or an occupation is the ratio of employed women in the sector or occupation to the number of women aged 15 and older in percent. It excludes female farm owners. Changes in female employment in percent are calculated between July 1914 and July 1917. Census years are 1901, 1906, 1921, 1926, 1931, and 1936. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

## B. Sector and Occupation Decomposition

**Decomposition by sector** We first decompose the overall effect of military fatalities on female labor force participation across sectors of activity: agriculture, industry, commerce, liberal professions, and domestic services. Labor force participation in each sector is the ratio of women that are active in a given sector to the number of women aged 15 and older, so that coefficients across sectors add up to the coefficient on female labor force participation.

We re-estimate the baseline point estimate of Table 3, Column 1, in Panel A of Table B.1. Estimates imply that 80 percent of the overall effect of military fatalities on female labor force participation stems from women entering the industrial sector, while the remainder essentially stems from women entering the domestic services sector.

These results might be driven by the definition of female labor we use, which excludes female farm owners. In Panel B of Table B.1, we exclude the year 1901 and use a measure of female labor force participation that includes female farm owners. Results are similar except that a small effect on participation in the agricultural sector can now be identified. However, it is much smaller in magnitude than that on participation in the industrial sector and the domestic services sector: in départements that experienced military death rates of 20 percent rather than 10 percent, female labor force participation increased by about 20 percent in these sectors relative to pre-war levels, while it only increased by 5 percent in the agricultural sector.

**Decomposition by occupation** In Table B.2, we further decompose the overall effect of military fatalities on female labor force participation across occupations as defined in the censuses: boss, white collar (employees), blue collar (workers), self-employed, and unemployed. Definitions of occupations are consistent across censuses except for the census of 1911.<sup>1</sup> We therefore exclude this census from the analysis. Moreover, censuses classify labor force participants in

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<sup>1</sup>While occupations are generally defined along sectors of activity, occupations in the census of 1911 are defined along professions. Self-employed are therefore not counted separately in the census of 1911 (*Résultats Statistiques du Recensement Général de la Population 1911*, Tome I, Partie 3, 6).



the domestic services sector as employees (white collars) rather than as workers (blue collars). To improve consistency with respect to standard classifications, we reclassify these participants as blue-collar workers.

In Panel A, we re-estimate the baseline specification when excluding female farm owners. The overall effect is driven by a strong increase in self-employment and blue-collar occupations, together with a decline in white-collar occupations. This movement is especially salient in the industrial sector. Moreover, observe an increase in female bosses in the industrial sector and in the commerce sector. This can be explained by the large number of family owned enterprises previously headed by men that were taken over by their wives or mothers after the war.

The latter trend obtains even more once female farm owners are included, as the increase in the overall effect of military fatalities on female labor force participation is essentially due to women becoming owners of their farms (Panel B). Supporting this result, historians point out that many women declared having an occupation in farming after the war whereas they did not before the war: “[A]lmost a third of the ‘new’ [female] farmers are wives of farmers who declare themselves as active in 1921 whereas they did not do so before” (Thébaud, 2013 [1986], 405). Furthermore, many women became heads of their farm because they lost a husband or a son during the war: “The total number of widows and single female farm owners reaches the large figure of 13 percent of the total number of farm owners, and their number grew respectively by 128,000 and 33,000. Among these widows, most are mother whose son also died in combats” (Thébaud, 2013 [1986], 404–5).

These results are broadly consistent with the permanent shift from white-collar toward blue-collar occupations in manufacturing and service jobs following WWII in the U.S. (Bellou and Cardia, 2016).

Table B.1. Impact of WWI Military Fatalities on FLFP by Sector

A. Female Farm Owners Excluded (1901–1936)						
Dependent variable:	FLFP by Sector					
Sector:	All	Agriculture	Industry	Commerce	Liberal	Domestic
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate $\times$ post	0.35*** [0.07]	0.02 [0.03]	0.28*** [0.05]	-0.03 [0.02]	-0.01 [0.01]	0.09*** [0.02]
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	609	609	609	609	609	609
Départements	87	87	87	87	87	87
Within R <sup>2</sup>	0.581	0.668	0.616	0.809	0.908	0.722
1911 outcome mean	31.4	6.8	14.0	4.5	2.0	4.0
B. Female Farm Owners Included (1906–1936)						
Dependent variable:	FLFP by Sector					
Sector:	All	Agriculture	Industry	Commerce	Liberal	Domestic
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate $\times$ post	0.45*** [0.10]	0.13* [0.07]	0.27*** [0.05]	-0.02 [0.02]	-0.01 [0.01]	0.09*** [0.02]
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	522	522	522	522	522	522
Départements	87	87	87	87	87	87
Within R <sup>2</sup>	0.606	0.624	0.634	0.774	0.919	0.701
1911 outcome mean	51.5	27.0	14.0	4.5	2.0	4.0

*Notes.* This table reports OLS coefficients from estimating Specification 1 separately for each sector. All regressions include département and year fixed effects. *FLFP* denotes female labor force participation in percent. Controls include the share of rural population in percent and the share of population born in the département in percent. Labor force participation in a sector is the ratio of employed women in the sector to the number of women aged 15 and older in percent. It excludes female farm owners in Panel A, and includes them in Panel B. Census years are 1901, 1906, 1911, 1921, 1926, 1931, and 1936 in Panel A, and 1906, 1911, 1921, 1926, 1931, and 1936 in Panel B. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \* Significant at the 10 percent level.

Table B.2. Impact of WWI Military Fatalities on FLFP by Occupation

A. Female Farm Owners Excluded (1901, 1906, 1921–1936)						
Dependent variable:	FLFP by Sector and Occupation					
Sector:	All	Agriculture	Industry	Commerce	Liberal	Domestic
	(1)	(2)	(3)	(4)	(5)	(6)
All occupations	0.33*** [0.07]	-0.01 [0.04]	0.29*** [0.06]	-0.04 [0.02]	-0.02 [0.01]	0.10*** [0.03]
Boss	0.05*** [0.01]		0.03*** [0.01]	0.02*** [0.01]	0.00** [0.00]	
White collar (employee)	-0.17*** [0.05]	-0.00 [0.00]	-0.05*** [0.01]	-0.10*** [0.03]	-0.02* [0.01]	
Blue collar (worker)	0.11* [0.06]	-0.09** [0.04]	0.11*** [0.03]	-0.01*** [0.00]	-0.00** [0.00]	0.11*** [0.03]
Self-employed (isolated)	0.37*** [0.07]	-0.00 [0.00]	0.23*** [0.06]	0.05*** [0.01]	0.01*** [0.00]	
Unemployed	-0.03** [0.01]	0.08*** [0.02]	-0.02** [0.01]	-0.00** [0.00]	-0.01** [0.00]	-0.00 [0.00]
B. Female Farm Owners Included (1906, 1921–1936)						
Dependent variable:	FLFP by Sector and Occupation					
Sector:	All	Agriculture	Industry	Commerce	Liberal	Domestic
	(1)	(2)	(3)	(4)	(5)	(6)
All occupations	0.50*** [0.10]	0.14* [0.07]	0.29*** [0.05]	-0.03 [0.02]	-0.02 [0.01]	0.11*** [0.03]
Boss	0.18*** [0.06]	0.00 [0.00]	0.04*** [0.01]	0.02*** [0.01]	0.00** [0.00]	
White collar (employee)	-0.17*** [0.04]	-0.00 [0.00]	-0.05*** [0.01]	-0.09*** [0.02]	-0.02* [0.01]	
Blue collar (worker)	0.10** [0.05]	-0.06* [0.03]	0.06* [0.03]	-0.01 [0.01]	-0.00* [0.00]	0.12*** [0.03]
Self-employed (isolated)	0.41*** [0.08]	-0.00 [0.00]	0.27*** [0.06]	0.05*** [0.01]	0.01*** [0.00]	
Unemployed	-0.03** [0.01]	0.08*** [0.02]	-0.02** [0.01]	-0.00 [0.00]	-0.01** [0.00]	-0.00 [0.00]

*Notes.* This table reports OLS coefficients from estimating Specification 1 separately for each sector and occupation. All regressions contain département and year fixed effects and control variables for the share of the rural population and the share of population born in the département. Labor force participation is the ratio of active women in a sector and occupation to the number of women aged 15 and older in percent. It excludes female farm owners in Panel A, and includes them in Panel B. Census years are 1901, 1906, 1921, 1926, 1931, and 1936 in Panel A, and 1906, 1921, 1926, 1931, and 1936 in Panel B. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

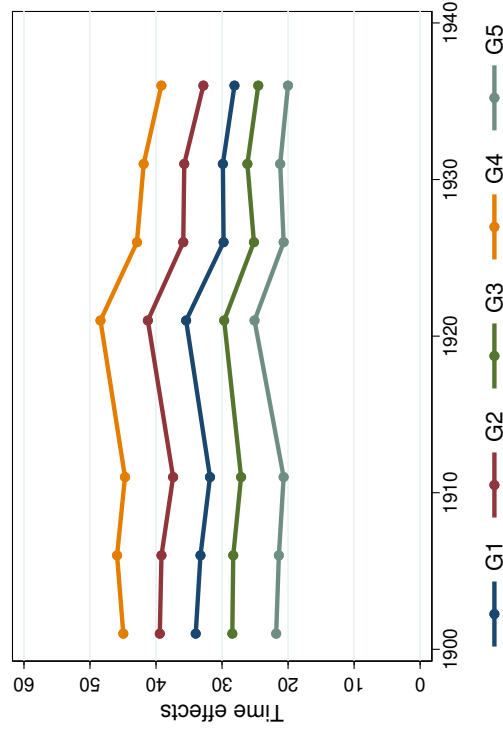
### C. Grouped Fixed Effects

Some départements might exhibit differential time patterns in female labor force participation, biasing baseline estimates. To alleviate this concern, we allow for time-varying heterogeneity across départements and relax the assumption that time fixed effects are common to all départements. We estimate:

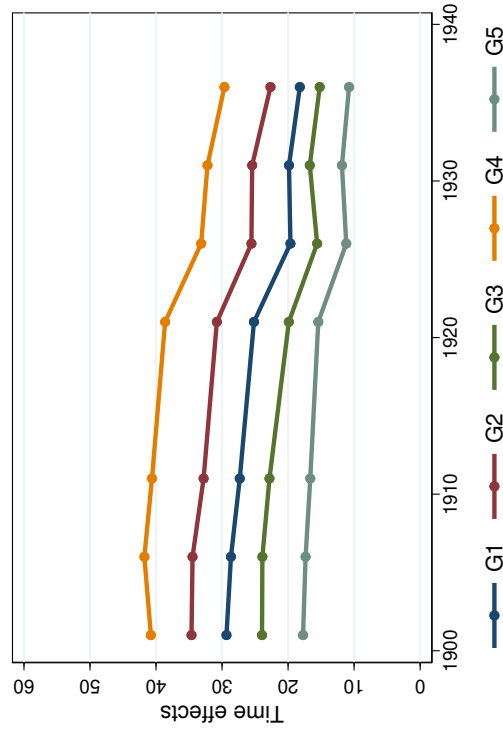
$$(C.1) \quad \text{FLFP}_{d,t} = \beta \text{death\_rate}_d \times \text{post}_t + \gamma_d + \delta_{g_d,t} + \varepsilon_{d,t},$$

where  $g_d$  denotes département  $d$ 's group membership and  $\delta_{g_d,t}$ , group-specific time effects. Importantly, we do not impose any *a priori* structure on group membership such as geographic clustering. Instead, we estimate group membership from the data using Bonhomme and Manresa's (2015) grouped fixed effects algorithm. Conditional on specifying the number of groups, this algorithm optimally groups départements with similar time patterns in female labor force participation net of the correlation with military death rates and other covariates. By controlling for differential time patterns in female labor force participation across groups, we can effectively relax the parallel-trends assumption.

To illustrate this point, we set the number of groups to five and plot grouped fixed effects  $\hat{\delta}_{g_d,t}$  in Panel a of Figure C.1. All five groups exhibit parallel time patterns, suggesting that using a common time fixed effect is justified. Moreover, these groups do not exhibit differential time patterns in female labor force participation once the correlation with military death rates and département characteristics are accounted for (Panel b). This suggests that the parallel-trends assumption is reasonable in this context. Figure C.2 displays the estimate  $\hat{\beta}$  from Specification C.1 for up to eight groups. Allowing for heterogeneity in the time pattern of female labor force participation does not alter baseline results much as all coefficients are close to 0.3.



(a) Grouped Fixed Effects



(b) Trends in FLP

Figure C.1. Patterns of Grouped Heterogeneity

Notes. The estimation of grouped fixed effects  $\hat{\delta}_{g,t}$  in Panel a and trends in female labor force participation in Panel b follows Bonhomme and Manresa's (2015) grouped fixed effects Algorithm 1.

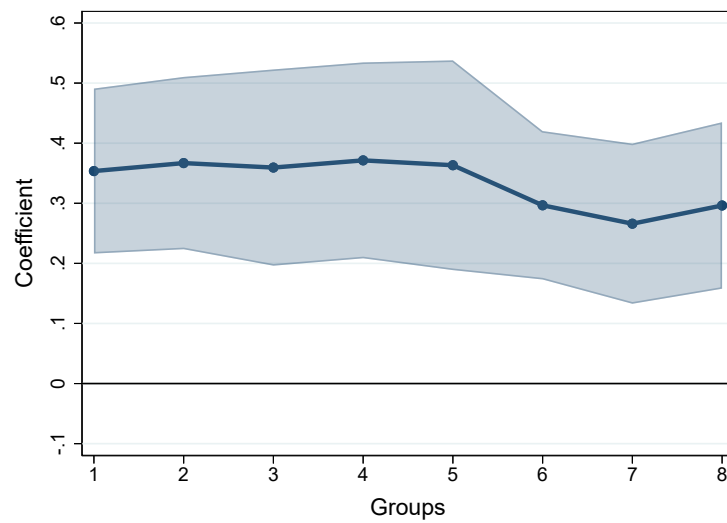


Figure C.2. Grouped Fixed Effect Estimates by Number of Groups

*Notes.* This figure reports the OLS coefficient from estimating Specification C.1 for different numbers of groups. Group membership is determined using Bonhomme and Manresa's (2015) Algorithm 1.

## D. War Départements

War combats occurred on the territories of eleven départements in the industrial North-East (Figure 3). These départements experienced from minor destruction to total devastation.<sup>2</sup> The French State, through the *Ministère des Régions Libérées*, financed the reconstruction effort throughout the interwar period (Michel, 1932, 549–58). It could be problematic if military death rates were correlated with war destruction or with the intensity of the reconstruction effort. On the one hand, the loss of physical capital entailed by war destruction could have implied a decline in the demand for labor relative to other départements. A positive correlation between military death rates and war destruction could therefore bias estimates downward. On the other hand, the reconstruction effort financed by the State could have generated an increase in the demand for labor relative to other départements. A positive correlation between military death rates and the intensity of the reconstruction effort could therefore bias estimates upward. The net impact of this process would depend on the relative intensity of war destruction vis-à-vis the reconstruction effort and the extent of correlations with military death rates.

We propose two strategies to cope with this potential problem. First, we repeat the analysis when excluding these eleven départements. We find that they do not drive the results (Table 3, Column 7). Second, using data from Michel (1932), we explore whether military death rates are correlated with the extent of war destruction and the intensity of the reconstruction effort. Table D.1 provides a broad picture of the magnitude of war destruction in départements directly affected by the war. Some suffered mild destruction while others endured total devastation. On average, 65 percent of these départements territories was invaded or bombed during the war. In terms of physical capital, 80 percent of their productive agricultural land was damaged by trenches, barbed wire, or shells, more than half of their houses were at least partially destroyed, and so were 83 percent of their factories and public buildings.

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<sup>2</sup>The eleven départements directly affected by war combats were: Aisne, Ardennes, Belfort, Marne, Meurthe-et-Moselle, Meuse, Nord, Oise, Pas-de-Calais, Somme and Vosges. Haut-Rhin, Bas-Rhin and Moselle were also affected by war combats, but they are excluded from the analysis as they belonged to Germany before the war.

Table D.1. Share of Pre-War Stock Damaged by the War

	Mean	S.d.	Min	Max
<b>Territory</b>				
Damaged area	65	28	17	100
Medium damage	28	20	5	70
High damage	24	15	3	58
Very high damage	2	2	0	4
Damaged cities	62	28	14	99
Damaged agricultural land	81	20	38	100
<b>Houses</b>				
Damaged houses	53	16	29	79
Partially damaged	27	6	17	35
Destroyed	26	15	8	54
<b>Factories</b>				
Damaged factories	83	27	20	100
Partially damaged	37	21	6	76
Looted	17	17	0	52
Destroyed	29	19	9	62
<b>Public buildings</b>				
Damaged buildings	83	7	73	94
Partially damaged	52	18	12	72
Destroyed	31	16	14	62

*Notes.* Summary statistics for ten war départements. No data for Belfort. Data are from Michel (1932)

To measure the intensity of the post-war reconstruction effort, we compute the share of pre-war capital that was reconstituted after the war. This enables us to take into account the absolute magnitude of war destruction. Figure D.1 displays the evolution of the reconstruction effort between 1920 and 1928 across various items. The reconstruction effort was intense: one decade after the war, these départements had rehabilitated most of their agricultural land (80 percent) and reconstructed most of their factories and public buildings (80 percent), but only part of their houses (30 percent).

Table D.2 reports estimates from regressing military death rates on these measures of war destruction and reconstruction. We find no correlation between these. This makes us confident that war départements are not driving results of the article.



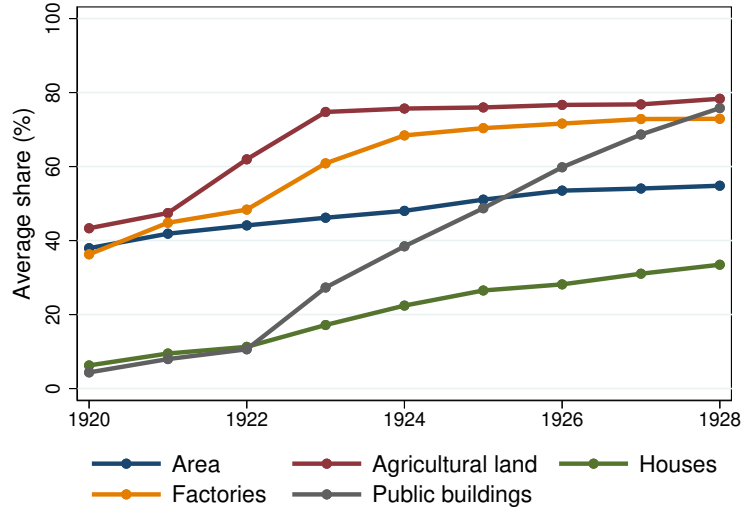


Figure D.1. Average Shares of Pre-War Stock Rehabilitated and Reconstructed

*Notes.* Average shares for ten war départements. No data for Belfort. Data from Michel (1932).

Table D.2. Military Death Rates, War Destruction, and the Reconstruction

Dependent variable: military death rate			
A. Destruction		B. Reconstruction in 1928	
Variable	Estimate	Variable	Estimate
Damaged area	-0.02 [0.02]	Cleared area	-0.02 [0.02]
Damaged cities	-0.01 [0.02]	Rehabilitated agricultural land	-0.01 [0.02]
Damaged agricultural land	-0.01 [0.01]	Reconstructed houses	-0.01 [0.03]
Damaged houses	-0.01 [0.02]	Reconstructed factories	-0.01 [0.02]
Damaged factories	-0.01 [0.01]	Reconstructed public buildings	-0.01 [0.02]
Damaged public buildings	-0.01 [0.02]		

*Notes.* Each cell reports OLS coefficient  $\hat{\beta}$  from estimating the following specification:  $\text{death\_rate}_d = \alpha + \beta \mathbf{X}_d + \varepsilon_d$ , where  $\mathbf{X}_d$  is a measure of war destruction or reconstruction in département  $d$ . Besides the ten war départements, we also include their eight neighboring départements as a control group, to which we assign no destruction or reconstruction effort. Robust standard errors are in brackets.

## E. Pre-War Migration Patterns

Military fatalities are assigned to a département through soldiers' départements of birth, which might differ from their départements of residence at the eve of the war—19 percent of men aged 15 to 44 resided outside their département of birth in 1911. Table E.1 reports summary statistics for the share of men born outside their départements of residence in 1911 across various age groups.<sup>3</sup> It could be problematic if men born in rural départements systematically migrated to urban départements. In this case, military death rates in urban départements would be understated, while those in rural départements, overstated. Given that the response of female labor was relatively stronger in areas with a larger pre-war industrial sector, unobserved pre-war migration patterns could introduce a downward bias in baseline estimates.

Table E.1. Share of Men Born Outside their Départements of Residence

Age group:	Mean	S.d.	Min	Max
15–19	15.2	7.5	2.7	45.2
20–24	17.9	9.2	3.6	56.8
25–29	20.8	10.4	5.6	61.0
30–34	20.9	10.9	4.7	63.3
35–39	20.7	11.0	4.0	64.1
40–44	20.3	11.2	2.3	64.7
15–44	19.2	9.9	3.7	58.7

*Notes.* Summary statistics for 87 départements in 1911. Shares are in percent. Data for the age group 20–24 is relative to women (see Footnote 3).

Using censuses to assess the intensity of internal migrations is restrictive because they only enable to observe individuals at one point in time. To have a

<sup>3</sup>Original data for the male age group 20–24, a 36.2 percent mean, are artificially inflated because they do not correct for men in military barracks during their military service. Instead, we display data for women in this age group, as migration rates for women and men were almost equal for the age groups we consider. The average share of women residing outside their département of birth was 20.6 percent for age group 25–29 compared to 20.8 percent for men; 20.8 percent for age group 30–34 compared to 20.9 percent for men; 20.3 percent for age group 35–39 compared to 20.7 percent for men; and 20.1 percent for age group 40–44 compared to 20.3 percent for men.

more meaningful picture of internal migration flows, Kesztenbaum (2014) collected a random sample of military records for 2,600 soldiers. For each soldier, these records provide all locations he resided in, from his entrance to his dismissal from the army. Among these soldiers, 62 percent had migrated at least once to another département during the course of their lifetime. Among those who migrated at least once, two third migrated farther than 20 kilometers from their city of birth. Moreover, two third migrated to an urban département (Kesztenbaum, 2014, 26). About a quarter eventually came back to their département of birth, with six years between both movements (Kesztenbaum, 2014, 30). This study shows that using data from censuses—or from birth, marriage, and death certificates—leads to overstating the intensity of internal migration flows.

### *E.1. Military Death Rates Corrected for Pre-War Migration*

We use the census of 1911 to construct a measure of military death rates that takes into account bilateral migration flows between départements. For each département, the census of 1911 provides the number of residents that were born in each other département.<sup>4</sup> The computation proceeds in three steps. Throughout,  $i$  indexes départements of residence and  $j$ , départements of birth:

1. For each département, we compute the share of men born in département  $i$  that migrated to département  $j$ . We denote this share  $\mathbf{share}_{ij}$ , where  $\sum_{j=1}^{87} \mathbf{share}_{ij} = 100, \forall i \in \{1, \dots, 87\}$ .
2. We then compute the number of soldiers born in département  $j$  to be reallocated to département  $i$ :  $\mathbf{fatalities}_j \times \mathbf{share}_{ij}$ , where  $\mathbf{fatalities}_j$  denotes the number of military fatalities born in département  $j$ .
3. Finally, we aggregate military fatalities for each département  $i$ :  

$$\widehat{\mathbf{fatalities}}_i = \sum_{j=1}^{87} \mathbf{fatalities}_j \times \mathbf{share}_{ij}.$$

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<sup>4</sup>Such detailed information on migration patterns is only available in the censuses of 1901, 1911, and 1941. This information is not available by age group, so we are constrained to implicitly assume that all age groups migrated at similar rates.

We re-estimate the main result of the article with this corrected measure in Table 3, Column 8. The point estimate increases from 0.35 with the standard measure of military death rates to 0.55 with the measure corrected for bilateral migration flows. These estimates are however not statistically different.

### *E.2. Départements of Recruitment*

The military records we use to compute military death rates also contain the location of recruitment of each soldier, which corresponds to their location of residence at the time of recruitment in the army at age 20. This information could in principle be used to build a measure that corrects for unobserved patterns of migration between birth date and recruitment date. However, this measure is contaminated with measurement error because the geography of military recruitment did not overlap département boundaries. Summary statistics already hint at this issue: while the measure of military death rates based on départements of birth ranges from 6 to 29 percent, the one based on départements of recruitment ranges from 0.2 to 37 percent. Such a range in military death rates is not plausible.

**The geography of military recruitment** In August 1874, after the Franco-Prussian War of 1870, the geography of military recruitment was reorganized. Nineteen military regions were created and each military region was further divided into eight subdivisions. These 144 subdivisions of military regions represent the relevant constituencies of military recruitment. Because each subdivision had to count a similar number of recruits, they were not created along the lines of départements but along the lines of electoral constituencies—*arrondissements* and *cantons*—as these were drawn following population criteria. Each subdivision of military region had one recruitment bureau that was managing the recruitment process of young men residing within the subdivision. The geography of military recruitment created in 1874 underwent six minor modifications through 1914.<sup>5</sup> The geography most relevant to soldiers who fought during WWI

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<sup>5</sup>These modifications occurred in January 1892, December 1897, February 1898, September 1899, September 1913, and December 1913. Boulanger (2001) provides a detailed account of this geography.

was in place from September 1899 to September 1913. Figure E.1 displays this geography of military recruitment.

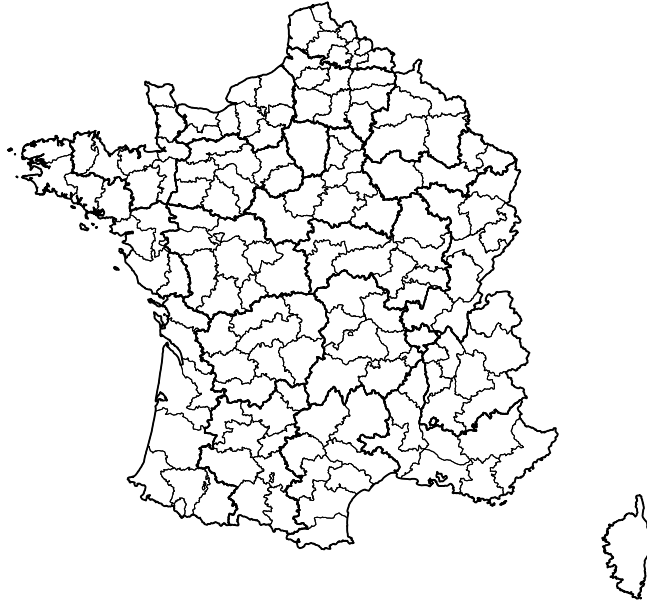


Figure E.1. The Geography of Military Recruitment

*Notes.* This map represents the geography of military recruitment that was in place from September 1899 to September 1913. Bold lines indicate military regions, and thin lines indicate subdivisions of military regions. Regions of Paris and Lyon had specific arrangements which are not represented on this map.

Given that subdivisions of military regions were drawn independently from département boundaries, there is little overlap between the two. Therefore, using soldiers recruitment bureaus as a measure of their départements of residence either overstates or understates département-level military death rates. The subsequent examples explore these two types of measurement error in details.

**Example 1: département of Belfort** Suppose that a subdivision of military region overlaps several départements. Figure E.2 displays the case of the subdivision of Belfort, which contains the département of Belfort and extends into two other départements—Doubs and Haute-Saône. Because the recruitment bureau of this subdivision was located in the city of Belfort, which was inside

the département of Belfort, a soldier residing in the départements of Doubs or Haute-Saône but inside the subdivision of Belfort would have been recruited by the bureau of Belfort. Using a soldier’s recruitment bureau to assign his département of residence would in this case erroneously assign him to the département of Belfort, dramatically overstating the military death rate of the département of Belfort. Indeed, while its military death rate is 6 percent when using the département of birth, it rises to 31 percent when using the recruitment bureau.

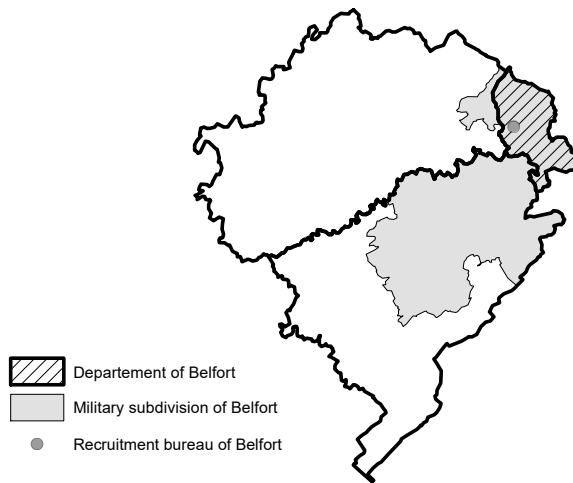


Figure E.2. Example 1: Département of Belfort

**Example 2: département of Ardèche** Suppose now that a département is not fully contained inside a subdivision of military region. Figure E.3 displays the case of the département of Ardèche, which is composed by two subdivisions, one of which extends into another département along with its recruitment bureau—the recruitment bureau of Pont-Saint-Esprit. Because this recruitment bureau is located outside the département of Ardèche, a soldier residing inside the département of Ardèche and inside the subdivision of Pont-Saint-Esprit would be recruited by the bureau of Pont-Saint-Esprit. Using a soldier’s recruitment bureau to assign his département of residence would in this case erroneously assign him to another département, dramatically understating the military death rate of the département of Ardèche. Indeed, while its military death rate is 21

percent when using the département of birth, it decreases to 13 percent when using the recruitment bureau.

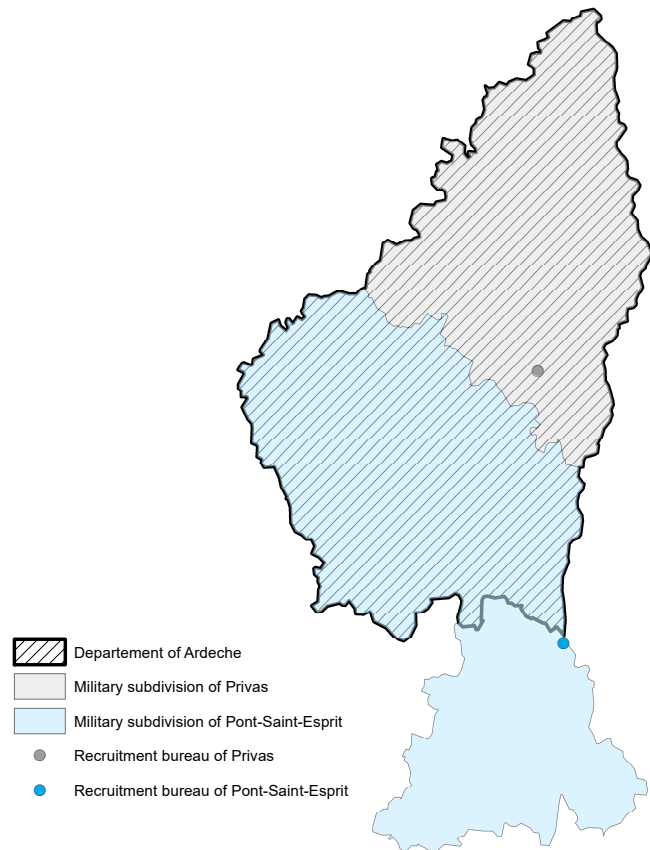


Figure E.3. Example 2: Département of Ardèche

## F. Pre-War Health Conditions

The male population aged 15 to 44 in 1911 might not adequately capture the pool of drafted men as not all men subject to conscription were eventually enlisted. For instance, only 78.5 percent of men aged 20 to 48 were enlisted at the onset of the war (Huber, 1931, 93). The remainder was initially exempted, mostly due to poor health. Given that health partially determines soldiers abilities on the battlefield, départements with adverse pre-war health conditions might have experienced greater military death rates. Part of the effect we identify would then be attributable to pre-war health rather than to military death rates.

We deal with this potential issue in section F.1. Herein, we explore the sources of variation in enlistment rates across départements and analyze whether they are correlated with military death rates. We find that départements with lower enlistment rates displayed slight adverse pre-war health conditions. Nevertheless, variation in pre-war health is entirely captured by rurality, so that including enlistment rates into the main analysis does not affect the results. This supports our interpretation that it was the permanent loss rather than the temporary lack of men that affected female labor force participation.

Related to the health environment, we also explore in section F.2 whether Spanish Flu fatalities might confound the results in the article. We show that this was not the case, as both processes were orthogonal.

### *F.1. Enlistment Rates, Military Fatalities, and Female Labor*

We first analyze the sources of variation in enlistment rates across départements, which we measure using annual reports on military recruitment. These reports provide a “recruitment list” that classifies conscripts into eight categories. Three of these categories exempt or classify potential recruits into auxiliary services due of their poor health.<sup>6</sup> Those who were exempted for reasons unrelated

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<sup>6</sup>These categories are defined by the law of March 21, 1905, which stipulates that “[f]rom the point of view of physical abilities, the revision council classifies youngsters into four categories: [...] 2—Those who, suffering from a relative disability without their general constitution to be doubtful, are recognized fit for the auxiliary service; 3—Those who, being of too weak physical constitution, are adjourned until a new examination; 4—Those whose general constitution is bad or determine a partial or total functional disability are exempted of any military service,



to health—for instance to finish medical school—were to be recalled later by the army. We provide summary statistics of this classification across classes 1905 to 1911 in Table F.1. 21 to 25 percent of each age class was not enlisted at age 20 due to poor health.

Table F.1. Enlistment Rates of Age Classes 1905–1911

	Age Classes					
	1905	1907	1908	1909	1910	1911
Enlisted in armed forces (%)	66.3 (4.9)	66.1 (4.1)	68.9 (4.9)	69.6 (6.0)	69.6 (4.6)	71.0 (5.7)
Not incorporated in armed forces for health reasons (%)	24.3 (3.6)	25.2 (3.7)	22.8 (3.5)	22.2 (4.6)	22.0 (3.2)	20.8 (4.1)
Incorporation adjourned (%)	9.4 (3.4)	8.7 (3.4)	8.3 (3.8)	8.3 (5.6)	8.5 (3.8)	8.1 (5.4)
Départements	87	87	87	87	87	87

*Notes.* Averages across 87 départements. Data are missing for the class 1906. Standard deviations are in parentheses.

We then explore whether these differences in enlistment rates are related to pre-war health conditions, which we capture by the mortality rate—the ratio of deaths of individuals below 65 to the population below 65—and the height of conscripts of the relevant age class. We show in Table F.2 that départements in which conscripts were shorter and mortality rates greater also exhibited lower enlistment rates. Nevertheless, regressing military death rates on the average enlistment rate across classes 1905 to 1911, together with other pre-war characteristics, reveals that variations in enlistment rates across départements are subsumed into variations in rurality (Table F.3, Columns 1–3). Differences in pre-war health conditions are therefore unlikely to confound the estimates.

To be sure, we re-estimate the baseline coefficient from Table 3, Column 1, when including the average enlistment rate interacted with a post-war indicator.<sup>7</sup> We report results in Table F.4, Columns 1–3. The estimates imply that

either armed or auxiliary” (*Journal Officiel de la République Française, Lois et Décrets*, 37(81), 1870–81, dated March 23, 1905).

<sup>7</sup>Results are similar if we include cohort-specific enlistment rates or if we further include enlist-

Table F.2. Enlistment Rates and Pre-War Health Conditions

Dependent variable :	Enlistment Rate					
	1905	1907	1908	1909	1910	1911
Age class:						
Height (cm)	1.72*** [0.36]	1.26*** [0.33]	1.44*** [0.32]	1.05** [0.49]	0.64** [0.29]	0.38 [1.70]
Mortality rate (%)	-3.67** [1.70]	-3.50* [1.85]	-3.70** [1.68]	-2.32 [2.35]	-3.83** [1.53]	-5.05** [1.97]
Départements	87	87	87	87	87	87
R <sup>2</sup>	0.304	0.175	0.235	0.073	0.112	0.079
Outcome mean	75.7	74.8	77.2	77.8	78.0	79.2

*Notes.* The dependent variable is the enlistment rate of a given age class in percent. *Height* is the average height of the relevant age class upon the draft. Robust standard errors are in brackets.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level. \* Significant at the 10 percent level.

differences in enlistment rates, a measure of the temporary lack of men, neither directly affected female labor force participation nor mediated the impact of military death rates.

### ***F.2. The Spanish Flu***

The Spanish Flu killed 20 to 40 million people worldwide, mostly between the fall of 1918 and the spring of 1919. It affected France much less than other countries, as roughly 180,000 civilians and 30,000 soldiers died from the epidemic (Darmon, 2000; Guenel, 2004). Although the number of fatalities due to the disease was relatively small compared to combat-related fatalities, the Spanish Flu epidemic might constitute a confounding factor in interpreting results in the article if both processes were correlated. It might especially be the case if men were more vulnerable to the disease than women—though the asymmetric gender vulnerability to the epidemic is still an open question in historical medical research (Sawchuk, 2009; Fornasin, Breschi and Manfredini, 2018).

To assess the relationship between both processes, we collected information

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ment rates for the classes of 1912 and 1914.

Table F.3. Military Death Rates and Pre-War Health Conditions

Dependent variable:	Military death rate					
	(1)	(2)	(3)	(4)	(5)	(6)
Enlistment rate	0.05 [0.10]	0.02 [0.04]	0.05 [0.10]			
Spanish Flu death rate				0.02 [0.21]	-0.02 [0.08]	-0.10 [0.16]
FLFP		0.03 [0.03]	-0.01 [0.07]		0.02 [0.03]	-0.08 [0.07]
Rural		0.12*** [0.01]	0.16*** [0.04]		0.13*** [0.02]	0.18*** [0.06]
Born in dép.		0.14*** [0.03]	0.11* [0.06]		0.11*** [0.04]	0.11* [0.06]
Other characteristics	No	No	Yes	No	No	Yes
Military region FE	No	No	Yes	No	No	Yes
Départements	87	87	87	74	74	74
Adj. R <sup>2</sup>	-0.009	0.737	0.835	-0.014	0.743	0.838

*Notes.* This table reports OLS estimates from regressing military death rates on characteristics measured in 1911. See Table 2 notes for more details. Robust standard errors are in brackets.

\*\*\* Significant at the 1 percent level, \*\* Significant at the 5 percent level, \* Significant at the 10 percent level.

on the number of Spanish Flu civilian fatalities across 74 départements from the 1918 and 1919 volumes of the *Statistique Sanitaire de la France*.<sup>8</sup> We then compute the rate of civilian fatalities per thousand inhabitants in 1911. Spanish Flu death rates range from 1 per mille in Indre to 14 per mille in Haute-Marne, with an average of 4.5 per mille.

We first show that military death rates were orthogonal to Spanish Flu death rates. In Table F.3, we replicate estimates of Table 3 on the sample of départements for which information on Flu fatalities are available. As apparent in Column 4, Spanish Flu death rates were uncorrelated with military death rates.

<sup>8</sup>Unfortunately, this information is unavailable for the remaining 13 départements due to the lack of administrative personnel toward the end of the war (Darmon, 2000, 165). Moreover, it is not available separately by gender. Data for military fatalities due to the disease is available the *Statistique médicale. Données de Statistiques Relatives à la Guerre 1914-1918* (297), but only at the aggregate level.

Table F.4. Impact of WWI Military Fatalities and Pre-War Health Conditions on FLFP

Dependent variable:	FLFP					
	(1)	(2)	(3)	(4)	(5)	(6)
Military death rate $\times$ post	0.35*** [0.07]		0.36*** [0.07]	0.29*** [0.06]		0.29*** [0.06]
Enlistment rate $\times$ post		-0.04 [0.06]	-0.07 [0.05]			
Spanish Flu death rate $\times$ post					0.16 [0.12]	0.16 [0.11]
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	609	609	609	518	518	518
Départements	87	87	87	74	74	74
Within R <sup>2</sup>	0.581	0.535	0.583	0.640	0.606	0.643
1911 FLFP mean	31.4	31.4	31.4	30.9	30.9	30.9

*Notes.* This table reports OLS coefficients from estimating Specification 1. All regressions include département and year fixed effects, and controls for the share of rural population in percent and the share of population born in the département in percent. Census years are 1901, 1906, 1911, 1921, 1926, 1931, and 1936. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level, \*\* Significant at the 5 percent level.

This also holds true when including other pre-war characteristics (Columns 5 and 6). We then re-estimate the baseline point estimate when including Spanish Flu death rates interacted with a post-war indicator. We report results in Table F.4, Columns 4–6. Including Spanish Flu death rates does not affect the coefficient on military death rates, as it barely changes between Column 4 and Column 6. Moreover, the Flu does not appear to have had any significant effect on female labor force participation.

## G. Instrumental Variables Strategy

### G.1. Main Analysis

Our instrumental variables strategy leverages on exogenous variation in military death rates that resulted from the recruitment process of the army. We build three instruments, each representing the size of a class relative to the next. For instance, the size of the class 1913 relative to the class 1914 in département  $d$  is calculated as:

$$(G.1) \quad \text{ratio\_class}_{1913-1914,d} = \frac{\text{male\_population\_class\_1913\_in\_d}}{\text{male\_population\_class\_1914\_in\_d}} \times 100,$$

where population data are from the census of 1911.

How large are these differences? Table G.1 provides summary statistics for the absolute sizes of the classes 1911–1914 as well as the absolute and relative differences between consecutive classes. The median differences our instruments rely on are between 86 and 208, which represent 3 to 8 percent in relative terms. There are however large disparities in these relative differences across départements, as they range from 0 to 25 percent, with standard deviations of 5 percent.

The set of instrumental variables we use is based on département-specific demographic characteristics. As a result, instruments could be systematically correlated with unobserved determinants of, say, pre-war migration patterns. Consider an emigration département. As they get older, men might leave this département to find a job in another département. This would in turn change labor market conditions for women. Older cohorts in this département would be systematically smaller than younger ones in a given year. In this case, the distribution of instruments would not be independent from potential outcomes and the exclusion restriction would be violated.

We explore this possibility by first computing the correlation across all three instruments. They range from 0.16 to 0.31, suggesting that determinants of the relative size of successive cohorts are not systematically correlated. Second, we explore dynamic patterns of instruments within each département. They do not follow a deterministic trajectory in 60 percent of cases, that is, consecutive cohorts are neither systematically decreasing nor increasing in size (Table G.2).

If instruments were randomly assigned, we would find no systematic pattern in 75 percent of cases.<sup>9</sup> We also check that instruments are not correlated with pre-war levels in female labor force participation and rurality (Table G.3). All these tests support the argument that instruments are unrelated to determinants of pre-war trends in female labor force participation and that the exclusion restriction is unlikely to be violated.<sup>10</sup>

As shown in Panel A of Table 4, instruments are strongly correlated with military death rates. We run a series of placebo tests in Figure G.1, Panel a, which displays first-stage estimates relative to all other class ratios. Only the instruments we propose yield a credible first stage. This supports the idea that the four classes we consider were uniquely affected by differential training levels. Similarly, only the class ratios we consider generate meaningful second-stage results (Figure G.1, Panel b). Finally, in Table G.4, we report the same series of robustness checks performed in Table 3. As with the baseline analysis, the instrumental variables estimates are robust.

## *G.2. Alternative Specifications of Instrumental Variables*

In this section, we show that instrumental variable results are robust to alternative specifications of the instruments.

**Alternative specification 1** We first specify instruments as the size of each cohort relative to the four age classes of interest:

$$\text{ratio\_class}_{j,d} = \frac{\text{male\_population\_class\_j\_in\_d}}{\text{male\_population\_classes\_1911-1914\_in\_d}} \times 100.$$

Panel A of Table G.5 replicates first-stage estimates of Table 4. All instruments are strongly correlated with military death rates—except for the second one,

<sup>9</sup>If instruments were randomly assigned, each instrument would be above one 50 percent of the time. As a result, all three instruments being above one would have a probability of one eighth. Therefore, a systematic pattern of all instruments being above one *or* all instruments being below one would emerge 25 percent of the time.

<sup>10</sup>An alternative scenario would be that imbalances in successive cohorts sizes affected post-war female labor market conditions through disruptions of the post-war marriage market. This would be the case if women were only mating with men from their own cohort, which is unlikely.

which is barely significant when we pool instruments together (Panel A, Column 5). Moreover, all Kleibergen-Paap Wald F-statistics are well above 10. Because younger age classes tended to die at higher rates than older ones, instruments are not monotonically related to military death rates: while the relative size of older age classes is negatively correlated with military death rates, the relative size of younger age classes is positively correlated with military death rates.

Panel A of Table G.6 replicates instrumental variable estimates of Table 4. We are confident that the specification of instruments does not drive the results because we find similar estimates when instruments are combined: while the estimate in Column 5 of Table 4 is 0.54, the corresponding estimate in Column 6 of Table G.6 is 0.55.

**Alternative specification 2** We also specify instruments as the size of each cohort relative to the size of an older cohort, the class 1910:

$$\text{ratio\_class}_{j,d} = \frac{\text{male\_population\_class\_j\_in\_d}}{\text{male\_population\_class\_1910\_in\_d}} \times 100.$$

Panel B of Table G.5 replicates first-stage estimates of Table 4. When combined, all instruments are correlated with military death rates. Moreover, all but one Kleibergen-Paap Wald F-statistics are well above 10. As with the previous alternative specification, instruments are not monotonically related to military death rates: while the relative size of older age classes is negatively correlated with military death rates, the relative size of younger age classes is positively correlated with military death rates.

Panel B of Table G.6 replicates instrumental variable estimates of Table 4. When we combine instruments, we obtain similar results as those above: while the estimate in Column 5 of Table 4 is 0.54, the corresponding estimate in Column 6 of Table G.6 is 0.50. These results suggest that the specification of instruments does not drive instrumental variables results.

Table G.1. Differences in Class Sizes, 1911–1914

A. Absolute Class Sizes					
	Median	Mean	S.d.	Min	Max
Class 1911	2,541	3,474	4,109	708	35,332
Class 1912	2,679	3,587	3,914	775	33,107
Class 1913	2,807	3,783	3,843	895	31,731
Class 1914	2,833	3,731	3,649	809	29,606
B. Absolute Differences in Class Sizes					
	Median	Mean	S.d.	Min	Max
Class 1912 – Class 1911	159	213	267	1	2,225
Class 1913 – Class 1912	208	259	218	11	1,376
Class 1914 – Class 1913	86	127	231	1	2,125
C. Relative Differences in Class Sizes					
	Median	Mean	S.d.	Min	Max
Class 1912 – Class 1911	0.06	0.07	0.05	0.00	0.25
Class 1913 – Class 1912	0.08	0.08	0.05	0.00	0.22
Class 1914 – Class 1913	0.03	0.03	0.03	0.00	0.15

*Notes.* This table reports summary statistics for absolute class sizes in Panel A, absolute differences of class sizes in Panel B, and relative differences in class sizes in Panel C, where the difference is relative to the older class.

Table G.2. Dynamic Patterns of Instruments

	A. $cl. 11 > cl. 12$		B. $cl. 11 \leq cl. 12$	
	$cl. 12 > cl. 13$	$cl. 12 \leq cl. 13$	$cl. 12 > cl. 13$	$cl. 12 \leq cl. 13$
$cl. 13 > cl. 14$	6%	10%	0%	43%
$cl. 13 \leq cl. 14$	0%	6%	1%	34%

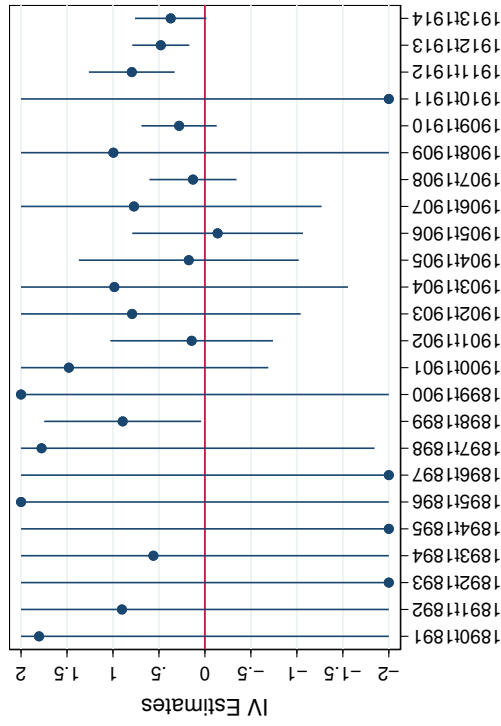
*Notes.* Figures refer to the share of départements that follow a given pattern. *cl. 11* denotes the class 1911; *cl. 12*, the class 1912; *cl. 13*, the class 1913; and *cl. 14*, the class 1914.



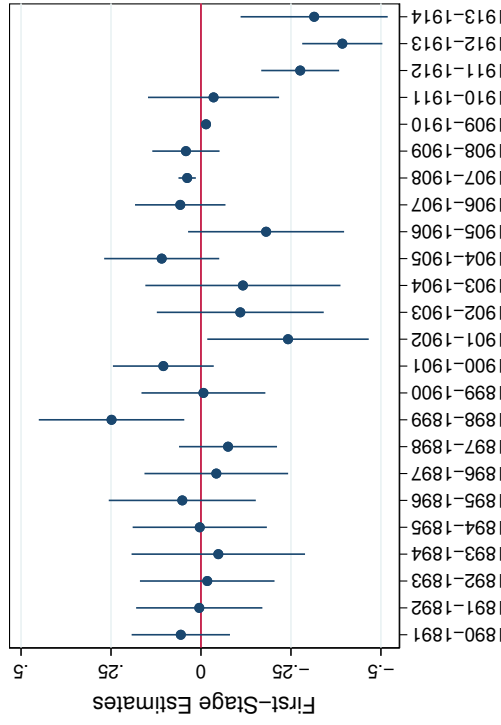
Table G.3. Military Death Rates and Pre-War Characteristics

Dependent variable:	Instruments					
	(1)	(2)	(3)	(4)	(5)	(6)
FLFP	-0.11 [0.22]	-0.11 [0.20]	0.14 [0.12]	0.14 [0.12]	-0.02 [0.18]	0.00 [0.18]
Rural		-0.06 [0.12]		-0.09 [0.07]		0.09 [0.10]
Born in dép.		-0.12 [0.15]		-0.11 [0.09]		-0.14 [0.14]
Instrument	1	1	2	2	3	3
Départements	87	87	87	87	87	87
R <sup>2</sup>	0.746	0.757	0.732	0.750	0.395	0.407

*Notes.* This table reports OLS estimates from regressing the instruments on characteristics measured in 1911. The dependent variable is an instrument: the ratio of the class 1911 to the class 1912 in Columns 1 and 2, the ratio of the class 1912 to the class 1913 in Columns 3 and 4, and the ratio of the class 1913 to the class 1914 in Columns 5 and 6. *FLFP* denotes female labor force participation in percent; *Rural*, the share of rural population in percent; *Born in dép.*, the share of population born in the département in percent. Robust standard errors are in brackets.



(a) First-Stage Estimates



(b) IV Estimates

Figure G.1. All Class Ratios

Notes. This figure reports first-stage estimates (Panel a) and instrumental variables estimates (Panel b) with all class ratios as instruments. Each category is a class ratio. For instance, 1890-1891 corresponds to the coefficient when the instrument is the ratio of the class 1890 to the class 1891. In Panel b, an estimate of 2 or -2 is out of the range of the figure. Vertical lines indicate 95 percent intervals around the estimate.

Table G.4. Impact of WWI Military Fatalities on FLFP: IV Estimates

Dependent variable:	FLFP										MLFP	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Death rate $\times$ post	0.54*** [0.13]	0.55*** [0.13]	0.48*** [0.17]	0.30*** [0.11]	0.68*** [0.25]	0.58*** [0.14]	0.79*** [0.19]	0.49*** [0.13]	1.07*** [0.34]	0.61*** [0.11]	0.09 [0.11]	
Controls	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Instruments	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
Specification	Baseline	No controls	Dép.-specific trends	Region $\times$ year FE	Residual measure	Empl.	Female farm owners	No war dépt.	Correct. measure	Pop. weights	Male placebo	
Difference from baseline	0.00 [0.19]	0.00 [0.19]	-0.07 [0.22]	-0.25 [0.17]	0.14 [0.28]	0.04 [0.19]	0.24 [0.23]	-0.06 [0.18]	0.53 [0.37]	0.06 [0.17]	-0.45*** [0.17]	
OLS estimates	0.35*** [0.07]	0.37*** [0.08]	0.40*** [0.15]	0.21*** [0.08]	0.23** [0.09]	0.38*** [0.07]	0.45*** [0.10]	0.28*** [0.07]	0.55*** [0.13]	0.48*** [0.07]	-0.01 [0.06]	
Observations	609	609	609	609	609	609	522	532	609	609	609	609
Départements	87	87	87	87	87	87	87	76	87	87	87	87
Within R <sup>2</sup>	0.567	0.565	0.824	0.796	0.484	0.570	0.582	0.617	0.537	0.631	0.669	
KPW F-statistic	27.350	27.092	23.171	8.022	16.207	27.350	27.187	19.864	24.578	47.358	27.350	
1911 mean	31.4	31.4	31.4	31.4	31.4	31.1	51.5	30.5	31.4	35.7	93.2	

Notes. This table reports IV coefficients from estimating Specification 1 with all three class ratios as instruments. OLS estimates from Table 3 are also reported for comparison. All regressions include département and year fixed effects. *FLFP* denotes female labor force participation in percent. Controls include the share of rural population in percent and the share of population born in the département in percent. Census years are 1901, 1906, 1911, 1921, 1926, 1931, and 1936. See Table 3 notes for more details on the specifications. The *KPW F-statistic* is the Kleibergen-Paap Wald rk F-statistic. Standard errors are in brackets and are clustered at the département level. \*\*\* Significant at the 1 percent level.

Table G.5. First-Stage Estimates

A. IV Specification 1					
Dependent variable:	Military Death Rate $\times$ Post				
	(1)	(2)	(3)	(4)	(5)
Ratio class 1911 $\times$ post	-1.51*** [0.15]				-0.50*** [0.14]
Ratio class 1912 $\times$ post		-2.22*** [0.49]			-0.47 [0.29]
Ratio class 1913 $\times$ post			2.26*** [0.35]		0.54** [0.24]
Ratio class 1914 $\times$ post				1.88*** [0.20]	0.98*** [0.18]
KPW F-statistic	107.73	20.52	42.83	88.97	212.27
B. IV Specification 2					
Dependent variable:	Military Death Rate $\times$ Post				
	(1)	(2)	(3)	(4)	(5)
Ratio class 1911 $\times$ post	0.04 [0.09]				-0.10** [0.04]
Ratio class 1912 $\times$ post		0.23*** [0.05]			-0.14** [0.07]
Ratio class 1913 $\times$ post			0.21*** [0.03]		0.10* [0.05]
Ratio class 1914 $\times$ post				0.21*** [0.02]	0.21*** [0.04]
KPW F-statistic	0.19	17.85	40.67	75.36	32.87

*Notes.* This table reports first-stage coefficients. All regressions include département and year fixed effects, and controls for the share of rural population in percent and the share of population born in the département in percent. The dependent variable is military death rates. All regressions contain 87 départements. Census years are 1901, 1906, 1911, 1921, 1926, 1931, and 1936. The *KPW F-statistic* is the Kleibergen-Paap Wald rk F-statistic. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level.

\* Significant at the 10 percent level.

Table G.6. Instrumental Variable Estimates

A. IV Specification 1						
Dependent variable:	FLFP					
	OLS	IV				
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate $\times$ post	0.35*** [0.07]	0.64*** [0.15]	0.32* [0.17]	0.62*** [0.17]	0.52*** [0.12]	0.55*** [0.13]
Instrument	No	1	2	3	4	1-4
Difference with OLS	0.00	0.28* [0.17]	-0.04 [0.18]	0.26 [0.18]	0.17 [0.14]	0.20 [0.15]

B. IV Specification 2						
Dependent variable:	FLFP					
	OLS	IV				
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate $\times$ post	0.35*** [0.07]	-4.47 [11.05]	0.29** [0.15]	0.40*** [0.11]	0.40*** [0.10]	0.50*** [0.11]
Instrument	No	1	2	3	4	1-4
Difference with OLS	0.00	-4.83 [0.17]	-0.07 [0.16]	0.04 [0.13]	0.04 [0.12]	0.15 [0.13]

*Notes.* This table reports IV coefficients from estimating Specification 1 with class ratios as instruments. All regressions include département and year fixed effects, and controls for the share of rural population in percent and the share of population born in the département in percent. *FLFP* denotes female labor force participation in percent. All regressions contain 87 départements. Census years are 1901, 1906, 1911, 1921, 1926, 1931, and 1936. Standard errors are in brackets and are clustered at the département level.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level.

\* Significant at the 10 percent level.

## H. Family Formation and Educational Attainment

In this section, we explore the impact of WWI military fatalities on family formation and educational attainment, outcomes that are better measured toward the end of the life cycle. We use two sources with individual-level information: the family survey of 1954 and the census of 1968.

Each of these two sources enables us to study different aspects of the impact of WWI on family formation and educational attainment. The family survey of 1954 was conducted on a sample of about 40,000 women born between 1899 and 1908, the cohorts of women most directly affected by marriage market disruptions generated by the war—these women were 13 to 22 in 1921 and 28 to 37 in 1936. This survey contains detailed information on their marriage and fertility histories, but has two limitations: it focuses on married women only, and provides respondents regions of residence but not their départements of residence. We thus aggregate département-level information, such as military death rates, at the region level, using département populations as weights in the aggregation process. The census of 1968 is a 25 percent sample of the population. It contains information on years of schooling and marital status, but not on marital or fertility histories. For consistency with results using the 1954 family survey, we focus on the cohorts 1899–1908 in the census of 1968, which were then aged 60 to 69.

In contrast with the analyses in the article, we cannot use a difference-in-differences strategy because we do not have individual-level information on family formation and educational attainment before the war—studying older cohorts would lead to severe attrition given that the first census for which individual-level data are available is 1962. We therefore estimate the following type of cross-sectional regressions:

$$(H.1) \quad Y_{i,d} = \beta \text{death\_rate}_d + \gamma_1 \mathbf{X}'_i + \gamma_2 \widetilde{\mathbf{X}}'_{1911,d} + \varepsilon_{i,d},$$

where  $Y_{i,d}$  is a family formation or educational attainment outcome of woman  $i$  residing in département  $d$ ,  $\mathbf{X}'_i$ , a set of year of birth fixed effects, and  $\widetilde{\mathbf{X}}'_{1911,d}$ , a vector of pre-war characteristics capturing the systematic determinants of mil-

itary death rates.<sup>11</sup> To make the conditional independence assumption more plausible, we include military region fixed effects when using census data. This enables to effectively compare women in neighboring départements.

### ***H.1. Family Formation***

Year-specific estimates in Figure A.4 reveal that marriage market conditions remained perturbed throughout the interwar period. We explore this phenomenon in more details. Using the family survey of 1954, we find that in regions that experienced military death rates of 20 percent rather than 10 percent, women delayed marriage by about one year (Table H.1, Column 1). This result confirms those in Abramitzky, Delavande, and Vasconcelos (2011, 148), which find that women in these regions delayed marriage by about 10 months. However, in contrast to Abramitzky, Delavande, and Vasconcelos (2011), we find that men also delayed marriage, slightly increasing the spousal age gap (Column 2). A likely explanation is that the younger men died in these regions, increasing the average age in the pool of single males. Moreover, we find no evidence that women in regions more affected by the war “married up” as the professional status of their husbands was similar across regions (Column 3). These women did however ended up having less children, although the magnitude of this effect is very small (Column 4). These marriage market effects were not permanent, however, as rates of definitive singlehood remained equal across départements (Column 5).

### ***H.2. Completed Education***

The analysis in Appendix B shows that women entered blue-collar occupations and self-employment after the war, especially in the industrial sector. These findings suggest that these women might have sacrificed their educational investment out of sheer necessity after the war. We now explore this possibility. We measure completed education by the number of years of schooling and report

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<sup>11</sup>This vector contains the share of rural population, the share of population that was born in the département, female labor force participation rate, and average wealth per inhabitant, all measured in 1911.

Table H.1. Family Formation and Educational Attainment, Cohorts 1899–1908

Dependent variable:	Bride’s age	Spousal age gap	Husband high class	Number of children	Definitive singlehood	Years of schooling
	(1)	(2)	(3)	(4)	(5)	(6)
Death rate	0.11*** [0.03]	0.06** [0.03]	-0.00 [0.00]	-0.05*** [0.01]	0.06 [0.08]	-0.39 [0.55]
Pre-war controls (1911)	Yes	Yes	Yes	Yes	Yes	Yes
Military region FE	No	No	No	No	Yes	Yes
Survey or census year	1954	1954	1954	1954	1968	1968
Age at measurement	46–55	46–55	46–55	46–55	60–70	60–70
Observations	40,688	40,688	40,688	40,688	639,052	639,052
R <sup>2</sup>	0.015	0.006	0.125	0.042	0.003	0.023
Outcome mean	23.78	2.98	0.06	2.33	0.09	5.83

*Notes.* This table reports OLS coefficients from estimating Specification H.1. The dependent variable is bride’s age at first marriage in Column 1, spousal age difference between bride and groom at bride’s first marriage in Column 2, an indicator for whether the groom has a high status socio-professional category in Column 3, the number of children ever born in Column 4, an indicator for whether a woman is single in Column 5, and the number of years of schooling in Column 6. All regressions include controls for pre-war characteristics and year of birth fixed effects. Robust standard errors are in brackets, and are clustered at the département level in Columns 5 and 6.

\*\*\* Significant at the 1 percent level. \*\* Significant at the 5 percent level.

results in Table H.1, Column 6. We find no evidence that women in départements relatively more affected by the war exhibited differences in educational attainment.

## I. Measuring Military Death Rates

We assembled a novel dataset to build a precise measure of military death rate at the département level. We collected data for all French soldiers who died because of the war from the *Mémoire des Hommes* (MDH) archive maintained by the Ministry of Defense. The archive contains information about soldiers who received the mention “Mort pour la France” (“Died for France”), and those who did not. The mention “Mort pour la France” was given to all soldiers who died because of the war, except to those who died following an execution by the military due to treason, desertion, or mutiny. The mention was created by the law of July 2, 1915, which stipulates that “[t]he death certificate of a servicemen of the army or the navy killed in combat or dead from injuries or a disease sustained on the battlefield [...] shall [...] contain the mention: ‘Died for France’ ” (*Journal*



*Officiel de la République Française, Lois et Décrets*, 47(184), 4653, dated July 9, 1915). We recorded all soldiers from the MDH archive and extracted their dates of birth, départements of birth, and départements of recruitment. We then excluded soldiers born outside of France, and removed duplicates.<sup>12</sup>

Other article also use a measure of military death rates from WWI in France as their key explanatory variable. For instance, Abramitzky, Delavande and Vasconcelos (2011) and Vandembroucke (2014) use military death rates across 22 military regions from Huber (1931, 426). Our measure has several advantages over the one in Huber (1931). First, it is based on individual-level data rather than aggregated data at the regional level. Second, the aggregated information presented in Huber (1931) are based on a military report to the Assemblée Nationale in 1920 (Marin, 1920), the purpose of which was to assess funding needs to provide financial assistance to war widows. Information in this report was based on estimates made in early 1919, and the accuracy of which has been largely challenged by historians—providing a precise account of military fatalities was extremely difficult only a few months after the end of the war because of the disorganization of the army (Prost, 2008). Finally, our data enables us to compute the military death rate for each of the 87 départements, instead of assigning a value from 22 military regions to each département.<sup>13</sup> With this disaggregated information, we are able to precisely estimate the impact of WWI military fatalities on female labor force participation. Using information from Huber (1931, 426) to replicate our main result generates a point estimate of 0.30, which is close to our baseline of 0.35 from Table 3, Column 1. This estimate is however much less precise: its standard error is 0.23, with a p-value of 0.20. Therefore, absent of our new dataset, it is unlikely that our study would have been possible.

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<sup>12</sup>Officers were more likely to have duplicate records. We also included the 95,000 soldiers who died without the mention “Mort pour la France.”

<sup>13</sup>Gilles, Guironnet and Parent (2014) also use the MDH database to study the geography of military fatalities in France.

## J. Data Appendix

### *J.1. Demographic Data*

**Adult sex ratio (aggregate level)** The adult sex ratio is the number of French men aged 15 to 50 for every 100 French women aged 15 to 50. The data are all censuses between 1901 and 2012.

**Population (total, by sex, age, and marital status)** The data for the resident population by sex, age, and marital status are available from the same census tables. Data by age are generally given in 5-year age intervals. These data are also used to build sex ratios by age.

- 1901: *Résultats statistiques du recensement de la population 1901*, Partie 2, *Tableau VII, Population présente totale suivant le sexe, l'état de famille et l'âge, par département* (pp. 366–407).
- 1906: *Résultats statistiques du recensement de la population 1906*, Partie 2, *Tableau IV, Population présente totale suivant le sexe et l'année de naissance, par département* (pp. 154–165), and *Tableau V, Population présente totale suivant le sexe, l'état matrimonial et l'âge, par département* (pp. 166–169).
- 1911: *Résultats statistiques du recensement de la population 1911*, Partie 2, *Tableau VII, Population présente totale suivant le sexe, l'état matrimonial et l'année de naissance, par département* (pp. 98–137).
- 1921: *Résultats statistiques du recensement de la population 1921*, Partie 2, *Tableau V, Population présente totale suivant le sexe, l'âge et le degré d'instruction* (pp. 84–91), and *Tableau VI, Population présente totale suivant le sexe, l'état matrimonial et l'âge* (pp. 92–99).
- 1926: *Résultats statistiques du recensement de la population 1926*, Partie 2, *Tableau III, Population présente totale suivant le sexe et l'âge* (pp. 82–89), and *Tableau IV, Population présente totale suivant le sexe, l'état matrimonial et l'âge* (pp. 90–97).
- 1931: *Résultats statistiques du recensement de la population 1931*, Partie 2, *Tableau IV, Population présente totale suivant le sexe et l'âge* (pp. 82–89),

and *Tableau V, Population présente totale suivant le sexe, l'état matrimonial et l'âge* (pp. 90–97).

- 1936: *Résultats statistiques du recensement de la population 1936*, Partie 2, *Tableau V, Population présente totale suivant le sexe et l'âge* (pp. 86–93), and *Tableau VI, Population présente suivant le sexe, l'état matrimonial et l'âge* (pp. 94–101).

**Population density (per km<sup>2</sup>)** The population per square km in 1911 combines the resident population by département in 1911 (see above) and départements' size in square km from *Annuaire Statistique de la France 1913, Tableau 1, Superficie, population et densité de la population par département en 1911* (p. 3). The original data source is from *Service Géographique de l'armée*, 1897.

**Share of rural population (%)** The share of rural population combines the resident population by département (see above) with the “rural population”, that is, the population that lives in municipalities with less than 2,000 inhabitants. This definition has been fixed across the censuses 1901 to 1936.

- 1901: *Résultats statistiques du recensement de la population 1906*, Partie 1, *Tableau IV, Migrations intérieures, excédent d'émigration ou d'immigration* (pp. 84–99).
- 1906: *Résultats statistiques du recensement de la population 1911*, Partie 1, *Tableau IV, Migrations intérieures, excédents d'émigration ou d'immigration* (pp. 74–89).
- 1911, 1921, 1926: *Résultats statistiques du recensement de la population 1926*, Partie 1, *Tableau V, Population urbaine et rurale par département, en 1872, 1911, 1921 et 1926* (p. 102).
- 1931, 1936: *Résultats statistiques du recensement de la population 1936*, Partie 1, *Tableau V, Population urbaine et rurale par département, en 1936, 1931, 1911 et 1872* (p. 82).

**Share of population born in the département (%)** The share of population born in the département combines the population born in the département,

and the population by département (see above).

- 1901: *Résultats statistiques du recensement de la population 1901, Partie 2, Tableau X, Français par département, suivant le lieu de naissance*, (pp. 426–429).
- 1906: *Résultats statistiques du recensement de la population 1906, Partie 2, Tableau VI, Population présente totale suivant le sexe, la nationalité et le lieu de naissance, par département* (pp. 170–173).
- 1911: *Résultats statistiques du recensement de la population 1911, Partie 2, Tableau VIII, Population présente totale par département suivant le lieu de naissance des Français et la nationalité des étrangers* (pp. 138–141).
- 1921: *Résultats statistiques du recensement de la population 1921, Partie 2, Tableau VII, Population présente totale suivant le sexe, le lieu de naissance des Français, la nationalité des étrangers* (pp. 100–107).
- 1926: *Résultats statistiques du recensement de la population 1926, Partie 2, Tableau VI, Population présente totale suivant le sexe et le lieu de naissance* (pp. 106–109).
- 1931: *Résultats statistiques du recensement de la population 1931, Partie 2, Tableau VII, Population présente suivant le sexe et le lieu de naissance* (pp. 106–109).
- 1936: *Résultats statistiques du recensement de la population 1936, Partie 2, Tableau VIII, Population présente totale suivant le sexe et le lieu de naissance* (pp. 110–113).

### **Share of women born in their département of residence by labor status**

Data for the share of women born in their département of residence for all women and by labor status at the national level are from the censuses between 1901 and 1936.

- 1901: *Résultats Statistiques du recensement de la population 1901, Population Active, Tableau VI, Population active par grande catégories professionnelles suivant la date et le lieu de naissance, la nationalité, la situation de famille, l'instruction* (pp. 510–511).

- 1906: *Résultats Statistiques du recensement de la population 1906, État Civil de la Population Active, Tableau I, Population active par grandes catégories professionnelles suivant la date et le lieu de naissance, la nationalité, l'état matrimonial, l'instruction* (pp. 62–63).
- 1911: *Résultats Statistiques du recensement de la population 1911, Population Active, Tableau II, Population active par grandes catégories professionnelles suivant la date et le lieu de naissance, la nationalité, l'état matrimonial et l'instruction* (pp. 70–71).
- 1921: *Résultats Statistiques du recensement de la population 1921, Population Active, État Civil, Tableau I, Population active par grandes catégories professionnelles suivant la date et le lieu de naissance, l'état matrimonial combiné avec l'âge et le degré d'instruction* (pp. 38–39).
- 1926: *Résultats Statistiques du recensement de la population 1926, Population Active, État Civil, Tableau I, Population active par grandes catégories professionnelles suivant la date et le lieu de naissance, l'état matrimonial combiné avec l'âge et le degré d'instruction* (pp. 38–39).
- 1931: *Résultats Statistiques du recensement de la population 1931, Population Active, État Civil, Tableau I, Population active par grandes catégories professionnelles suivant la date et le lieu de naissance, l'état matrimonial combiné avec l'âge, le degré d'instruction* (pp. 30–31).
- 1936: *Résultats Statistiques du recensement de la population 1936, Population Active, État Civil, Tableau I, Population active par grandes catégories professionnelles suivant la date et le lieu de naissance, l'état matrimonial combiné avec l'âge, le degré d'instruction* (pp. 32–33).

**Age (years)** The average age in a département in 1911 is computed as a weighted average, where weights are shares of the population in each 5-years age bin provided by the census (see above for data sources) and where we assign the midpoint of the age bin as the relevant age for the bin.

**Height (cm)** Height of conscripts of the class 1911 at the time of recruitment is available in one-cm intervals, so we compute a weighted average height

the same way as we compute the average age (see above). The data source is *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1912, Tableau O, Énumération des différents degrés de taille des jeunes gens de la classe 1911 maintenus sur les tableaux de recensement* (pp. 90–91).

**Male population of classes 1911, 1912, 1913, and 1914 in 1911** These variables are used to build the instrumental variables. They are from the Part 4 of the *Résultats statistiques du recensement de la population 1911*—one table for each département.

**Bilateral migration flows in 1911** To correct the measure of military death rates by bilateral migration flows across départements, we collected data of the number of residents that were born in each of the other départements in the census of 1911. Data are from the *Résultats Statistiques du Recensement Général de la Population 1911, Tome I, Partie 4, Tableau I*.

**Mortality rate** We define the mortality rate in a département as the ratio of death of people aged 65 and below to the population aged 65 and below. Mortality data are from volumes of the *Statistique Annuelle du Mouvement de la Population*.

**Spanish Flu fatalities** The number of civilian fatalities from the Spanish Flu is from the 1918 and 1919 volumes of the *Statistique Sanitaire de la France*:

- Spanish Flu fatalities in 1918: *Statistique Sanitaire de la France, 2e Partie—Communes de Moins de 5.000 Habitants et France Entière, Année 1918*, Table IV, *Répartition globale par départements et par groupements entre les villes de 5.000 habitants et au-dessus et les communes de moins de 5.000 habitants*, pp. 246–253.
- Spanish Flu fatalities in 1919: *Statistique Sanitaire de la France, 2e Partie—Communes de Moins de 5.000 Habitants et France Entière, Année 1919*, Table IV, *Répartition globale par départements et par groupements*

*entre les villes de 5.000 habitants et au-dessus et les communes de moins de 5.000 habitants*, pp. 246–253.

## ***J.2. Labor Data***

**Female, male, and foreign labor force participation (%)** The female labor participation rate is computed as the ratio of the number of active women to the number of women aged 15 and above. The male labor force participation rate is computed analogously, and the data are from the same tables. As explained in the article, we remove female farm owners to build the main measure of female labor force participation. The labor force participation of foreigners is also available from these tables.

- 1901: *Résultats statistiques du recensement de la population 1901*, Partie 3, *Tableau XXXIV, Population active suivant la position, par grandes catégories professionnelles et par département* (pp. 862–873).
- 1906: *Résultats statistiques du recensement de la population 1906*, Partie 3, *Tableau VIII, Population active suivant le sexe et la situation par grande catégorie professionnelles et par département* (pp. 256–267).
- 1911: *Résultats statistiques du recensement de la population 1911*, Partie 3, *Tableau XXVII, Population active par grandes catégories professionnelles, suivant la position par département* (pp. 156–167).
- 1921: *Résultats statistiques du recensement de la population 1921*, Partie 3, *Tableau XII, Population active suivant le sexe et la situation par grandes catégories professionnelles en 1921* (pp. 160–171).
- 1926: *Résultats statistiques du recensement de la population 1926*, Partie 3, *Tableau VIII, Population active suivant le sexe et la situation, par grandes catégories professionnelles, en 1926* (pp. 164–175).
- 1931: *Résultats statistiques du recensement de la population 1931*, Partie 3, *Tableau VIII, Population active suivant le sexe et la situation, par grandes catégories professionnelles, en 1931* (pp. 470–481).

- 1936: *Résultats statistiques du recensement de la population 1936*, Partie 3, *Tableau VIII, Population active suivant le sexe et la situation, par grandes catégories professionnelles, en 1936* (pp. 170–181).

**Female labor force participation by decennial age group (%)** Female labor force participation rates by decennial age group (20–29, 30–39, and 40–49) can be constructed from various tables from the censuses of 1901, 1921, 1926, 1931, and 1936:

- 1901: for each decennial age group, we aggregate the number of working women in each industry from the département-specific Table VI, *Population active par grande catégorie professionnelle suivant la date et le lieu de naissance, la nationalité, la situation de famille, l'instruction* in the *Résultats statistiques du recensement général de la population*, 1901, Parties 1–3.
- 1921–1936: for each decennial age group, we aggregate the number of working women in each occupation from the following tables:
  - *Chefs d'établissement suivant l'âge.*
  - *Employés suivant l'âge.*
  - *Ouvriers suivant l'âge.*
  - *Employés et ouvriers sans emploi suivant l'âge.*
  - *Isolés suivant l'âge.*

These tables are available in the following volumes:

- 1921: *Résultats statistiques du recensement de la population*, 1921, *Tableau XIX to Tableau XXIII*, Partie 4 (pp. 112–131).
- 1926: *Résultats statistiques du recensement de la population*, 1926, *Tableau XVIII to Tableau XXII*, Partie 4 (pp. 76–95).
- 1931: *Résultats statistiques du recensement de la population*, 1931, *Tableau XVIII to Tableau XXII*, Partie 4 (pp. 68–87).
- 1936: *Résultats statistiques du recensement de la population*, 1936, *Tableau XVIII to Tableau XXII*, Partie 4 (pp. 70–89).



**Female Labor Force Participation of Widows** Information on widows employment status is available in the family surveys of 1901, 1926, and 1936:

- 1926: *Statistique des Familles en 1926, Tableau XVI, Familles d'après le nombre des enfants survivants d'un âge déterminé combiné avec la nationalité, la situation dans la profession et l'état matrimonial du chef de famille*, pp. 160–341.
- 1936: *Statistique des Familles en 1936, Familles classées d'après le nombre des enfants survivants*, pp. 34–397.

**Female wages: textile manufacturing sector** Hourly female wages for occupations in the textile manufacturing sectors in francs are available at the city level for the years 1901, 1906, 1911, 1921, and 1926. This information is only available throughout the period for three occupations: ironer, seamstress, and milliner. It is also available for other occupations (laundress, lacemaker, embroider, and vest maker) but only for the 1920s. Wage information at the female occupation level is not available for the 1930s. Data are available across 188 cities on average: the départements administrative centers (*chef-lieux*) and other cities in each départements (those with *Conseils des prud'hommes*). Although cities change from survey to survey, the city-composition of surveys do not affect results—they are similar when keeping cities constant over time.

- 1901: *Bordereaux de salaires pour diverses catégories d'ouvriers en 1900 et 1901, 1902, Tableau II, Salaires ordinaires des ouvriers de diverses professions en 1901, d'après les renseignements fournis par les Conseils de prud'hommes et par les Maires des chefs-lieux de départements où il n'existe pas de Conseils de prud'hommes* (pp. 126–180). This source provides information across 167 cities. Whenever wages are given separately for the winter and the summer seasons, we take the average.
- 1906: *Salaires et durée du travail, coût de la vie, pour certaines catégories d'ouvriers en 1906, 1907, Tableau I, Salaires des ouvriers de quelques professions en 1906 d'après les renseignements fournis par les Conseils de prud'hommes (par les Maires à défaut de Conseil de prud'hommes)* (pp.

242–289). This source provides information across 184 cities. Whenever wages are given separately for the winter and the summer seasons, we take the average.

- 1911: *Salaires et coût de l'existence à diverses époques jusqu'en 1910, 1911, Tableau I, Salaires des ouvriers de quelques professions en 1911 d'après les renseignements fournis par les Conseils de prud'hommes (par les Maires à défaut de Conseil de prud'hommes)* (pp. 114–161). This source provides information across 189 cities. Whenever wages are given separately for the winter and the summer seasons, we take the average.
- 1921: *Bulletin de la Statistique Générale de France*, Tome 10, Fascicule 4, July 1921, *Annexe I, Salaires horaires ordinaires de quelques catégories d'ouvriers au début de l'année 1921 d'après les évaluations fournies par les conseils de prud'hommes ou, à défaut, par les maires* (pp. 362–371). This source provides information across 186 cities.
- 1926: *Bulletin de la Statistique Générale de France*, Tome 16, Fascicule 2, January 1927, *Annexe, Salaires horaires ordinaire de quelques catégories d'ouvriers en octobre 1926 d'après les évaluations fournies par les Conseils de prud'hommes ou, à défaut, par les maires* (pp. 176–185). This source provides information across 210 cities.

**Female wages: domestic services sector** Annual female wages for occupations in the domestic services sector in francs are available at the city level for the years 1913 and 1921. This information is available for four female occupations: cook, aid cook, housekeeper, and maid. We only use the two occupations for which there is a precise male substitute: cook and housekeeper. Data are available across 282 cities on average: départements' administrative centers (*chef-lieux*) and cities with more than 10,000 inhabitants. Although cities change from survey to survey, the city-composition of surveys do not affect results—they are similar when keeping cities constant over time.

- 1913: *Bulletin de la Statistique Générale de France*, Tome 2, Fascicule 4, July 1913, *Salaires annuels des domestiques et gens de maisons, dans les chefs-lieux de départements et les villes de plus de 10 000 habitants, d'après les estimations*

fournies par les maires au cours du 1er trimestre 1913 (pp. 372–383). This source provides information across 288 cities.

- 1921: *Bulletin de la Statistique Générale de France*, Tome 11, Fascicule 1, September 1921, *Salaires annuels ordinaire en argent des domestiques et gens de maison nourris et logés, d’après les évaluations fournies en 1921 par les maires* (pp. 49–56). This source provides information across 274 cities.

### **Operating firms during the war, male and female labor during the war**

Data for the number of operating firms, and male, and female labor between 1914 and 1921 are from seven industrial surveys. Data sources are various issues of the *Bulletins du Ministère du Travail et de la Prévoyance sociale*: 1917 (p. 433), 1918 (pp. 3, 106, 113, 467, 473), 1919 (pp. 118, 125, 450, 457), and 1920 (pp. 82, 88, 478, 484).

### ***J.3. Economic Data***

**Road density (km per km<sup>2</sup>)** Roads consist of both national roads and “rural” roads (*chemins vicinaux*). This is combined with the area of the département (see above). The data source is the *Annuaire Statistique de la France* 1913, Partie 3, Section D, a, *Tableau I, Longueur, par département, des routes nationales et chemins vicinaux au 1er janvier 1913* (pp. 152–153). The original source is *Annales des Chemins vicinaux*, May 1914, Partie 2 (pp. 62–65).

**Rail density (km per km<sup>2</sup>)** Rails consist of general rails, local rails, and tram rails. This is combined with the area of the département (see above). The data source is the *Annuaire Statistique de la France* 1913, Partie 3, Section D, b, *Tableau I, Longueur, par département, des chemins de fer et tramways exploités et en construction ou à construire, au 31 décembre 1911* (pp. 156–157). The original source is *Statistique des chemins de fer* 1911 (pp. 15–34).

**Share cultivated land (%)** The data source is the *Annuaire Statistique de la France* 1913, Partie 3, Section A, a, *Tableau III, Superficie du territoire, par*

*grandes catégories de cultures et par département, en 1912* (pp. 116–117). The original source is *Statistique agricole annuelle 1912* (pp. 4–9).

**Personal wealth (francs per inhabitant)** Total personal wealth in francs per inhabitant aggregates 13 different wealth indicators in 1908 (government stocks, obligations and bonds, stocks, interests, life insurance, savings accounts, banking accounts, buildings, etc.). The data source is Cornut (1963, p. 411).

**Banking deposits (francs per inhabitant)** The amount of banking deposits in francs per inhabitants in 1911 is from the *Annuaire Statistique de la France 1911*, Partie 4, Section E, e, *Tableau I, Tableau présentant, par département, le nombre et le montant des opérations effectuées en 1911* (pp. 266–267).

**Direct taxes (francs per inhabitant)** The amount of direct taxes collected in francs per inhabitant in 1911 is from the *Annuaire Statistique de la France 1911*, Partie 5, Section E, c, *Tableau II, Montant des contributions directes, par département, pour l'année 1911* (pp. 296–299).

**Share primary education (%)** The share of the population with a primary education is the share of conscripts with a primary education or higher at the time of recruitment in 1911. The data source is the *Annuaire Statistique de la France 1912*, Partie 2, Section E, a, *Tableau I, Degré d'instruction des jeunes gens de la classe de 1911 maintenus sur les listes de tirage* (pp. 15–16).

**Engine power (thousands of kW and per worker)** Data for engine power in thousands of kW and per worker are for the years 1901, 1906, and 1926.

- 1901 and 1906: *Statistique des Forces Motrices en 1906, Tableau V, Établissements disposant de force motrice; puissance en chevaux-vapeur des moteurs à vapeur, hydrauliques et autres, par département (1906 et 1901)*, pp. 71–72.
- 1926: *Statistique des Forces Motrices en 1926, Tableau IX, Établissements avec force motrice; puissance des moteurs en kilowatts, 1926 et 1906, récapitulation générale*, pp. 88–91.

**Estimated income of single working women and war widows** Figure A.5 displays estimated real incomes for single working women and war widows with no children between 1901 and 1936. These estimations are deflated using 1914 as the base year. We also estimated real incomes of war widows with children—these are available upon request.

- Estimated real income of single working women (without children). We use average real wage information in the textile manufacturing sector, as described earlier in this data appendix.
- Estimated real income of war widows (without children). We assume that these women had a husband who was mobilized and died because of the war. These women benefited from the laws of assistance to the wives of mobilized soldiers and to war widows.

– Assistance to wives of mobilized soldiers.

\* 1914: daily subsidy of 1.25 francs. Law of August 5, 1914, art. 1. *Journal Officiel de la République Française*, 46(213), p. 7127, August 6, 1914.

\* 1917: increase of the daily subsidy to 1.50 francs. Law of August 4, 1917.

\* 1918: increase of the daily subsidy to 1.75 francs. Law of November 15, 1918, art. 1. *Journal Officiel de la République Française*, 50(312), p. 9912, November 16, 1918.

\* 1919: monthly decrease schedule of subsidies for demobilized soldiers (Table C). Nothing after 6 months from demobilization. Law of September 30, 1919. *Journal Officiel de la République Française*, 51(266), pp. 10748–10749.

– Assistance to war widows.

\* 1919: families of dead soldiers receive subsidies provided in the law of August 5, 1914, until November 15, 1919. Law of September 30, 1919, art. 5. *Journal Officiel de la République Française*, 51(266), pp. 10748–10749.

\* 1919: war widows, and wives of disabled soldiers above 60 percent are entitled a pension (art. 14). If the widow remarries, she can renounce the pension against a lump sum of 3 annuities. If she remarries and does not renounce, she gets half of the pension (the other half goes to the children

(art. 18). The rate is fixed by art. 19 and tables p. 3393 (800 francs for soldier). Law of March 31, 1919. *Journal Officiel de la République Française*, 51(91), pp. 3382–3389, April 2, 1919.

- \* 1925: supplement to war widows' pensions of 80 percent except for remarried widows (art. 194). Retroactive from January 1, 1925. Law of July 13, 1925 (law of finance). *Journal Officiel de la République Française*, 57(164), p. 6583, July 14, 1925.
- \* 1929: modification of art. 19 of law of March 31, 1919. Pensions of non-remarried widows is half of the pensions of a disabled at 100 percent that was an equivalent position to the dead husband (for a soldier, it was 2,400 francs). However, the increase is gradual: for 1929, the increase will be equal to 50 percent of the difference between the new and the previous rate. Modification of art. 194 of the law of finance of July 13 1925: additional subsidy to war widows equivalent to 132 percent of the original subsidy (art. 80). Law of December 30, 1929 (law of finance). *Journal Officiel de la République Française*, 60(309), pp. 13665–13666, December 31, 1928.
- \* 1930: the rate of increase fixed by art. 78 of the law of finance of December 30, 1928 is now fixed at 100 percent from January 1930. Law of April 16, 1930, art. 115 (law of finance). *Journal Officiel de la République Française*, 62(93), p. 4227, April 17, 1930.

#### ***J.4. Military Data***

**Civilian fatalities during WWI** Data for civilian fatalities during WWI used in footnote 8 of the article are from Huber (1931, pp. 310–314).

**Number of soldiers mobilized outside of armed services** Data for the number of soldiers mobilized outside of armed services in war factories, mines, administrations, and agriculture throughout the war are from Fontaine (1924, p. 61).

**Class characteristics at the time of recruitment** Data for the heights and education levels of classes 1909, 1910, 1911, 1912, and 1914 at the time of

recruitment are from various issues of the *Compte Rendu sur le Recrutement de l'Armée*.

- Class of 1909: The education data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1910, Tableau M, Détails relatifs à l'instruction des jeunes gens de la classe de 1909* (pp. 82–83). The height data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1910, Tableau O, Énumération des différents degrés de taille des jeunes gens de la classe de 1909 maintenus sur les tableaux de recensement* (pp. 90–93).
- Class of 1910: The education data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1911, Tableau M, Détails relatifs à l'instruction des jeunes gens de la classe de 1910* (pp. 82–83). The height data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1911, Tableau O, Énumération des différents degrés de taille des jeunes gens de la classe de 1910 maintenus sur les tableaux de recensement* (pp. 90–93).
- Class of 1911: The education data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1912, Tableau M, Détails relatifs à l'instruction des jeunes gens de la classe de 1911* (pp. 82–83). The height data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1912, Tableau O, Énumération des différents degrés de taille des jeunes gens de la classe de 1911 maintenus sur les tableaux de recensement* (pp. 90–93).
- Class of 1912: The education data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1913, Tableau M, Détails relatifs à l'instruction des jeunes gens de la classe de 1912* (pp. 90–91). The height data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1913, Tableau O, Énumération des différents degrés de taille des jeunes gens de la classe de 1912 maintenus sur les tableaux de recensement* (pp. 98–101).
- Class of 1914: The education data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1914, Tableau K, Détails relatifs à l'instruction des jeunes gens de la classe de 1914* (pp. 112–113). The height data are from *Compte Rendu sur le Recrutement de l'Armée dans l'Année 1914, Tableau N, Énumération des différents degrés de taille des jeunes gens de la classe de 1914*

*maintenus sur les tableaux de recensement* (pp. 120–123).

**The geography of military recruitment** Maps displayed on figures E.1, E.2, and E.3 represent the geography of military recruitment that was in place from September 1899 to September 1913. We build these maps using the IGN’s GEOFLA shapefiles of *cantons* and *arrondissements* that are consistent with INSEE’s *Code Officiel Géographique* of 2011.<sup>14</sup> The composition of military regions is provided by the following decrees, and the location of recruitment bureaus is from Lassalle (1901, pp. 10–11).

- Decree 3491 which determines the territorial regions and subdivisions of regions of August 6th, 1874. *Bulletin des Lois de la République Française*, XIIe Série, 9(229), pp. 477–495.
- Decree 24603 modifies the territorial regions and subdivisions of regions of January 29th, 1892. *Bulletin des Lois de la République Française*, XIIe Série, 44(1456), pp. 239–242.
- Decree 34346 relative to the splitting of the sixth region of February 8th, 1898. *Bulletin des Lois de la République Française*, XIIe Série, 56(1957), pp. 1177–1178.
- Decree 37032 which modifies the limits of the seventh and the twentieth regions of September 6th, 1899. *Bulletin des Lois de la République Française*, XIIe Série, 59(2104), pp. 2506–2508.

**Enlistment rates of various age classes** Enlistment rates at the time of recruitment for the age class 1905 are from the *Compte Rendus sur le Recrutement de l’Armée, Tableau F, État numérique présentant, par subdivision de région, pour la classe de 1905, la composition des sept parties de la list de recrutement*. Data for the classes 1907 to 1911 are from the same table in the relevant *Compte Rendus*. The data for the class 1906 are missing.

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<sup>14</sup>These shapefiles are available at the following address: <http://professionnels.ign.fr/geofla>.



### ***J.5. Other Data***

**Distance to war (km)** The distance to the war is computed as the shortest distance between the *chef-lieu* of a département and one of the départements in which the war occurred. We assign a distance of 0 to the départements in which war combats occurred.

**Share students in religious schools (%)** The share of students in religious schools in 1906 is from the *Annuaire Statistique de la France* 1908, Partie 2, Section E, b, *Tableau I, Nombre d'enfants en âge scolaire inscrits dans une école quelconque et nombre des enfants recensés du même âge* (pp. 28–29).

**Vote in 1905 (%)** This variable corresponds to the share of députés in the Assemblée Nationale who voted against the law separating the State and the Church in 1905. Data for votes of députés is available in the *Journal Officiel de la République Française, Débats Parlementaires*, 11e Législature, Session ordinaire de 1919, pp. 2365–2366, May 20, 1919.

**Turnout in 1914** The voter turnout by département in the legislative elections of 1914 is available in the *Tableau des élections générales à la chambre des députés pour la onzième législature (26 avril et 10 mai 1914)* (1916) pp. 93–95.

**War destruction** To measure war destruction in war territories, we collected various variables for the ten relevant départements from Michel (1932). Data for the share of damaged territory are from Table 56, p. 91, those for the share of damaged cities are from Table 58, p. 93, and those for the share of damaged agricultural land are from Table 104, p. 227. Data for the shares of damaged houses are from Table 144, p. 279, those for the share of damaged factories are from Table 202, p. 359, and those for the share of damaged public buildings are from Table 142, p. 274.

**Intensity of the reconstruction effort** To measure the intensity of the reconstruction effort in war territories, we compute the share of the pre-war stock that was rehabilitated or reconstructed for every year between 1920 and 1928

using data from Michel (1932). The data for the rehabilitated areas are from Table 89, p. 213, those for the rehabilitated agricultural land are from Table 105, p. 228, those for the reconstructed houses are from Table 144, p. 279, those for the reconstructed factories are from Table 203, p. 360, and those for the reconstructed public buildings are from Table 150, p. 288.

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