A Online Appendices for "Did Karl Marx Party in 1891? The Effect of SPD's Erfurt Program on Karl Marx's Citations"

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A.1 Empirical analysis of citations of primary SPD figures – Bebel, Kautsky, & Bernstein

If the promulgation of the Erfurt Program increased the renown of Karl Marx, it follows that the authors of the Erfurt Program are likely to have been mentioned or cited themselves at higher rates. Therefore, we proceed to test the effect of the 1891 Erfurt Program on German Ngram citations of its three authors – Karl Kautsky, August Bebel, and Eduard Bernstein. All tests are performed using German-language Google Ngrams.

In each iteration, to avoid spillover effects, we omit Karl Marx from the donor pool, as well as the other two authors. We also omit all other socialists due to the near-simultaneous repeal of the Anti-Socialist Laws. As noted in the main paper, this means we will estimate a double treatment effect , and therefore, an upper-bound effect of the Erfurt Program alone.

For each author, we estimate treatment effects in both 1891 and 1917 so that results can be compared to Marx's treatment effects in those same years. We use the same model specification – such as choice of indicator variables – as was used for Marx in the main paper. The graphs for the 1891 treatment effect are visually extended to 1932, but the p-values are estimated only for the period 1891-1901.

We thus perform six synthetic control regressions - three authors and two treatment years. Unfortunately, *synth* would not numerically converge for some of these regressions when using the full precision mode (*nested allopt*). Sometimes, it is possible to achieve convergence by slightly altering the model specification, such as by changing the set of indicator variables. However, doing so would threaten to make these appendix results incommensurable with the main results. Instead, we chose to use a lower precision mode. The full precision mode iteratively optimizes the author weights (W-matrix) and indicator weights (V-matrix) conditional on each other. By contrast, the lower precision mode first estimates the indicator weights (V-matrix) by regression and then optimizes only the author weights (W-matrix) with respect to the now-fixed indicator weights.[1] We considered it better to estimate the same model specification with reduced precision rather than a different, potentially incomparable model specification with higher precision.

[1] See the Stata *synth* help file, s.v. "nested." See also *ibid.*, s.v. "allopt."

As we shall see, there is no evidence that the three authors of the Erfurt Program experienced increases in their own citations after 1891.

A.1.1 Karl Kautsky

In figure A.1, we present the graph for Karl Kautsky with treatment in 1891. Visually, there is no effect. Indeed, in table A.1, we see that the overall p-values are 0.322, 0.653, and 0.561. It appears that the Erfurt Program had no effect on Karl Kautsky's citations.

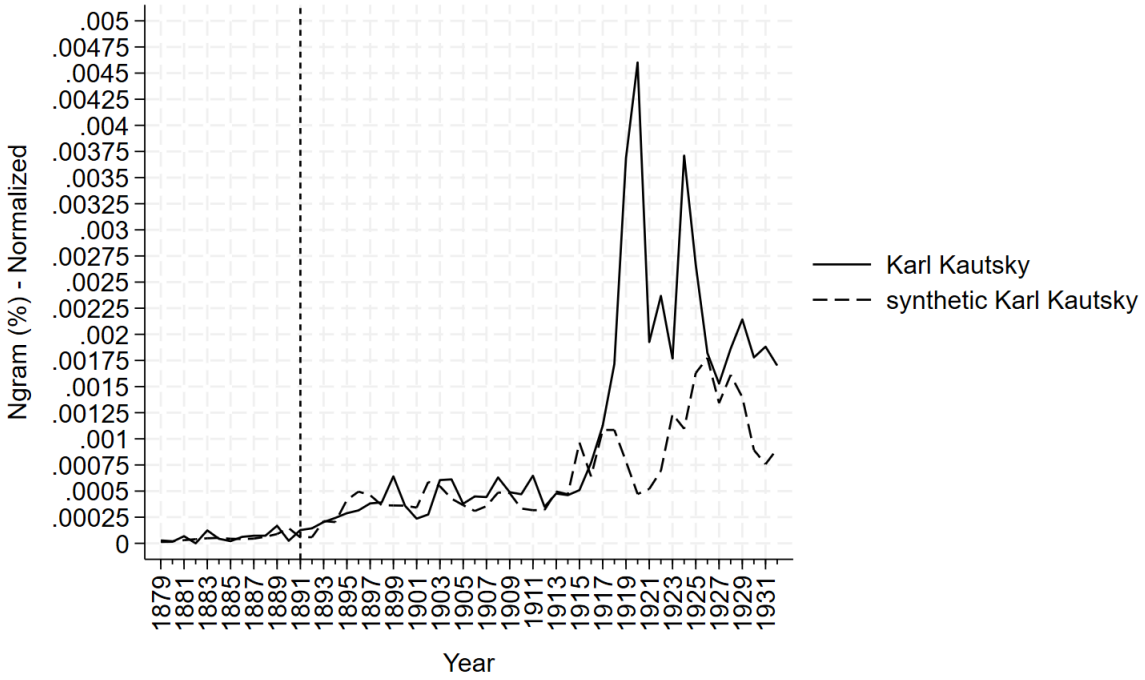

Figure A.1: Karl Kautsky, German Ngram cites, treatment 1891: actual vs. synth counterfactual

Table A.1: Karl Kautsky, German Ngram cites, treatment 1891: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.322	0.653	0.561
1891	0.276				
1892	0.271				
1893	0.905				
1894	0.623				
1895	0.296				
1896	0.151				
1897	0.332				
1898	0.749				
1899	0.151				
1900	1				
1901	0.357				

Next, in figure A.2 we present the graph for Karl Kautsky with treatment in 1917. This time, there appears to be a striking treatment effect, comparable to Marx's own. In table A.2, the overall p-values are 0.010, 0.013, and 0.016.

Perhaps the large increase in Kautsky's citations in 1917 is due to Lenin's 1918 pamphlet, *The Proletarian Revolution and the Renegade Kautsky* (alternately, *The Dictatorship of the Proletariat and the Renegade Kautsky*), itself a response to Kautsky's 1918 pamphlet, *The Dictatorship of the Proletariat*.

In any case, the absence of any treatment effect in 1891 combined with the large treatment effect in 1917 suggests that the 1891 Erfurt Program failed to affect Kautsky's renown. And if the Erfurt Program failed to popularize one of its own authors, it is unlikely to have popularized Marx either.

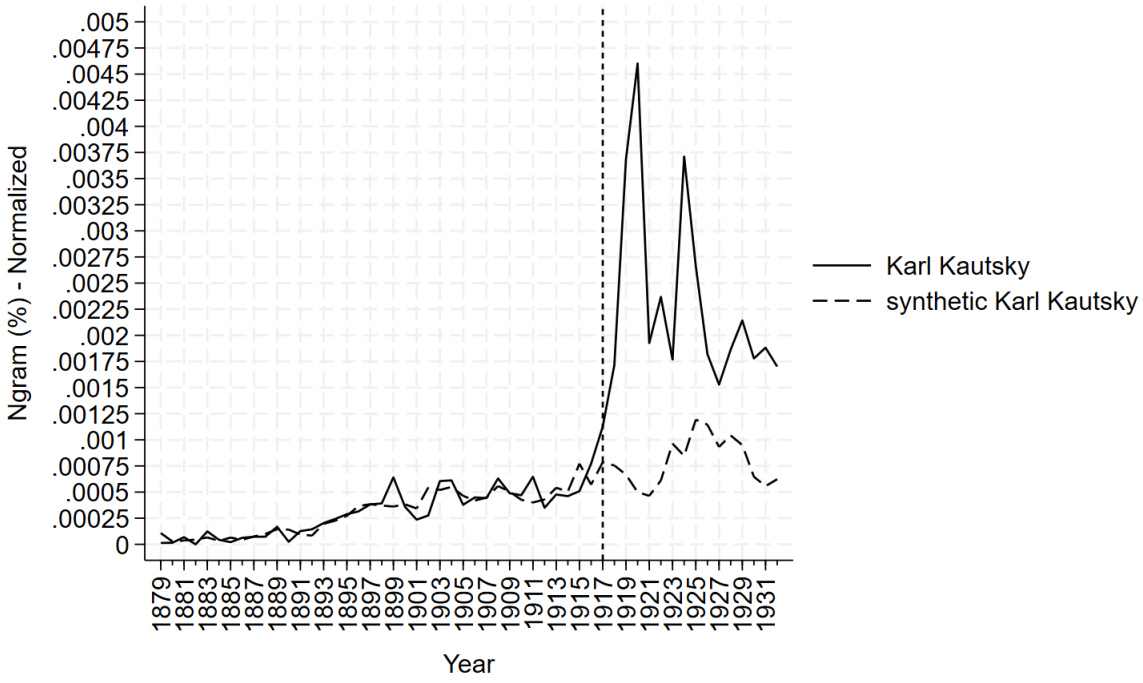

Figure A.2: Karl Kautsky, German Ngram cites, treatment 1917: actual vs. synth counterfactual

Table A.2: Karl Kautsky, German Ngram cites, treatment 1917: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.010	0.013	0.016
1917	0.055				
1918	0.010				
1919	0				
1920	0				
1921	0.005				
1922	0				
1923	0.055				
1924	0				
1925	0.030				
1926	0.080				
1927	0.085				
1928	0.065				
1929	0.035				
1930	0.025				
1931	0.050				
1932	0.045				

A.1.2 August Bebel

In figure A.3, we present the graph for August Bebel. At first, Bebel outperforms his sythetic counterfactual, consistent with a treatment effect. But this relationship reverses after 1894, when the real Bebel under-performs his synthetic counterfactual, contrary to the hypothesized effect. In table A.3, we see the p-values are generally statistically significant, or at least nearly so. Considering the negative sign of the treatment effect after 1894, this is – if anything – evidence against the hypothesized positive effect of the Erfurt Program.

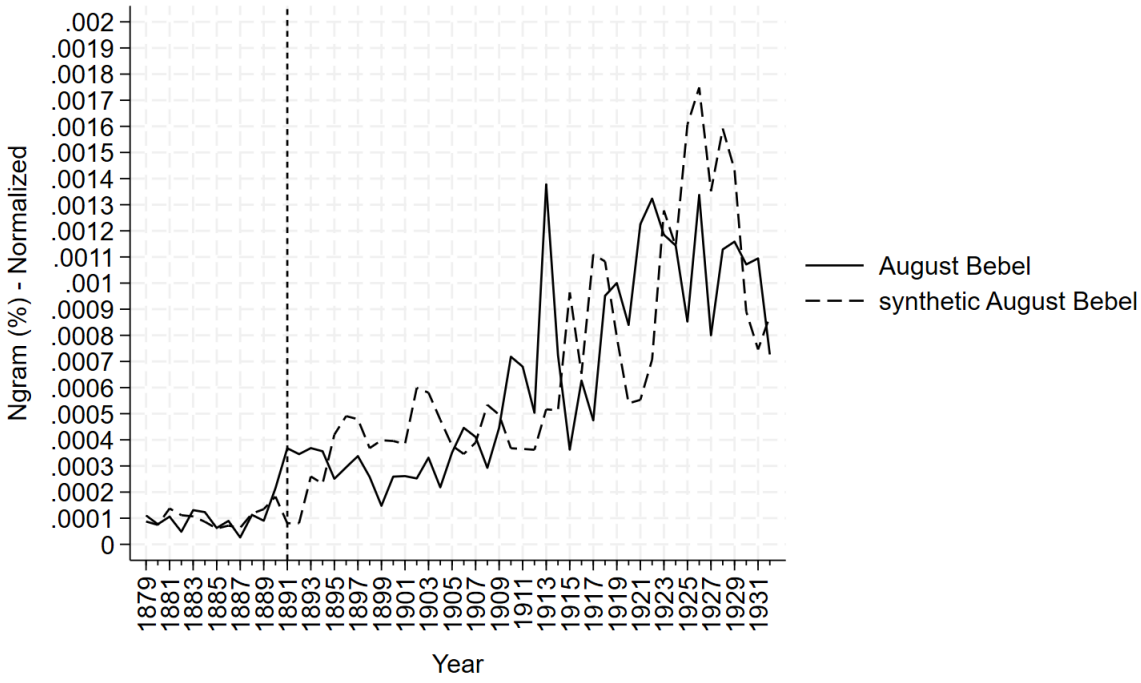

Figure A.3: August Bebel, German Ngram cites, treatment 1891: actual vs. synth counterfactual

Table A.3: August Bebel, German Ngram cites, treatment 1891: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.116	0.077	0.111
1891	0.010				
1892	0.035				
1893	0.141				
1894	0.131				
1895	0.126				
1896	0.085				
1897	0.126				
1898	0.226				
1899	0.095				
1900	0.196				
1901	0.176				

Next, in figure A.4 and table A.4, we present Bebel's results for 1917. Visually, we see that the real Bebel under-performed his synthetic prediction, but this difference is not statistically significant.

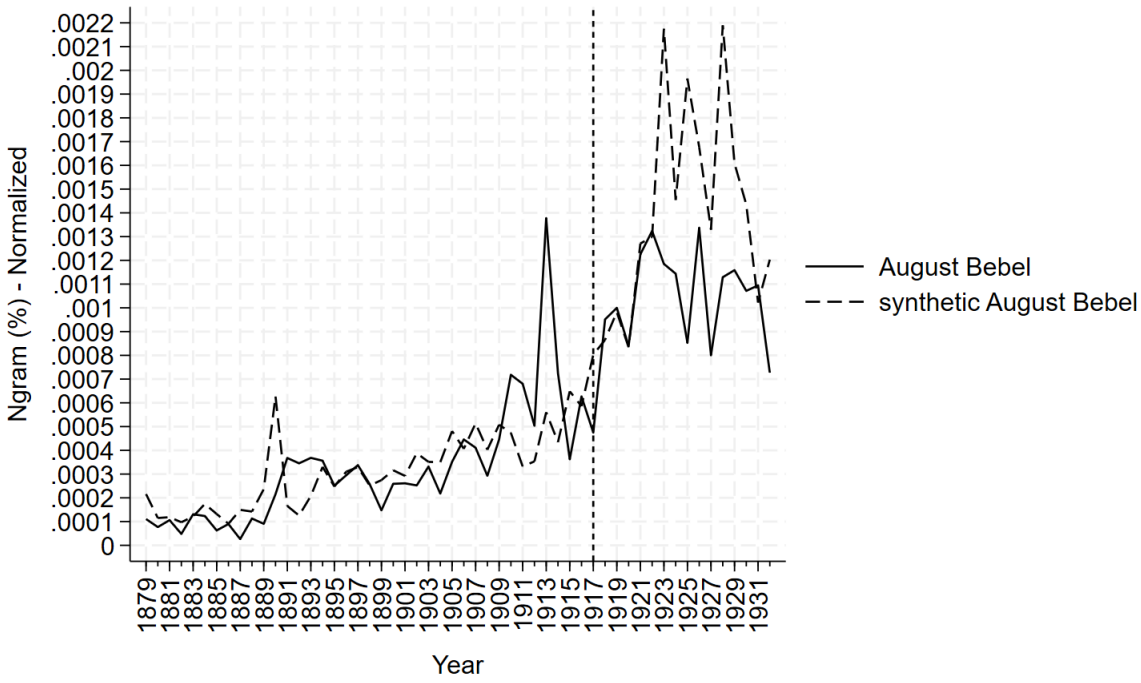

Figure A.4: August Bebel, German Ngram cites, treatment 1917: actual vs. synth counterfactual

Table A.4: August Bebel, German Ngram cites, treatment 1917: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.236	0.613	0.603
1917	0.236				
1918	0.749				
1919	0.935				
1920	0.980				
1921	0.849				
1922	0.935				
1923	0.095				
1924	0.402				
1925	0.101				
1926	0.347				
1927	0.231				
1928	0.116				
1929	0.271				
1930	0.281				
1931	0.839				
1932	0.302				

A.1.3 Eduard Bernstein

In figure A.5, we present the graph for Eduard Bernstein. Visually, we see that the real Bernstein briefly under-performs his synthetic counterfactual, but then a reversal occurs in 1897, and the real Bernstein outperforms the synthetic counterfactual. In table A.5, we present p-values, which are statistically significant or nearly so. However, it seems unlikely that the Erfurt Program would take until 1897 to have the hypothesized effect. The fact that the real Bernstein actually under-performs his synthetic counterfactual in the period immediately after 1891 until 1897 is also not consistent with the hypothesized treatment effect.

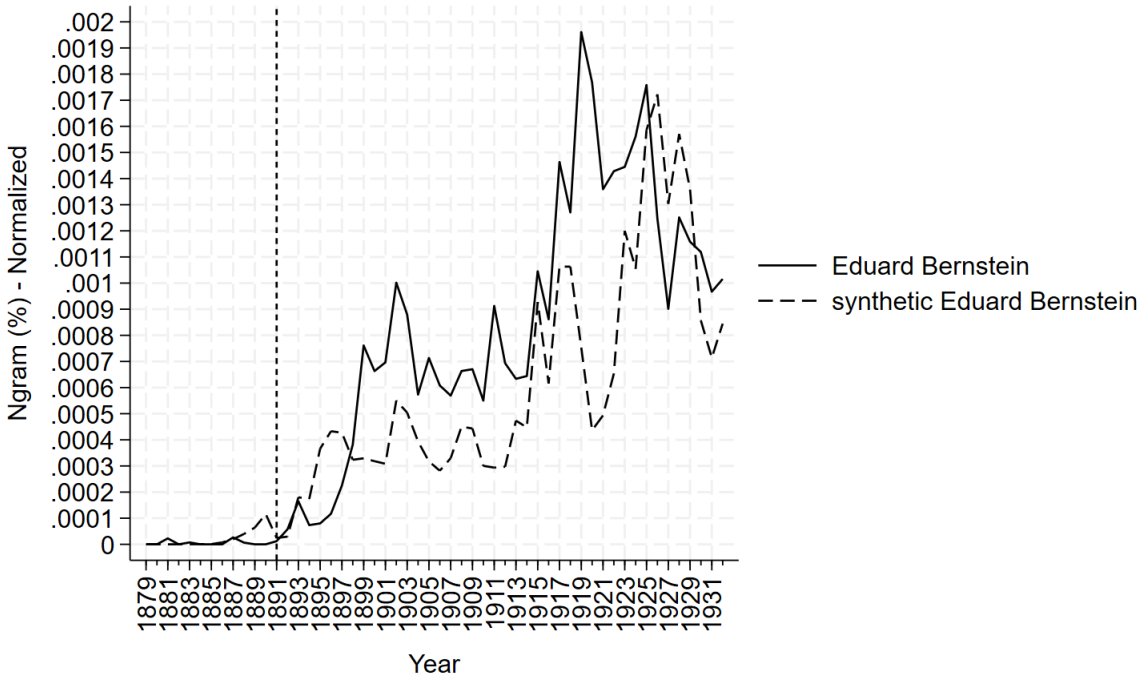

Figure A.5: Eduard Bernstein, German Ngram cites, treatment 1891: actual vs. synth counterfactual

Table A.5: Eduard Bernstein, German Ngram cites, treatment 1891: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.101	0.199	0.193
1891	0.754				
1892	0.603				
1893	0.794				
1894	0.241				
1895	0.065				
1896	0.055				
1897	0.106				
1898	0.427				
1899	0.055				
1900	0.101				
1901	0.075				

Finally, in figure A.6 and table A.6, we present Bernstein's results for 1917. We see that

after 1917, Bernstein briefly outperforms his synthetic counterfactual, but then a reversal flips this relationship. P-values are statistically significant or nearly so, but the pattern, magnitude, and signs of the treatment effect generally indicate a lack of significance.

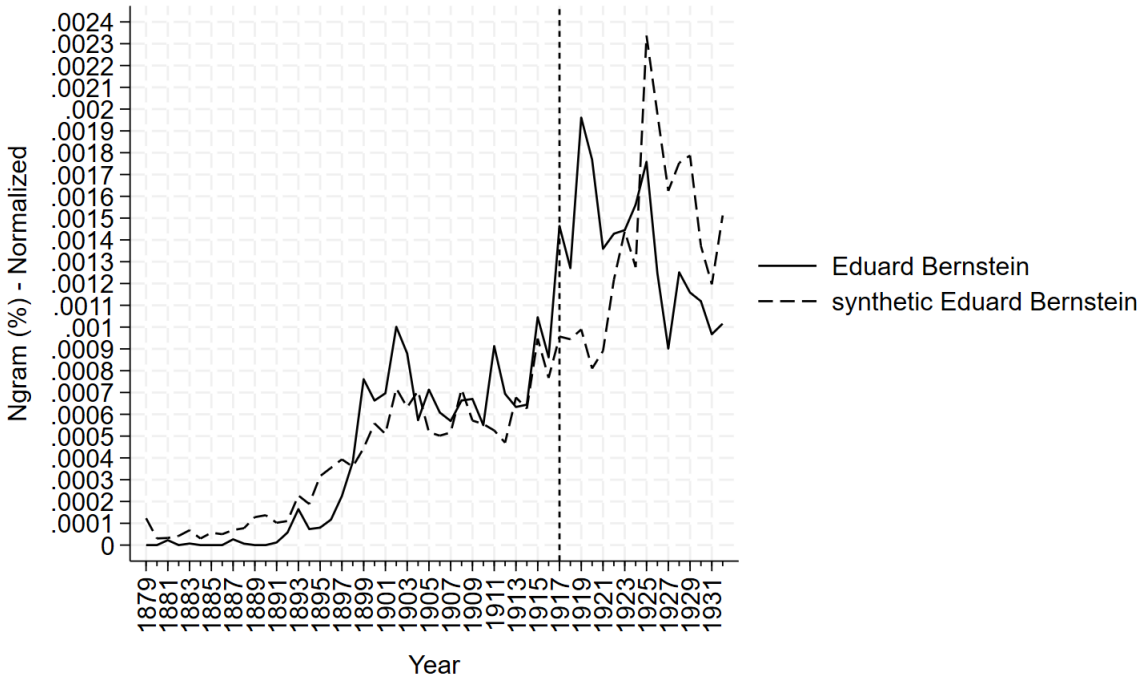

Figure A.6: Eduard Bernstein, German Ngram cites, treatment 1917: actual vs. synth counterfactual

Table A.6: Eduard Bernstein, German Ngram cites, treatment 1917: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.161	0.085	0.121
1917	0.040				
1918	0.131				
1919	0.015				
1920	0.010				
1921	0.075				
1922	0.332				
1923	0.985				
1924	0.286				
1925	0.126				
1926	0.136				
1927	0.101				
1928	0.151				
1929	0.146				
1930	0.286				
1931	0.377				
1932	0.196				

A.2 Retesting German newspaper citations with inclusion of socialist papers

In the main paper, we tested Marx's citations in 1891 and 1917 using German newspaper data from deutsche-digitale-bibliothek.de. There, we subtracted each author's mentions in two SPD-owned newspapers – *Vorwärts* and *Der Sozialdemokrat* – because we wished to measure Marx's reception outside of the party's own literature. We found a treatment effect in 1917 that was visually similar to that of Magness and Makovi (2023), but p-values were approximately 0.2. We did not find any effect at all in 1891. Although this does not entirely support any hypothesized effects – neither 1891 nor 1917 – it is more consistent with an effect in 1917. We suggested that the newspaper data may be noisier than the Google Ngram data, which would explain the similar

magnitude of the treatment effect but different p-values.

In this appendix, we repeat this exercise but test for robustness by including the two SPD-owned papers. In all other respects, the model specification is the same. All socialists besides Marx are excluded from the donor pool, so that we estimate a double treatment effect of both the Erfurt Program and the repeal of the Anti-Socialist Laws. Thus, all estimates are upper-bounds.

First, in figure A.7, we visually depict the result for 1891, and in table A.7, we present p-values. Visually, the real Marx's citations appear to exceed those of his synthetic counterfactual, indicating a treatment effect by the Erfurt Program. This effect appears to last all the way until 1917, suggesting the Erfurt Program may have had a real effect. However, p-values are generally not significant, being approximately 0.2. This exercise is a extreme upper-bound for Marx, because we are combining two separate treatments and including publications by the SPD itself, which would be expected to mention Marx more than any other author. Even in this case, the visual effect of 1917 appears larger than the effect of 1891.

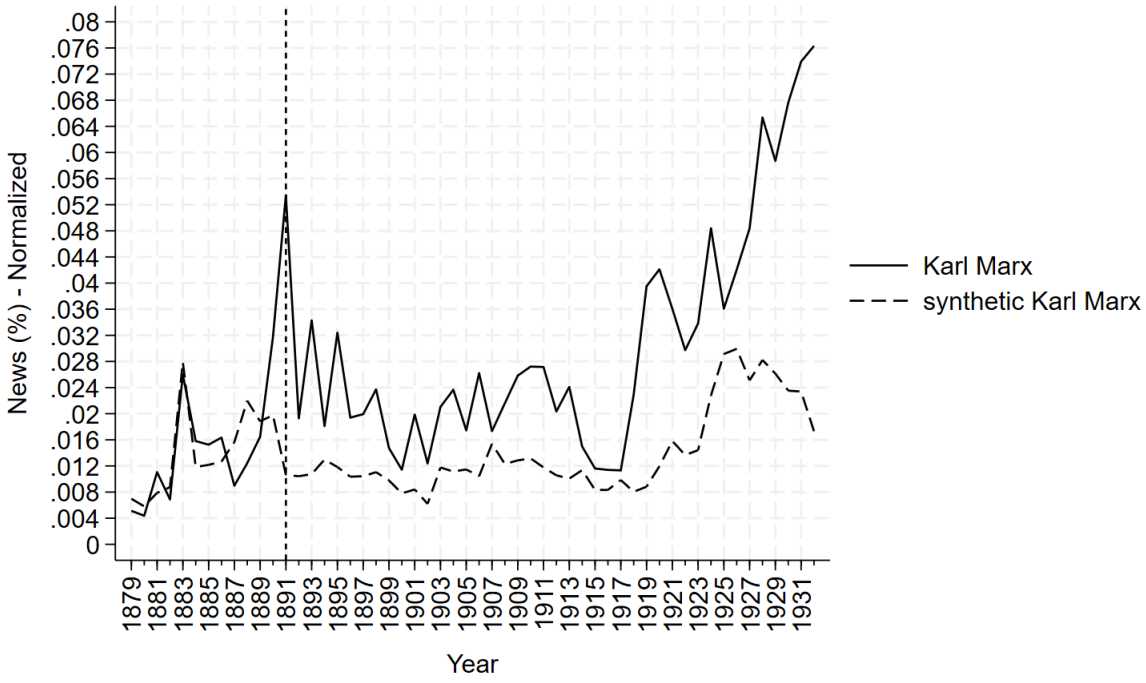

Figure A.7: Karl Marx, German newspaper cites, inc. socialist papers, treatment 1891: actual vs. synth counterfactual

Table A.7: Karl Marx, German newspaper cites, inc. socialist papers, treatment 1891: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		175	0.229	0.229	0.314
1891	0.029				
1892	0.223				
1893	0.057				
1894	0.469				
1895	0.114				
1896	0.331				
1897	0.286				
1898	0.211				
1899	0.549				
1900	0.600				
1901	0.343				

Next, in figure A.8, we visually depict the result for 1917. We see a large treatment effect, similar to that reported in the main paper. In table A.8, we present p-values. But once again, overall p-values are not significant, being almost 0.2. Again, we suggest that perhaps German newspaper data are noisier than Google Ngram data, explaining the similar magnitude, sign, and pattern of the treatment effect but larger p-values.

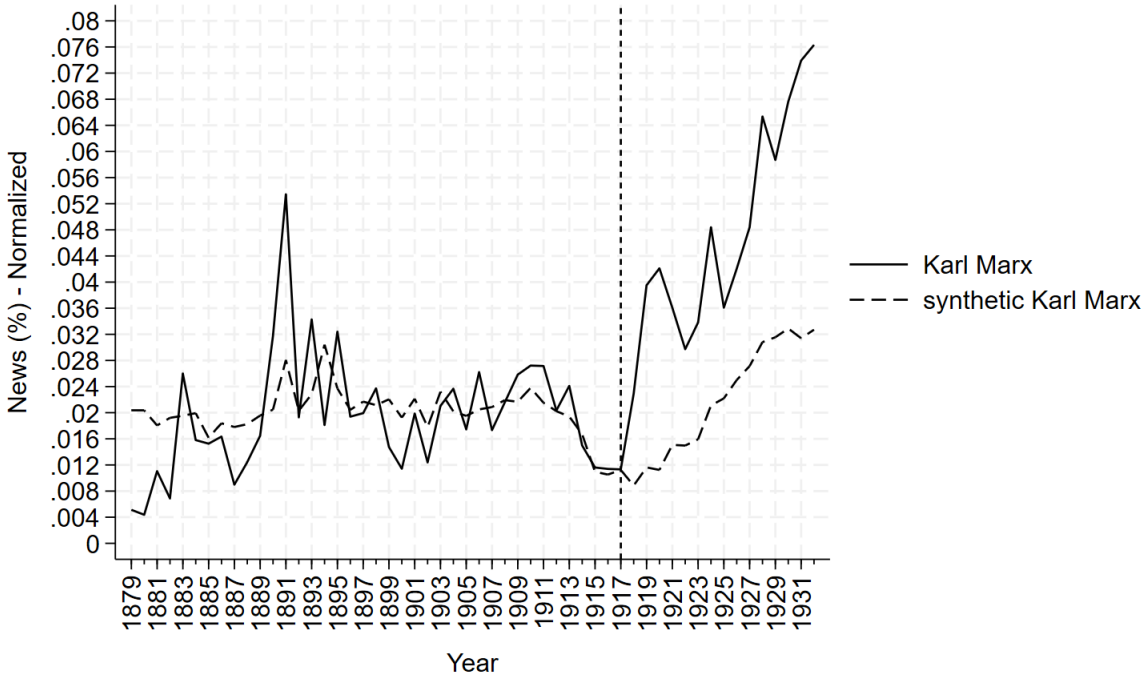

Figure A.8: Karl Marx, German newspaper cites, inc. socialist papers, treatment 1917: actual vs. synth counterfactual

Table A.8: Karl Marx, German newspaper cites, inc. socialist papers, treatment 1917: p-values

Year	Std p	Placebos	Joint Post Std p	AEP Std p	Simes Std p
Overall		199	0.176	0.165	0.225
1917	0.970				
1918	0.060				
1919	0.030				
1920	0.035				
1921	0.095				
1922	0.181				
1923	0.141				
1924	0.156				
1925	0.291				
1926	0.281				
1927	0.221				
1928	0.161				
1929	0.256				
1930	0.181				
1931	0.070				
1932	0.070				

Thus, the results for German newspapers reported in the main paper are robust to the inclusion or exclusion of socialist-owned papers.

A.3 Donor weights for all synthetic control results reported in main body papers

In table A.9, we report donor weights for the six synthetic control results reported in the main body. Note that in order to account for the double-treatment in 1891 – the near-simultaneous repeal of the Anti-Socialist Law and the SPD's adoption of the Erfurt Program – most of these results excluded socialist donors.

Table A.9: Donor weights for all synthetic control results reported in main body

German Ngrams, treatment 1891, non-socialists only		German newspapers, treatment 1917	
Arnold Ruge	0.475	Theodor Fontane	0.313
Ferdinand Tönnies	0.392	Ferdinand Tönnies	0.185
Schäffle	0.096	Helmholtz	0.185
Schmoller	0.036	Eduard Zeller	0.098
Ranke	0.001	Nietzsche	0.092
		Martin Luther	0.063
German Ngrams, treatment 1891, full sample		Natorp	0.03
Moses Hess	0.516	Schmoller	0.022
Sombart	0.371	Pasteur	0.011
Ferdinand Lassalle	0.087	Wilhelm Roscher	0.001
Rodbertus	0.026		
		German newspapers, treatment 1891	
German Ngrams, treatment 1891, socialists only		Dostoyevsky	0.521
Moses Hess	0.511	Ebbinghaus	0.292
Sombart	0.373	Ferdinand Tönnies	0.087
Ferdinand Lassalle	0.07	Martin Luther	0.083
Rodbertus	0.028	Pasteur	0.017
Proudhon	0.017		
English Ngrams, treatment 1891			
Schmoller	0.816		
Schäffle	0.085		
Wollstonecraft	0.055		
Pasteur	0.025		
Robert Browning	0.012		
Abraham Lincoln	0.005		
Aesop	0.001		

References

Böhm-Bawerk, E. v. ([1898] 1949). *Karl Marx and the close of his system: A criticism*. Augustus M. Kelley. Edited with an introduction by Paul M. Sweezy. Includes Hilferding (1949) and Bortkiewicz (1949).

Bortkiewicz, L. v. ([1907] 1949). On the correction of Marx's fundamental theoretical construction in the third volume of *Capital*. Rpt. in Böhm-Bawerk (1949).

Hilferding, R. ([1902] 1949). Böhm-Bawerk's criticism of Marx. Rpt. in Böhm-Bawerk (1949).

Kautsky, K. (1918). *The Dictatorship of the Proletariat*. https://www.marxists.org/archive/kautsky/1918/dictprole/index.htm.

Lenin, V. (1918). *The Proletarian Revolution and the Renegade Kautsky*. https://www.marxists.org/archive/lenin/works/1918/prrk/.

Magness, P. and Makovi, M. (2023). The mainstreaming of Marx: Measuring the effect of the Russian Revolution on Karl Marx's influence. *Journal of Political Economy*, 131(6):1507–1545. https://doi.org/10.1086/722933.