Appendix

The effect of low-skilled immigration on women's labor supply:
Theory and evidence from the United States

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A Comparative statics for equilibrium wages with a positive amount of non-labor income

We show that Proposition 1 also holds in the case of $a > 0$. Combining Equations (24) and (25) yields

$$F(w_L, N_I) := \frac{(1-\beta)^\beta w_L^\beta (\Omega w_L + \Phi)^{1-\beta}}{A\beta^\beta} \cdot [2(N_H\Omega + N_L)w_L + 2N_H\Phi + a(N_H + N_L)] - N_H[(1+\gamma) + (1-\alpha)\gamma](\Omega w_L + \Phi) + N_H a = 0.$$

The level of w_L that satisfies this equation is the equilibrium wage for low-skilled workers, although we cannot present it in closed form. Totally differentiating this equation, we obtain

$$\frac{\partial F(w_L, N_I)}{\partial w_L} dw_L + \frac{\partial F(w_L, N_I)}{\partial N_I} dN_I = 0.$$

Arranging this equation yields

$$\frac{dw_L}{dN_I} = -\frac{\frac{\partial F(w_L, N_I)}{\partial N_I}}{\frac{\partial F(w_L, N_I)}{\partial w_L}}. \tag{A1}$$

The denominator in Equation (A1) is expressed as follows:

$$\frac{\partial F(w_L, N_I)}{\partial w_L} = \frac{(1-\beta)^{\beta} w_L^{\beta-1} w_H^{-\beta}}{A\beta^{\beta}} \times \Bigg\{ 2w_L(N_H\Omega + N_L)\Omega w_L + \Phi\Big(2\beta w_L(N_H\Omega + N_L) - (1-\beta)[2N_H\Phi + a(N_H + N_L)]\Big)\Bigg\} + \frac{N_H a + N_H[(1+\gamma) + (1-\alpha)\gamma]\Phi}{w_L}.$$

To simplify the exposition, we consider the following case:

$$\frac{N_H}{N_L} > \frac{(1-\beta)[1 + (1-\alpha)\gamma]}{\beta - (1-\alpha)(1-\beta)\gamma}.$$

This condition implies that the number of high-skilled native workers is sufficiently large relative to that of low-skilled ones and ensures that $\Phi > 0$ and Φ increase with a. Then, the sign of the term in the second line is positive if and only if a is sufficiently small. In addition, the term in the third line is positive for any $a > 0$ by assumption. Accordingly, $\frac{\partial F(w_L, N_I)}{\partial w_L}$ is greater than zero if and only if a is sufficiently small.

The numerator in Equation (A1) is given by

$$\frac{\partial F(w_L, N_I)}{\partial N_I} = \frac{(1-\beta)^{\beta} w_L^{\beta-1}}{A\beta^{\beta} w_H^{\beta}} \cdot \frac{\partial \Omega}{\partial N_I} \times \Bigg\{ 2N_H w_L^2 w_H + \Big[2(N_H\Omega + N_L)w_L + 2N_H\Phi + a(N_H + N_L)\Big] \times \Big[(1-\beta)w_L^2 - \Omega w_L - \Phi\Big]\Bigg\} + \frac{\partial \Omega}{\partial N_I}\left\{\frac{N_H a + N_H[(1+\gamma) + (1-\alpha)\gamma]\Phi}{w_L}\right\}.$$

Again, $\frac{\partial F(w_L, N_I)}{\partial N_I}$ is greater than zero if and only if a is sufficiently small.

Taken together, when non-labor income is not too high and the number of high-skilled workers is sufficiently large relative to that of low-skilled ones, Proposition 1 holds even if $a > 0$, that is, the influx of low-skilled immigrants decreases the equilibrium wage of low-skilled workers. The results for the equilibrium wage of high-skilled workers are similarly obtained.

B Unit and time weights in the SDID estimation

In this section, we plot the unit and time weights for each estimation. To understand the difference between the adjusted outcomes $\hat{\delta}_i$ and outcome of Miami $\hat{\delta}_{Miami}$, we can rewrite $\hat{\tau}$ as $\hat{\tau} = \hat{\delta}_{Miami} - \sum_{i=1}^{N_{co}} \hat{\omega}_i \delta_i$ (Arkhangelsky et al. 2021). Figure B1 presents the unit weight $\hat{\omega}$ for each estimation in Table 3. The x-axis and y-axis represent the unit name (i.e., MSAs) and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively, with the point size showing the unit weights. The red cross implies that zero weight is placed on the unit. Figure B1 shows balanced unit weights for hourly wages and working hours (Panels (a) and (b)). Figure B2 illustrates how weights are placed on each year. Specifically, the green area shows the time weights $\hat{\lambda}_t$ in Equation (28).

(a) Hourly wages

(b) Working hours

(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights ω in Equation (28). The red cross means that the unit weight is zero.

Figure B1: Unit weights used in Table 3 (low-skilled native women)

(a) Hourly wages

(b) Working hours

(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The green area represents the time-specific weights λ_t in Equation (28).

Figure B2: Time weights used in Table 3 (low-skilled native women)

Figures B3 and B4 illustrate the unit and time weights used in the SDID estimations in Table 4 (i.e., the impact of the immigration event on the labor market outcomes of high-skilled native women). The unit weights appear more balanced than those in Figure B1.

(a) Hourly wages

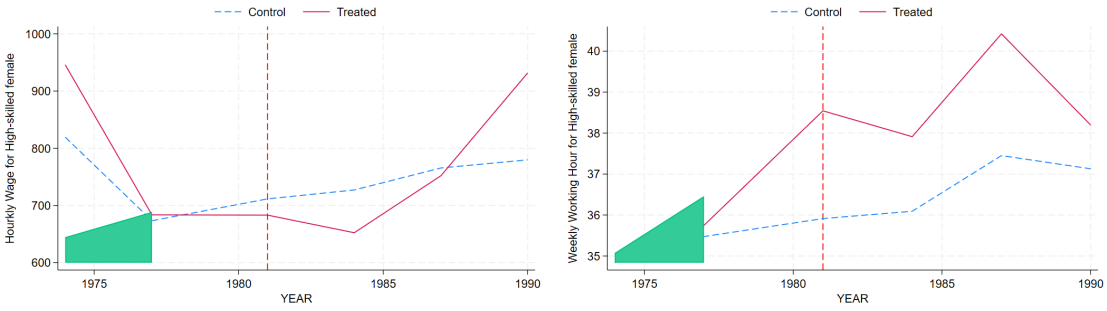
(b) Working hours

(c) Employment rate

(d) Participation rate

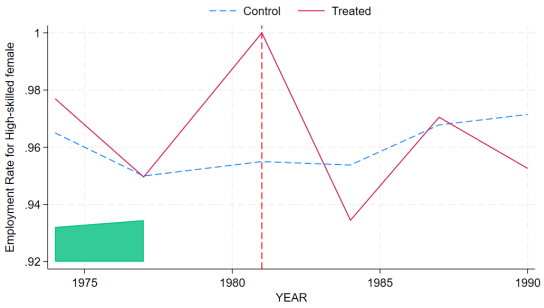
Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights ω in Equation (28). The red cross means that the unit weight is zero.

Figure B3: Unit weights used in Table 4 (high-skilled native women)

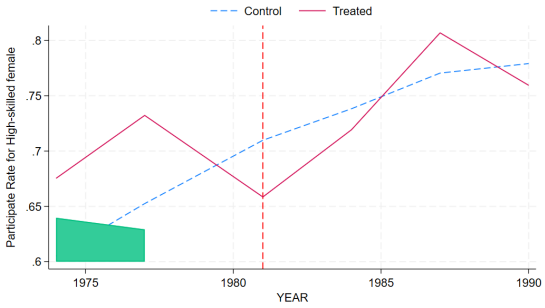


(a) Hourly wages

(b) Working hours



(c) Employment rate

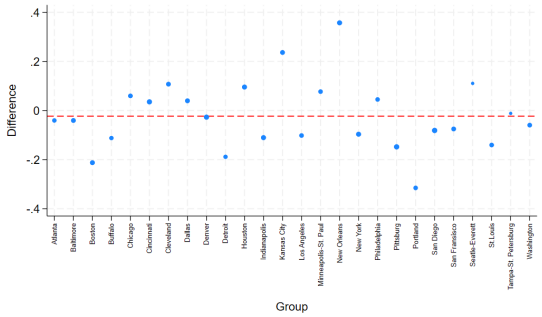


(d) Participation rate

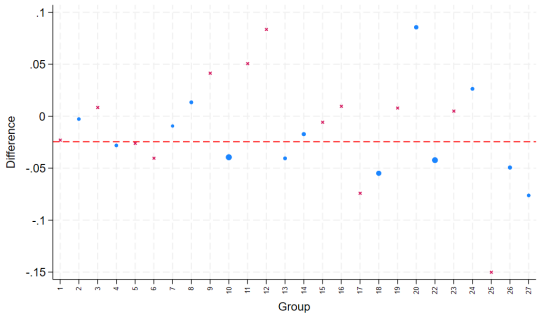
Source: CPS conducted by the IPUMS.
Note: The green area represents the time-specific weights λ_t in Equation (28).

Figure B4: Time weights used in Table 4 (high-skilled native women)

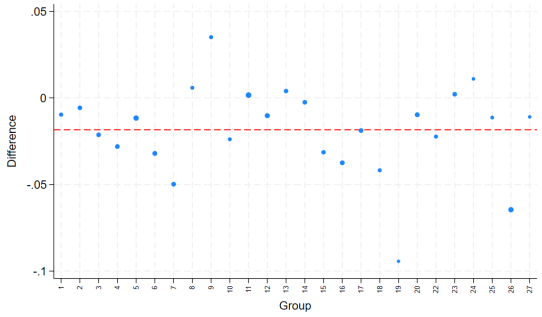
Figures B5 and B6 illustrate the unit and time weights used in the SDID estimations in Table 5 (i.e., the impact of the immigration event on the gender gap in the labor market outcomes of low-skilled natives).



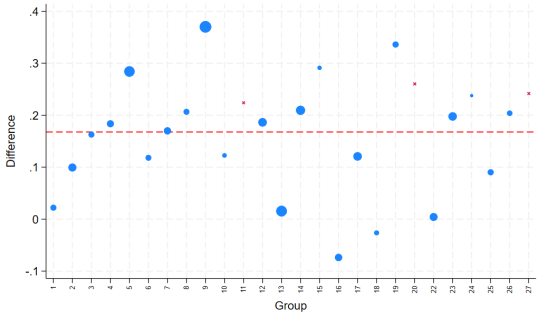
(a) Gap in hourly wages



(b) Gap in working hours



(c) Gap in the employment rate



(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights ω in Equation (28). The red cross means that the unit weight is zero.

Figure B5: Unit weights used in Table 5 (gender gap for low-skilled natives)

(a) Gap in hourly wages

(b) Gap in working hours

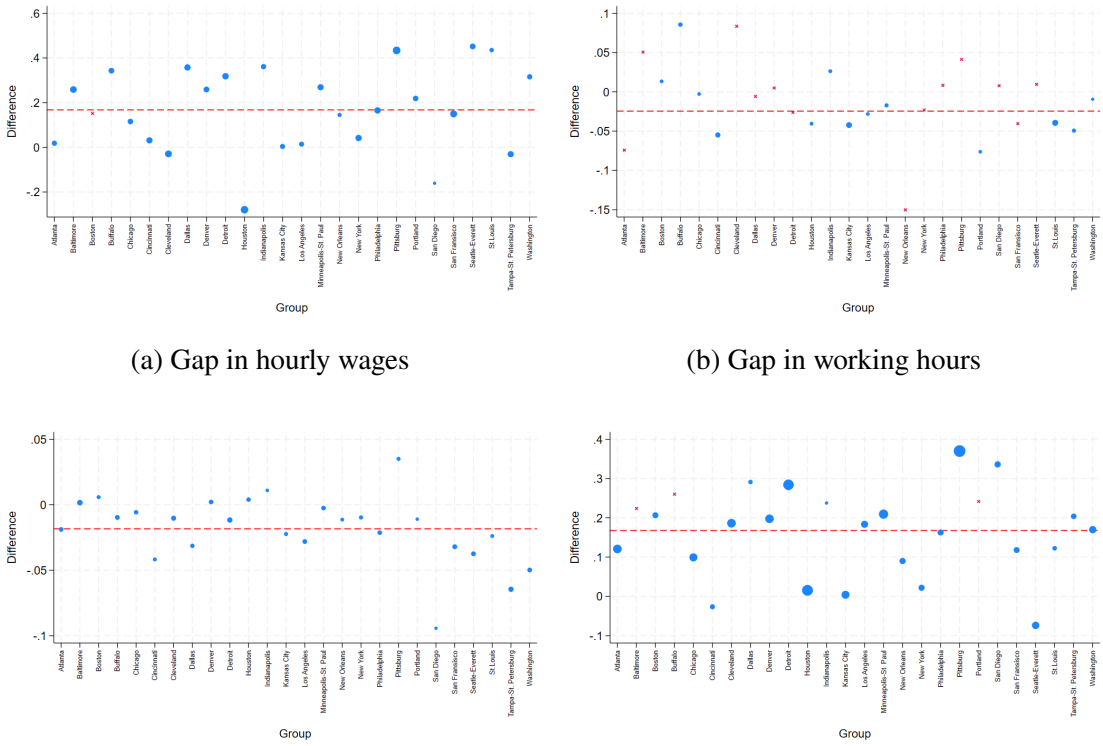
(c) Gap in the employment rate

(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The green area represents the time-specific weights λ_t in Equation (28).

Figure B6: Time weights used in Table 5 (gender gap for low-skilled natives)

Figures B7 and B8 illustrate the unit and time weights used in the SDID estimations in Table 6 (i.e., the impact of the immigration event on the gender gap in the labor market outcomes of high-skilled natives).



(a) Gap in hourly wages

(b) Gap in working hours

(c) Gap in the employment rate

(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights ω in Equation (28). The red cross means that the unit weight is zero.

Figure B7: Unit weights used in Table 6 (gender gap for high-skilled natives)

(a) Gap in hourly wages

(b) Gap in working hours

(c) Gap in the employment rate

(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The green area represents the time-specific weights λ_t in Equation (28).

Figure B8: Time weights used in Table 6 (gender gap for high-skilled natives)

Figures B9 and B10 illustrate the unit and time weights used in the SC estimation in Column 2 of Table 7 (i.e., the impact of the immigration event on the labor market outcomes of low-skilled native women). Comparing Figures B1 and B9 reveals that the SC method creates the control group using a smaller number of MSAs than the SDID estimation method does. Figure B11 illustrates the time weight used in the DID estimation in Column 3 of Table 7. Unlike the SDID estimation method, the time weights are equally placed on the years before the immigration event in the DID estimation.

(a) Hourly wages

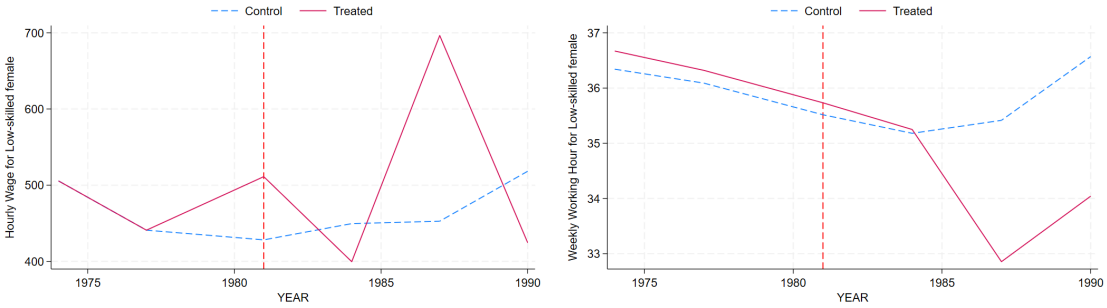
(b) Working hours

(c) Employment rate

(d) Participation rate

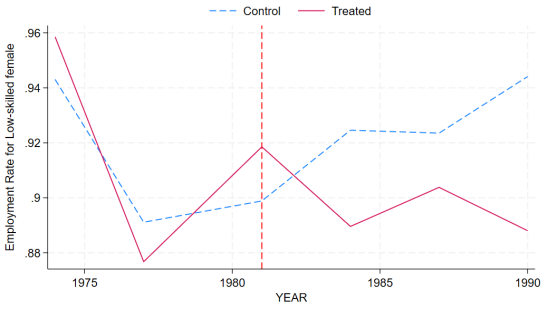
Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights. The red cross means that the unit weight is zero.

Figure B9: Unit weights used in Column 2 of Table 7 (low-skilled native women)

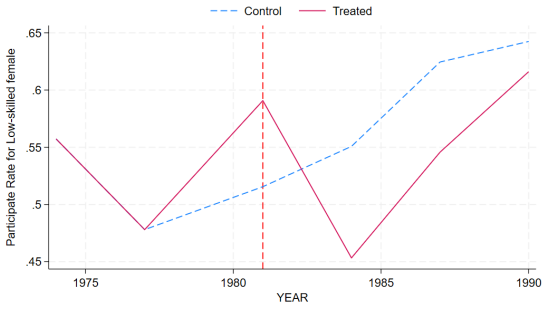


(a) Hourly wages

(b) Working hours



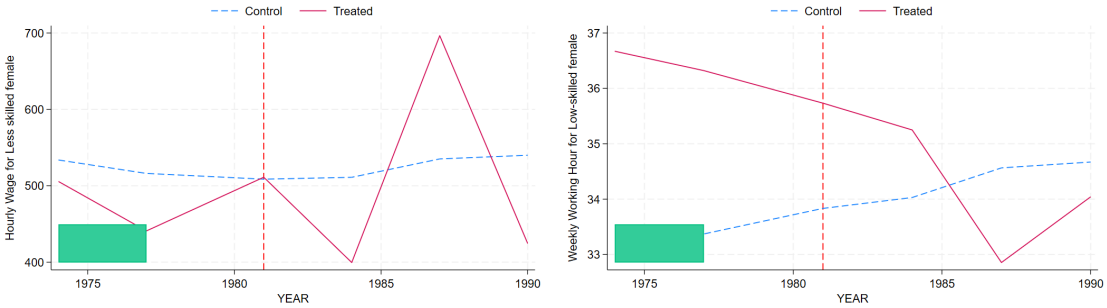
(c) Employment rate



(d) Participation rate

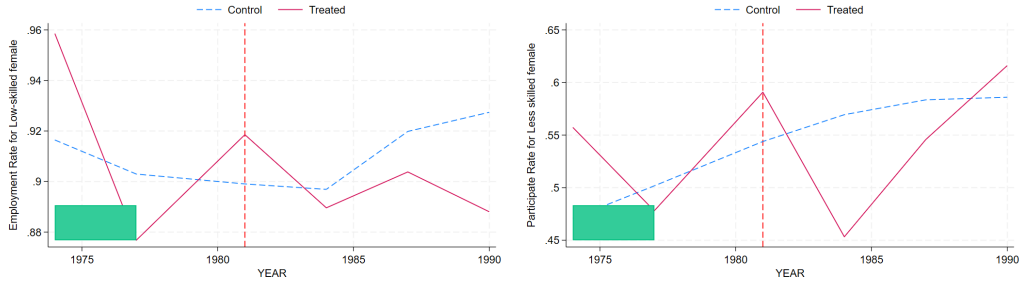
Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the labor market outcomes of low-skilled native women in the treatment and control groups, respectively.

Figure B10: Time weights used in Column 2 of Table 7 (low-skilled native women)



(a) Hourly wages

(b) Working hours



(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the labor market outcomes of low-skilled native women in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure B11: Time weights used in Column 3 of Table 7 (low-skilled native women)

Figures B12 and B13 illustrate the unit and time weights used in the SC estimation in Column 2 of Table 8 (i.e., the impact of the immigration event on the labor market outcomes of high-skilled native women). Figure B14 illustrates the time weight used in the DID estimation in Column 3 of Table 8.

(a) Hourly wages

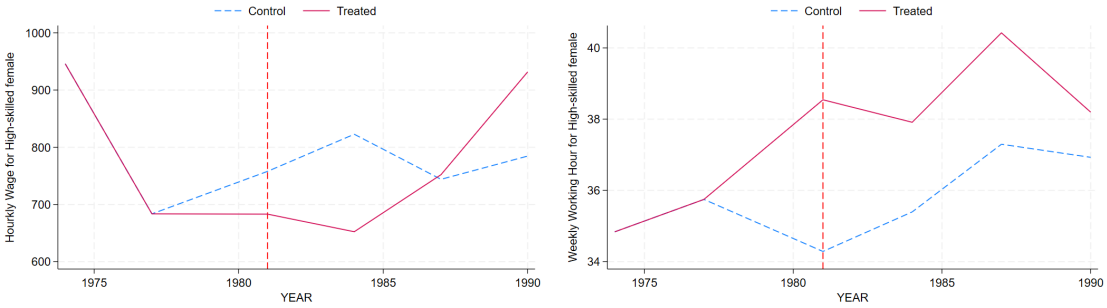
(b) Working hours

(c) Employment rate

(d) Participation rate

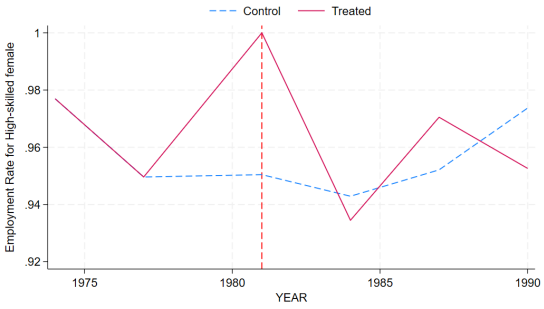
Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights. The red cross means that the unit weight is zero.

Figure B12: Unit weights used in Column 2 of Table 8 (high-skilled native women)

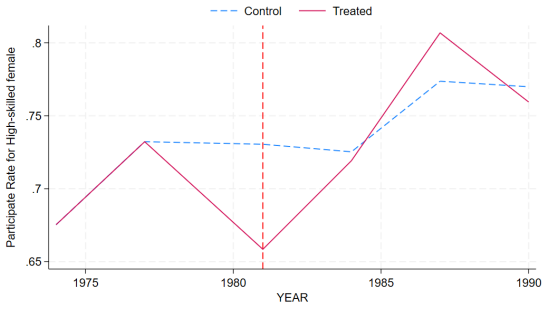


(a) Hourly wages

(b) Working hours



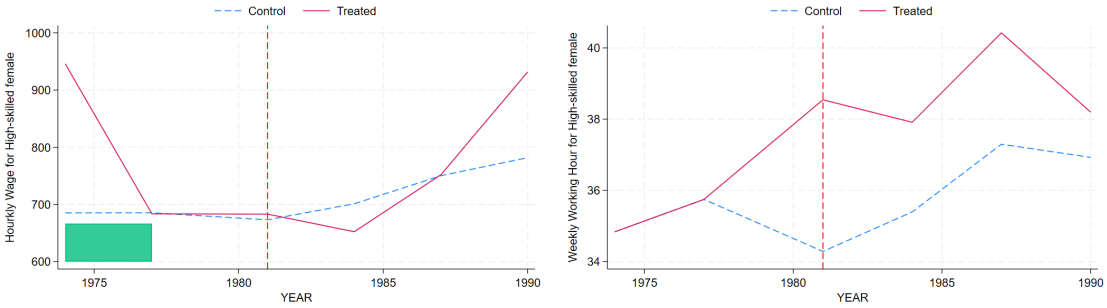
(c) Employment rate



(d) Participation rate

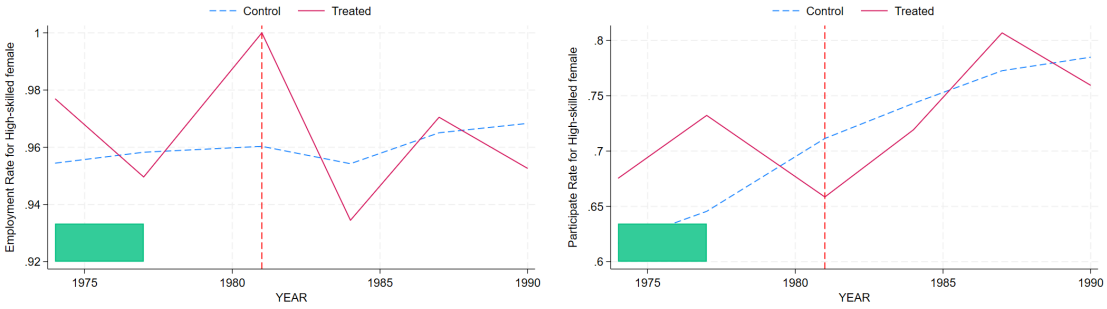
Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the labor market outcomes of low-skilled native women in the treatment and control groups, respectively.

Figure B13: Time weights used in Column 2 of Table 8 (high-skilled native women)



(a) Hourly wages

(b) Working hours



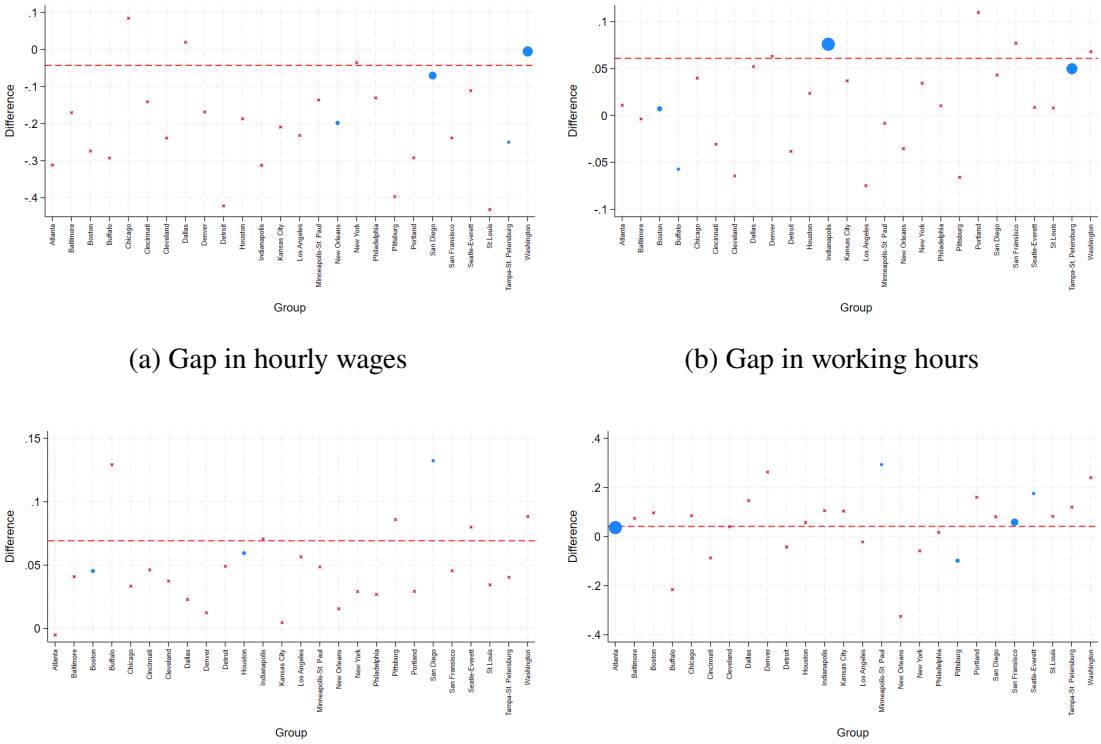
(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the labor market outcomes of low-skilled native women in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure B14: Time weights used in Column 3 of Table 8 (high-skilled native women)

Figures B15 and B16 illustrate the unit and time weights used in the SC estimation in Column 2 of Table C1 (i.e., the impact of the immigration event on the gender gap in the labor market outcomes of low-skilled natives). Figure B17 illustrates the time weight used in the DID estimation in Column 3 of Table C1.



(a) Gap in hourly wages

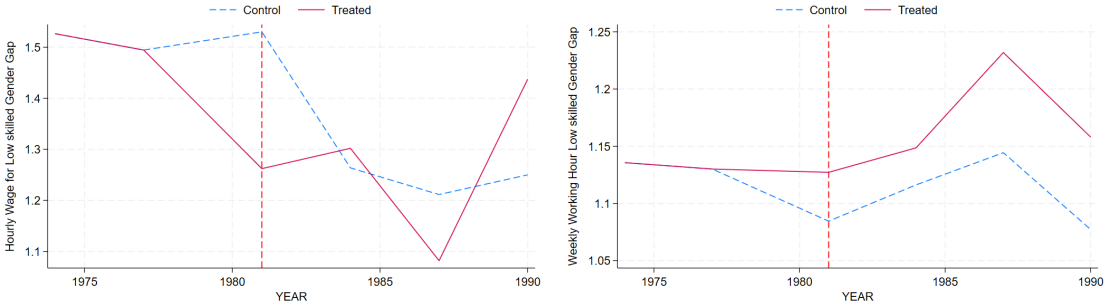
(b) Gap in working hours

(c) Gap in the employment rate

(d) Gap in the participation rate

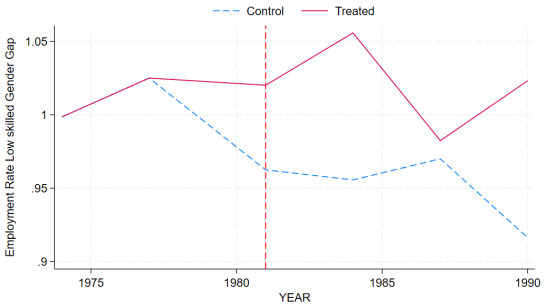
Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights. The red cross means that the unit weight is zero.

Figure B15: Unit weights used in Column 2 of Table C1 (gender gap for low-skilled natives)

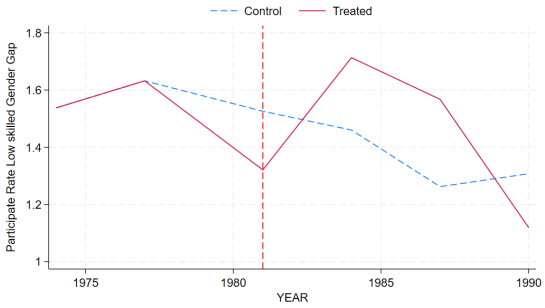


(a) Gap in hourly wages

(b) Gap in working hours



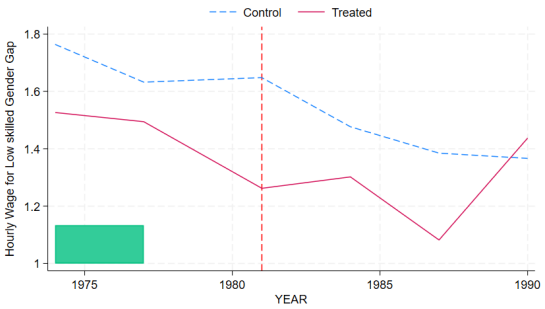
(c) Gap in the employment rate



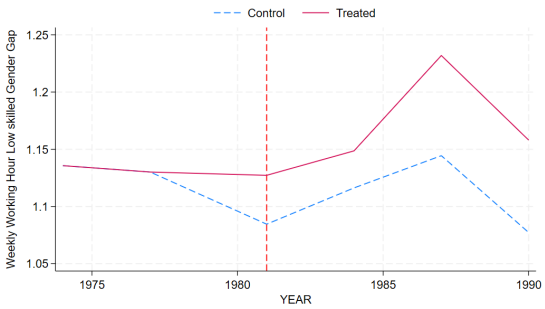
(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the gender gap in the labor market outcomes of low-skilled natives in the treatment and control groups, respectively.

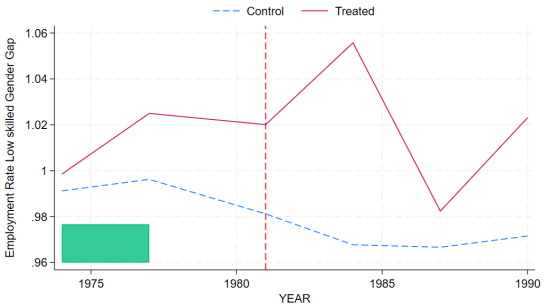
Figure B16: Time weights used in Column 2 of Table C1 (gender gap for low-skilled natives)



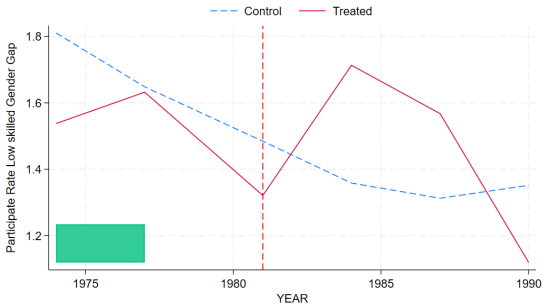
(a) Gap in hourly wages



(b) Gap in working hours



(c) Gap in the employment rate

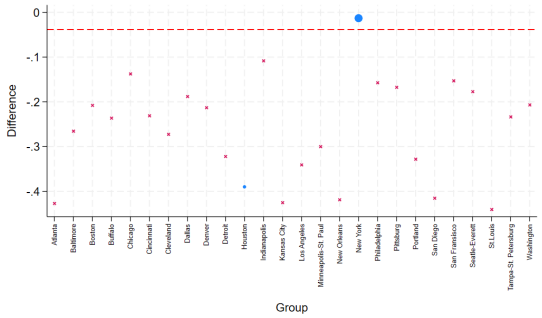


(d) Gap in the participation rate

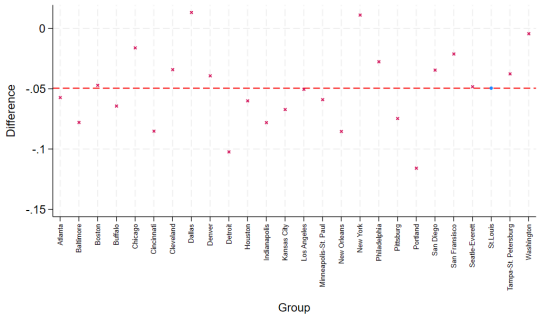
Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the gender gap in the labor market outcomes of low-skilled natives in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure B17: Time weights used in Column 3 of Table C1 (gender gap for low-skilled natives)

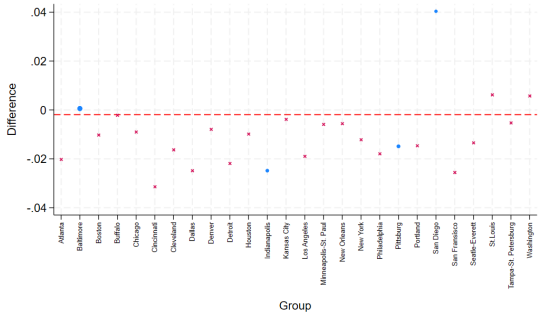
Figures B18 and B19 illustrate the unit and time weights used in the SC estimation in Column 2 of Table C2 (i.e., the impact of the immigration event on the gender gap in the labor market outcomes of high-skilled natives). Figure B20 illustrates the time weight used in the DID estimation in Column 3 of Table C2.



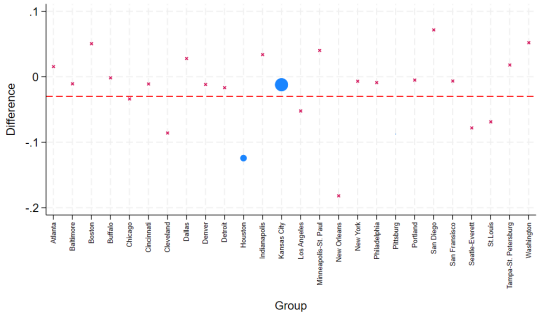
(a) Gap in hourly wages



(b) Gap in working hours



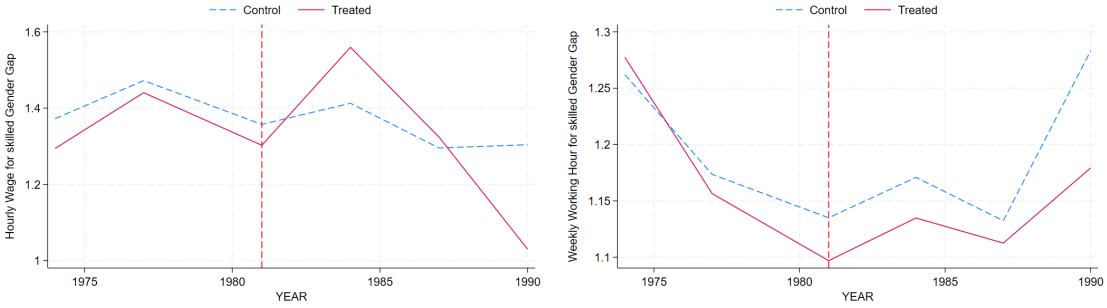
(c) Gap in the employment rate



(d) Gap in the participation rate

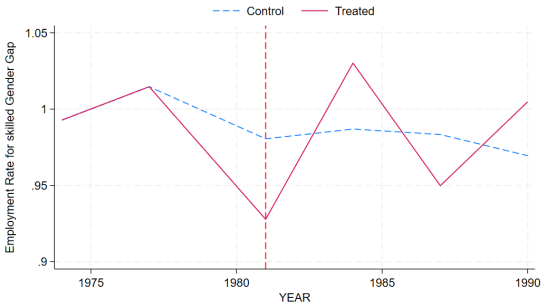
Source: CPS conducted by the IPUMS.
Note: The x-axis and y-axis represent the unit name and difference $\hat{\delta}_{Miami} - \hat{\delta}_i$, respectively. The point size indicates the unit-specific weights. The red cross means that the unit weight is zero.

Figure B18: Unit weights used in Column 2 of Table C2 (gender gap for high-skilled natives)

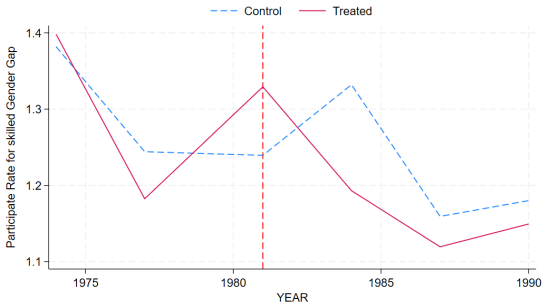


(a) Gap in hourly wages

(b) Gap in working hours



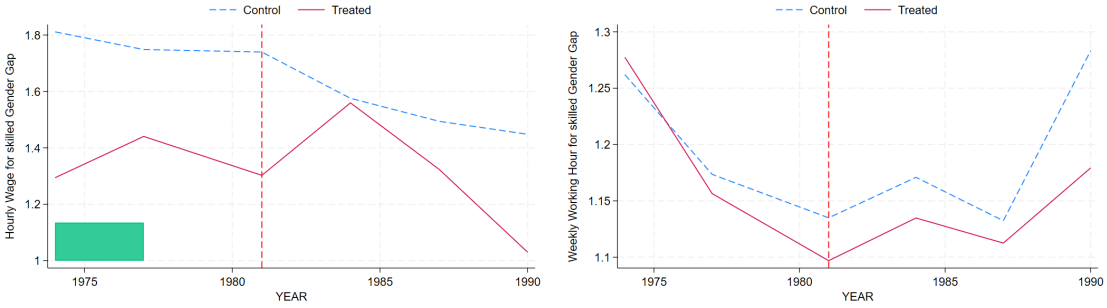
(c) Gap in the employment rate



(d) Gap in the participation rate

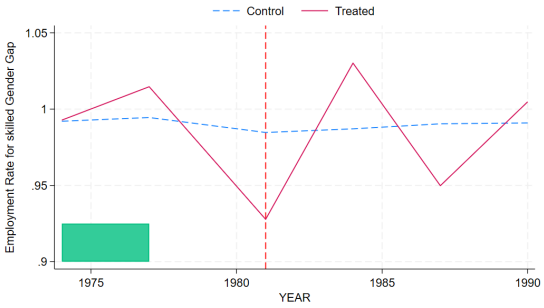
Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the gender gap in the labor market outcomes of low-skilled natives in the treatment and control groups, respectively.

Figure B19: Time weights used in Column 2 of Table C2 (gender gap for high-skilled natives)

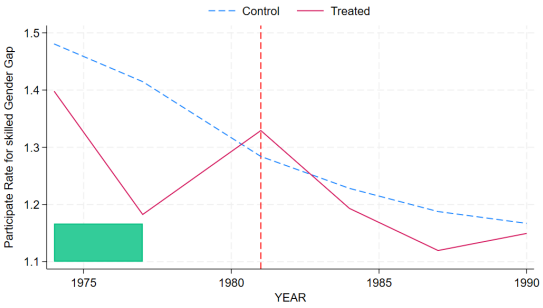


(a) Gap in hourly wages

(b) Gap in working hours



(c) Gap in the employment rate



(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the gender gap in the labor market outcomes of high-skilled natives in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure B20: Time weights used in Column 3 of Table C2 (gender gap for high-skilled natives)

C Robustness analysis for the estimation methods

We present the estimation results of the impact of the Mariel Boatlift immigration event on the gender gap in labor market outcomes. Tables C1 and C2 present the results for low- and high-skilled natives, respectively. In each Table, Columns 1–3 show the SDID, SC, and DID estimates, respectively.

Table C1: Estimation results of the gender gap for low-skilled natives (SDID, SC, and DID)

	(1) SDID	(2) SC	(3) DID
A. Gap in hourly wage			
Miami × After 1980	−0.023	−0.043	−0.010
	(0.136)	(0.128)	(0.133)
B. Gap in working Hour			
Miami × After 1980	0.086*	0.061	0.085*
	(0.045)	(0.047)	(0.044)
C. Gap in employment rate			
Miami × After 1980	0.031	0.069*	0.031
	(0.043)	(0.038)	(0.040)
D. Gap in participation rate			
Miami × After 1980	0.211	0.041	0.198
	(0.201)	(0.119)	(0.180)

Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the gender gap in the labor market outcomes of low-skilled natives. The sample is restricted to natives (in our definition, non-Cuban women) aged 18–65 with an educational attainment less than or equal to a high school diploma. The number of observations is 162. The outcome variables are the gender gap in the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

Table C2: Estimation results of the gender gap for high-skilled natives (SDID, SC, and DID)

	(1) SDID	(2) SC	(3) DID
A. Gap in hourly wage			
Miami × After 1980	0.167	−0.038	0.152
	(0.198)	(0.145)	(0.179)
B. Gap in working Hour			
Miami × After 1980	−0.025	−0.050	−0.051
	(0.053)	(0.041)	(0.049)
C. Gap in employment rate			
Miami × After 1980	−0.018	−0.002	−0.021
	(0.025)	(0.013)	(0.023)
D. Gap in participation rate			
Miami × After 1980	0.168	−0.030	0.139
	(0.112)	(0.051)	(0.111)

Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the gender gap in the labor market outcomes of high-skilled natives. The sample is restricted to natives (in our definition, non-Cuban women) aged 18–65 with an educational attainment of at least a some college degree. The number of observations is 162. The outcome variables are the gender gap in the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

D Robustness analysis for the covariates

While we carefully address the single treatment problem using the SDID estimation method, further analysis is required to confirm the robustness of our findings. To this end, we construct a control group using various covariates that capture the demographic characteristics and labor market conditions in the unit- and time-weighting procedure. This approach allows us to construct a control group that more closely resembles Miami in these respects. However, this also increases the likelihood of violating the parallel trend assumption compared with when covariates are not used. Given this trade-off, we compare the estimates from the models with and without the covariates in the weighting procedure to ensure robustness, while assessing the validity of the parallel trend assumption through an event study analysis.

Our covariates include the marriage rate and average age of the youngest child as demographic variables. In addition, following Peri and Yasenov (2019), we use the share of low-skilled female workers to high-skilled female workers and the share of low-skilled Hispanic female workers to low-skilled non-Hispanic female workers to control for labor market conditions (i.e., labor market tightness and its differences across skills and races).

We compare the estimates of the impact of the Mariel Boatlift immigration event on the labor market outcomes of low-skilled native women. Columns 1–3 of Table D1 present the results of the estimation models without the covariates, with the demographic variables, and with the variables that capture labor market conditions, respectively. Panel B of Table D1 indicates the robustness of the impact on the working hours of low-skilled native women against using covariates in the weight-calculating procedure. The point estimates are similar and significant at the 5% level for all the models. By contrast, Panels C and D display a difference in the point estimates and their statistical significance across models. Specifically, Column 3 indicates that the immigration event decreased the employment and participation rates of low-skilled native women by 5.3% and 7.0%, respectively. However, Columns 1 and 2 show no significant effects. In summary, our findings that low-skilled native women decreased their working hours are robust.

We also confirm the robustness of our findings on the impact of the immigration event on the labor market outcomes of high-skilled natives (Table D2), the gender gap for low-skilled natives (Table D3), and the gender gap for high-skilled natives (Table D4).

Table D1: Estimation results for low-skilled native women (SDID)

	(1) Without covariates	(2) With covariates (demographics)	(3) With covariates (labor market)
A. Hourly wage			
Miami × After 1980	38.564	38.564	29.645
	(45.635)	(45.635)	(54.057)
B. Working Hour			
Miami × After 1980	−2.820**	−2.820**	−2.655**
	(1.233)	(1.233)	(1.285)
C. Employment rate			
Miami × After 1980	−0.039	−0.039	−0.053*
	(0.029)	(0.029)	(0.028)
D. Participation rate			
Miami × After 1980	−0.037	−0.037	−0.070*
	(0.048)	(0.048)	(0.042)

Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the labor market outcomes of low-skilled native women. The sample is restricted to native women (in our definition, non-Cuban women) aged 18–65 with an educational attainment less than or equal to a high school diploma. The number of observations is 162. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

Table D2: Estimation results for high-skilled native women (SDID)

	(1) Without covariates	(2) With covariates (demographics)	(3) With covariates (labor market)
A. Hourly wage			
Miami × After 1980	−40.309	−97.945	−195.649***
	(69.749)	(74.715)	(62.603)
B. Working Hour			
Miami × After 1980	1.902*	1.556	2.595**
	(1.038)	(1.101)	(1.072)
C. Employment rate			
Miami × After 1980	−0.003	0.007	0.003
	(0.020)	(0.016)	(0.019)
D. Participation rate			
Miami × After 1980	−0.088	−0.062	−0.062
	(0.054)	(0.040)	(0.056)

Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the labor market outcomes of high-skilled native women. The sample is restricted to native women (in our definition, non-Cuban women) aged 18–65 with an educational attainment of at least a some college degree. The number of observations is 162. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

Table D3: Estimation results of the gender gap for low-skilled natives (SDID)

	(1) Without covariates	(2) With covariates (demographics)	(3) With covariates (labor market)
A. Hourly wage			
Miami × After 1980	−0.023	−0.038	−0.023
	(0.136)	(0.140)	(0.136)
B. Working Hour			
Miami × After 1980	0.086*	0.043	0.086*
	(0.045)	(0.039)	(0.045)
C. Employment rate			
Miami × After 1980	0.031	0.034	0.031
	(0.043)	(0.044)	(0.043)
D. Participation rate			
Miami × After 1980	0.211	0.157	0.031
	(0.201)	(0.180)	(0.043)

Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the gender gap in the labor market outcomes of low-skilled natives. The sample is restricted to natives (in our definition, non-Cuban women) aged 18–65 with an educational attainment less than or equal to a high school diploma. The number of observations is 162. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

Table D4: Estimation results of the gender gap for high-skilled natives (SDID)

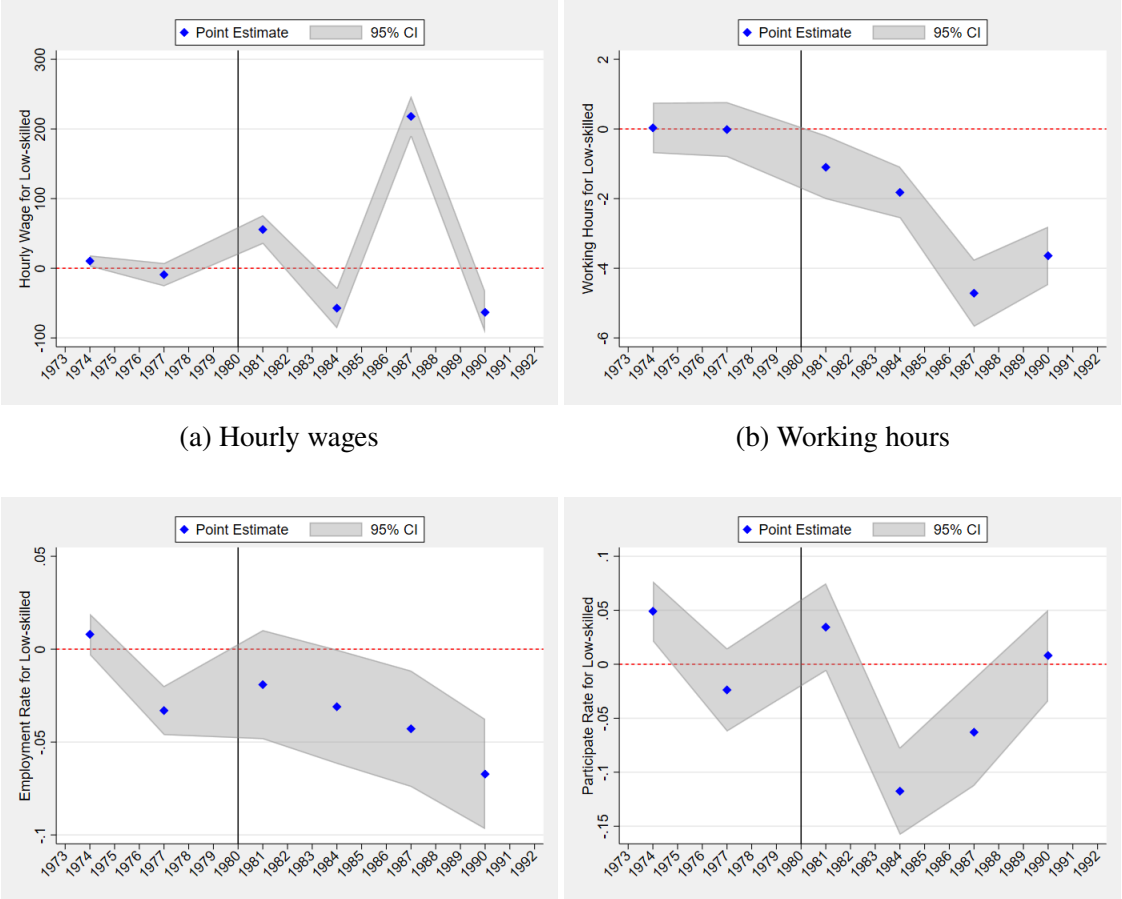
	(1) Without covariates	(2) With covariates (demographics)	(3) With covariates (labor market)
A. Hourly wage			
Miami × After 1980	0.167	0.333*	0.300
	(0.198)	(0.188)	(0.201)
B. Working Hour			
Miami × After 1980	−0.025	−0.004	−0.096*
	(0.053)	(0.056)	(0.053)
C. Employment rate			
Miami × After 1980	−0.018	−0.032	−0.014
	(0.025)	(0.025)	(0.025)
D. Participation rate			
Miami × After 1980	0.168	0.071	0.106
	(0.112)	(0.101)	(0.104)

Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the gender gap in the labor market outcomes of high-skilled natives. The sample is restricted to natives (in our definition, non-Cuban women) aged 18–65 with an educational attainment of at least a some college degree. The number of observations is 162. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

To examine the validity of the parallel trend assumption and dynamic effect of the immigration event on the labor market outcomes of low-skilled native women, we perform the event study analysis using the variables capturing the labor market conditions in the weight-calculating procedure. Figure D1 illustrates the results. Panel (a) ensures the validity of the parallel trend assumption; however, the estimates are too noisy to interpret the results. By contrast, a long-term negative impact on working hours is detected (Panel (b)). As in the analysis without the covariates, low-skilled native women decreased their weekly working hours by approximately 4.5 hours in 1986–1988. Panel (c) shows that the point estimate in 1976–1978 is negative and statistically significant, which implies that the observed negative impact is the lower bound. Although Panel (d) presents the results of the participation rate, the estimates are noisy.

We also present the results of the event study analysis of the immigration event on the labor market outcomes of high-skilled native women (Figure D2), the gender gap for low-skilled natives (Figure D3), and the gender gap for high-skilled natives (Figure D4). These figures ensure the robustness of our findings.



(a) Hourly wages

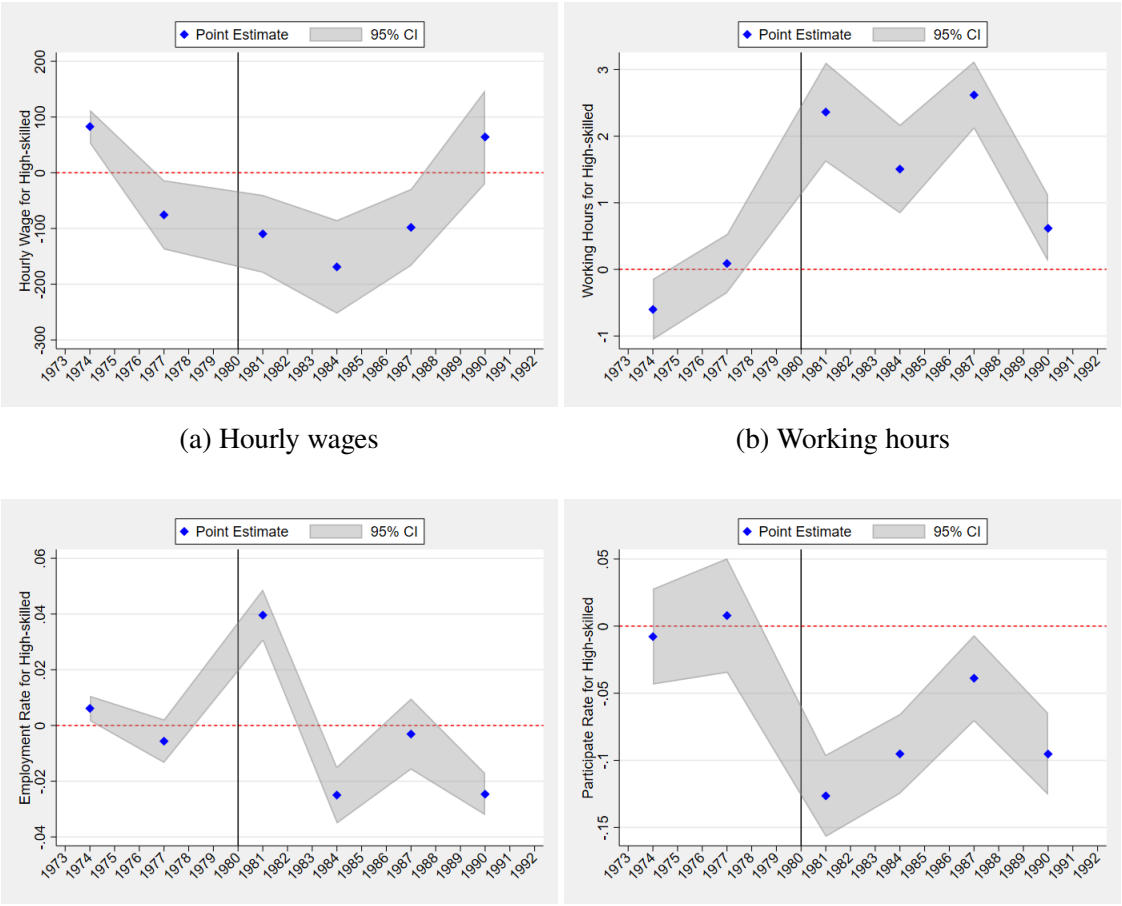
(b) Working hours

(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The figures illustrate the estimation results of the event study. The sample is restricted to native women (in our definition, non-Cuban women) aged 18–65 with an educational attainment less than or equal to a high school diploma. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. The blue points and gray bars show the point estimates and corresponding 95% confidence intervals, respectively. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years.

Figure D1: Event study for low-skilled native women (with covariates)



(a) Hourly wages

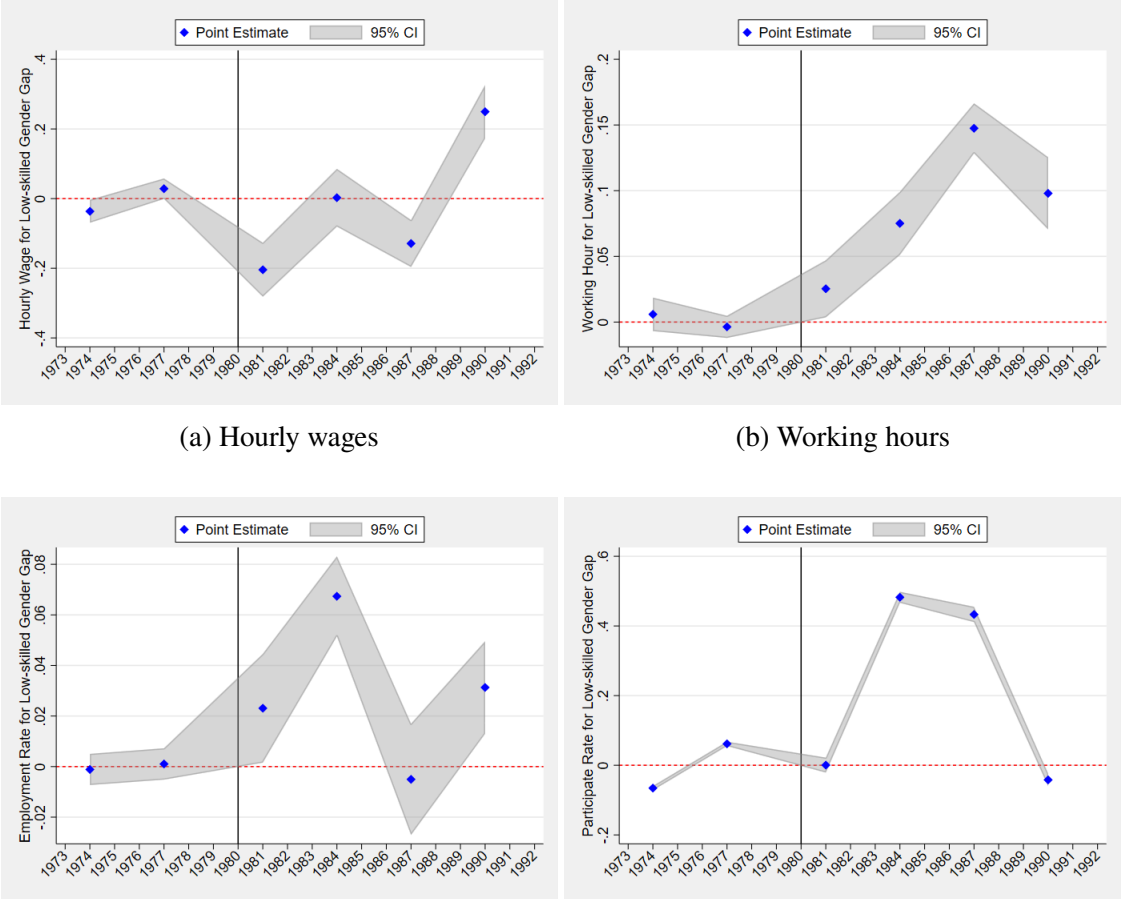
(b) Working hours

(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The figures illustrate the estimation results of the event study. The sample is restricted to native women (in our definition, non-Cuban women) aged 18–65 with an educational attainment of at least a some college degree. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. The blue points and gray bars show the point estimates and corresponding 95% confidence intervals, respectively. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years.

Figure D2: Event study for high-skilled native women (with covariates)



(a) Hourly wages

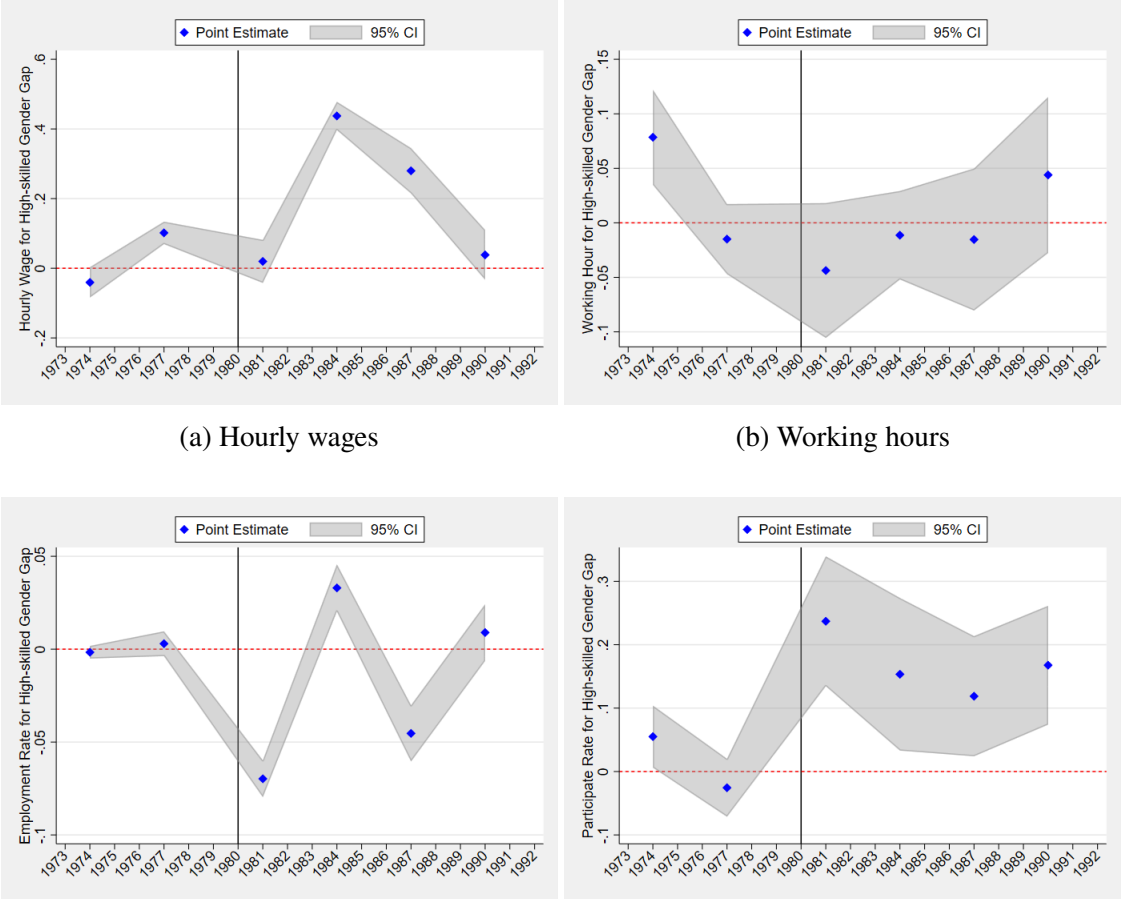
(b) Working hours

(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The figures illustrate the estimation results of the event study. The sample is restricted to natives (in our definition, non-Cuban people) aged 18–65 with an educational attainment less than or equal to a high school diploma. The outcome variables are the gender gap in the average hourly wage, average working hours, the employment rate, and the participation rate. The blue points and gray bars show the point estimates and corresponding 95% confidence intervals, respectively. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years.

Figure D3: Event study of the gender gap for low-skilled natives (with covariates)



(a) Hourly wages

(b) Working hours

(c) Employment rate

(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The figures illustrate the estimation results of the event study. The sample is restricted to natives (in our definition, non-Cuban people) aged 18–65 with an educational attainment of at least a some college degree. The outcome variables are the gender gap in the average hourly wage, average working hours, the employment rate, and the participation rate. The blue points and gray bars show the point estimates and corresponding 95% confidence intervals, respectively. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we take a three-year moving average without overlapping years.

Figure D4: Event study of the gender gap for high-skilled natives (with covariates)

E Robustness analysis without applying moving averages

In the main analysis, consistent with Borjas (2017), we apply a three-year moving average to the sample because of the limited number of observations in each MSA for a given year. This section examines the robustness of our results without applying such a moving average to the sample.

Table E1 presents the SDID estimation results of the impact of the Mariel Boatlift immigration event on the labor market outcomes of low- and high-skilled native women (Panels A and B) and the gender gap in the labor market outcomes of low- and high-skilled natives (Panels C and D). In each panel, Columns 1–4 present the impact on hourly wages, working hours, the employment rate, and the participation rate. Overall, the estimation results are consistent with the main analysis: low-skilled native women decreased their working hours, while their high-skilled counterparts increased theirs, although this result is not statistically significant. The gender gap in working hours and the employment rate for low-skilled native women widened. As anticipated, some point estimates are notably large and the standard errors tend to be larger than those in the main analysis.

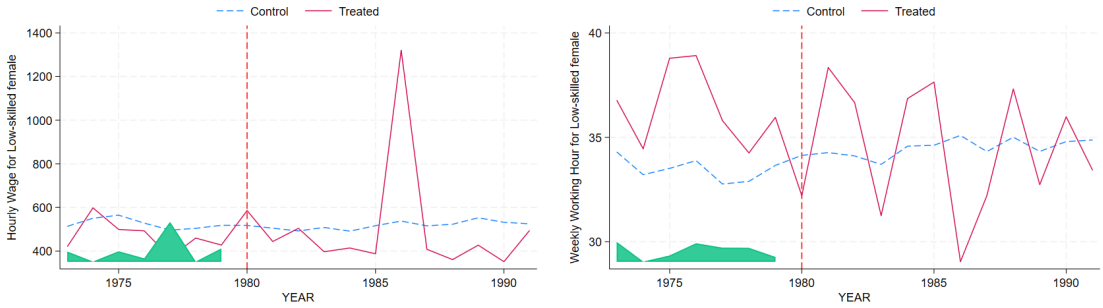
Figures E1–E4 illustrate the results of the event study analysis for the impact of the immigration event on the labor market outcomes of low- and high-skilled native women and the gender gap for low- and high-skilled natives, respectively. In each figure, Panels (a)–(d) present the impacts on hourly wages, working hours, the employment rate, and the participation rate. As suggested by Borjas (2017), average labor market outcomes in Miami fluctuate substantially over time because of the small number of observations. In most panels in Figures E1–E4, the parallel trend assumption appears invalid, underscoring the importance of using a moving average in our analysis. However, we emphasize that our findings remain robust regardless of whether a moving average is applied.

Table E1: Estimation results without taking a moving average (SDID)

	(1) Hourly wage	(2) Working hour	(3) Employment rate	(4) Participation rate
A. Low-skilled native women				
Miami × After 1980	93.242**	−3.217**	−0.036	−0.056
	(43.958)	(1.371)	(0.028)	(0.052)
B. High-skilled native women				
Miami × After 1980	−68.370	1.449	−0.000	−0.087*
	(88.629)	(1.099)	(0.017)	(0.046)
C. Gender gap for low-skilled natives				
Miami × After 1980	−0.083	0.118**	0.091**	−0.060
	(0.161)	(0.056)	(0.042)	(0.176)
D. Gender gap for high-skilled natives				
Miami × After 1980	0.010	0.031	−0.020	0.119
	(0.183)	(0.044)	(0.025)	(0.079)

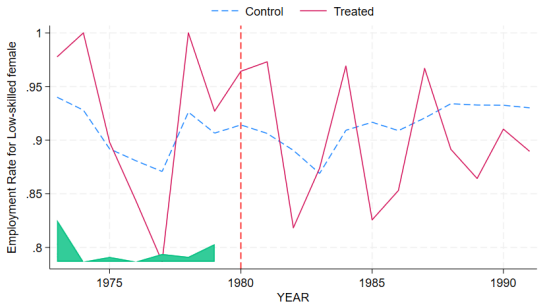
Source: CPS conducted by the IPUMS

Note: The table presents the estimation results of the impact of the Mariel Boatlift immigration event on the labor market outcomes of low- and high-skilled native women and the gender gap for low- and high-skilled natives. The sample is restricted to natives (in our definition, non-Cuban people) aged 18–65. The number of observations is 513. The outcome variables are the average hourly wage, average working hours, the employment rate, and the participation rate. All the regressions control for the MSA- and year-fixed effects. For the outcome variables, we do not take a moving average. Standard errors are in parentheses. *, **, and *** indicate that the estimates are statistically significant at the 10%, 5%, and 1% levels, respectively.

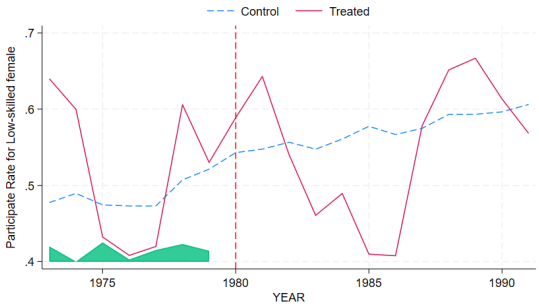


(a) Hourly wages

(b) Working hours



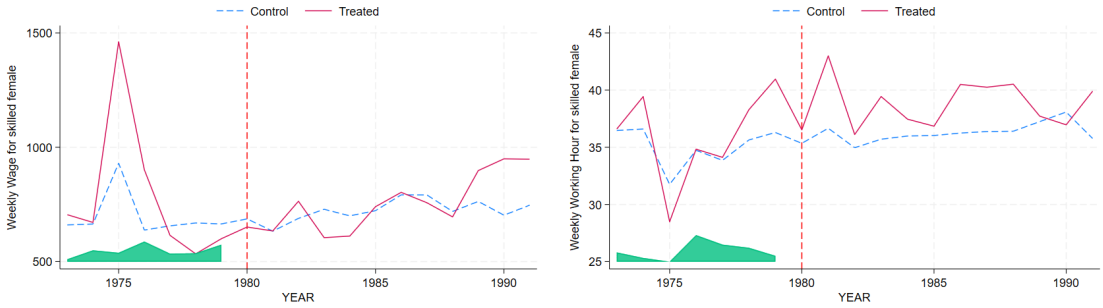
(c) Employment rate



(d) Participation rate

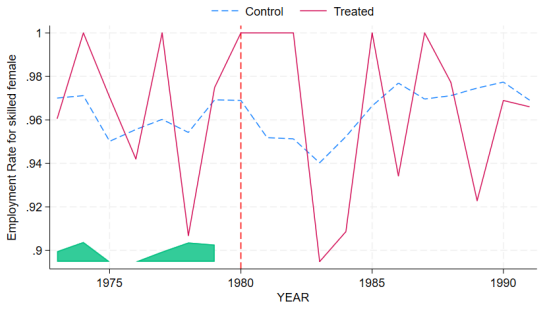
Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the labor market outcomes of low-skilled native women in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure E1: Outcome trends for low-skilled native women without taking a moving average

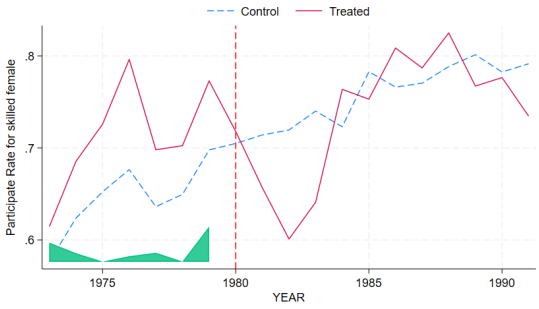


(a) Hourly wages

(b) Working hours



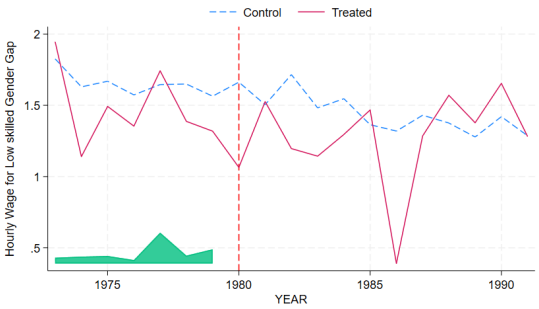
(c) Employment rate



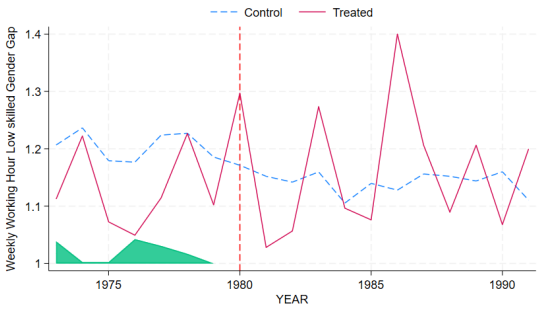
(d) Participation rate

Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the labor market outcomes of high-skilled native women in the treatment and control groups, respectively. The green area presents the time-specific weights.

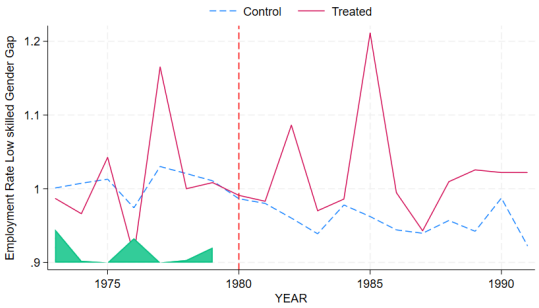
Figure E2: Outcome trends for high-skilled native women without taking a moving average



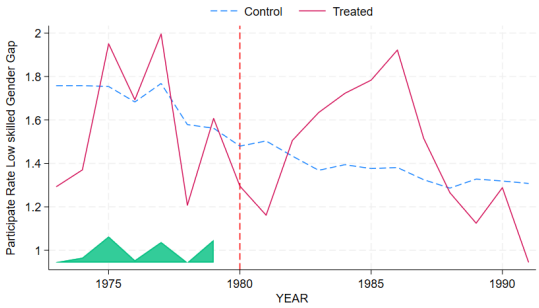
(a) Gap in hourly wages



(b) Gap in working hours



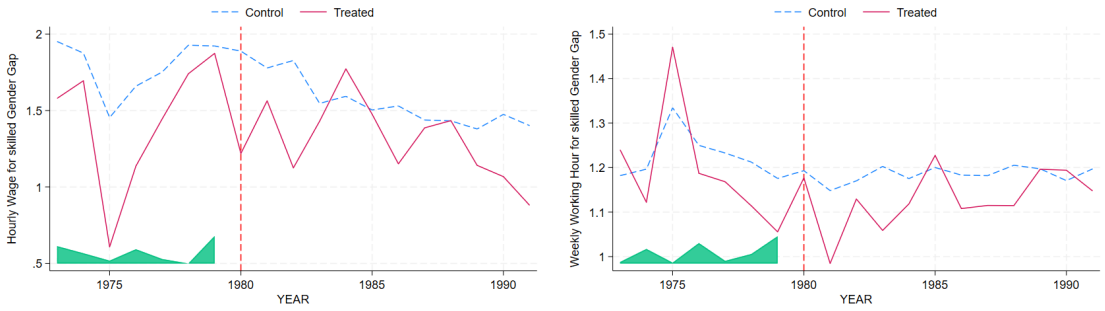
(c) Gap in the employment rate



(d) Gap in the participation rate

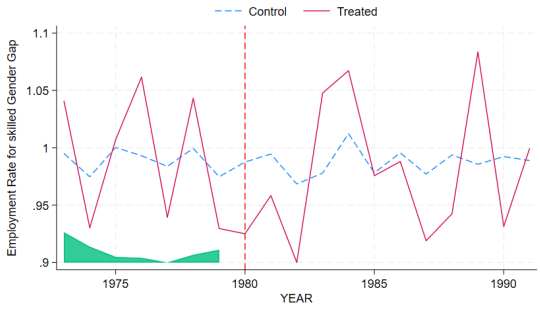
Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the gender gap in the labor market outcomes of low-skilled natives in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure E3: Outcome trends in the gender gap for low-skilled natives without taking a moving average

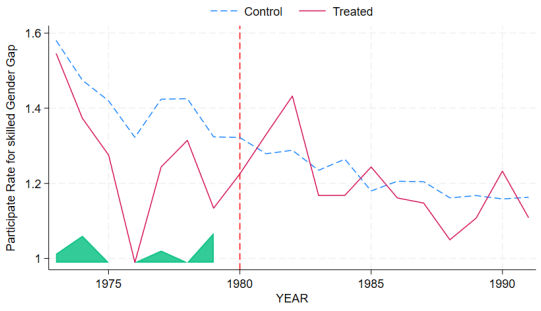


(a) Gap in hourly wages

(b) Gap in working hours



(c) Gap in the employment rate



(d) Gap in the participation rate

Source: CPS conducted by the IPUMS.
Note: The red and blue lines present the trends in the gender gap in the labor market outcomes of high-skilled natives in the treatment and control groups, respectively. The green area presents the time-specific weights.

Figure E4: Outcome trends in the gender gap for high-skilled natives without taking a moving average

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