Online Appendix to:
Effects of Gender-Specific Workweek Restrictions

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A Model Details

This section collects derivations and technical details supporting the theoretical model in the main text.

A.1 Linearizing the Labor Demand Equations

Recall from the main text the firm's first-order conditions for average hours and employment,

$$P_g \cdot \gamma \frac{H_g}{h_g} = w_g L_g, \qquad P_g \cdot (1-\gamma) \frac{H_g}{L_g} = \omega_g + w_g h_g,$$

where $P_g \equiv \partial Y / \partial H_g$ is the marginal revenue product of gender-g labor. From the CES structure, the log-differential of P_g is

$$\hat{P}_g = \left(\frac{1}{\pi} - \frac{1}{\sigma} \right) \hat{H} - \frac{1}{\pi} \hat{H}_g.$$

Demand for hours per worker Log-differentiating the hours FOC gives $\hat{P}_g + \hat{H}_g - \hat{h}_g = \hat{w}_g + \hat{L}_g$, and log-differentiating the employment FOC gives $\hat{P}_g + \hat{H}_g - \hat{L}_g = \theta \hat{\omega}_g + (1-\theta)(\hat{w}_g + \hat{h}_g)$, where

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$\theta \equiv \omega_g/(\omega_g + w_g h_g) = \frac{1-2\gamma}{1-\gamma}$. Subtracting the first from the second eliminates $\hat{P}_g$ and $\hat{H}_g$:

$$\hat{h}_g - \hat{L}_g = \theta\hat{\omega}_g + (1-\theta)\hat{h}_g - \theta\hat{w}_g - \hat{L}_g,$$

which simplifies to $\theta\hat{h}_g = \theta(\hat{\omega}_g - \hat{w}_g)$, and hence $\hat{h}_g = \hat{\omega}_g - \hat{w}_g$.

Demand for employment Log-differentiating the hours FOC and substituting $\hat{H}_g = \gamma\hat{h}_g + (1-\gamma)\hat{L}_g$ (the log-differential of $H_g = h_g^\gamma L_g^{1-\gamma}$), then collecting $\hat{L}_g$ terms gives

$$\hat{L}_g = \frac{\hat{P}_g}{\gamma} - \frac{1-\gamma}{\gamma}\hat{h}_g - \frac{\hat{w}_g}{\gamma}.$$

Replacing $\hat{h}_g = \hat{\omega}_g - \hat{w}_g$ yields $\hat{L}_g = \hat{P}_g/\gamma - [(1-\gamma)/\gamma]\hat{\omega}_g - \hat{w}_g$. Using $\hat{H}_g = \gamma(\hat{\omega}_g - \hat{w}_g) + (1-\gamma)\hat{L}_g$ (again from $H_g = h_g^\gamma L_g^{1-\gamma}$ and $\hat{h}_g = \hat{\omega}_g - \hat{w}_g$), substituting $\hat{P}_g$ from above, and collecting $\hat{L}_g$ terms yields the demand system reported in the main text,

$$\hat{h}_g = \hat{\omega}_g - \hat{w}_g, \qquad \hat{L}_g = \frac{1-\pi/\sigma}{1+\gamma(\pi-1)}\hat{H} - \frac{\gamma+\pi(1-\gamma)}{1+\gamma(\pi-1)}\hat{\omega}_g - \frac{\gamma(\pi-1)}{1+\gamma(\pi-1)}\hat{w}_g.$$

A.2 The Full Equilibrium System

We use the following notational convention to signal the origin of each parameter: lowercase Greek letters (ε_g^h, ε_g^L, $\tilde{\varepsilon}^h$, $\tilde{\varepsilon}^L$) denote supply-side elasticities and direct effects derived from the labor supply equations alone; Roman letters (d^H, d^ω, d^w) denote demand-side coefficients derived from the production structure alone; and capital Greek letters (Γ_g, $\tilde{\Gamma}$, Ω_g, Θ, Φ) denote composite quantities that combine supply and demand ingredients.

Define shorthand for the three demand-side coefficients in the employment-demand equation above:

$$d^H \equiv \frac{1-\pi/\sigma}{1+\gamma(\pi-1)}, \qquad d^\omega \equiv \frac{\gamma+\pi(1-\gamma)}{1+\gamma(\pi-1)}, \qquad d^w \equiv \frac{\gamma(\pi-1)}{1+\gamma(\pi-1)}.$$

We note for later that $d^H > 0$ if and only if $\pi < \sigma$, $d^\omega > 0$ for all π and γ, and $d^w > 0$ if and only if $\pi > 1$.

On the supply side, it is helpful to substitute $\widehat{\omega}_g = \widehat{w}_g + \widehat{h}_g$ throughout, yielding reduced-form supply-side composite elasticities:

$$\varepsilon_g^h \equiv \frac{\bar{\alpha}_g^h - \eta_g^h}{1+\eta_g^h}, \qquad \varepsilon_g^L \equiv \bar{\alpha}_g^L + \eta_g^L(1+\varepsilon_g^h), \qquad \Gamma_g \equiv \gamma\varepsilon_g^h + (1-\gamma)\varepsilon_g^L, \tag{1}$$

where ε_g^h, ε_g^L, Γ_g are the reduced-form elasticities of $\widehat{h}_g$, $\widehat{L}_g$, $\widehat{H}_g$ with respect to $\widehat{w}_g$ holding $\widehat{H}$ fixed. The direct effects of the increase in the workweek limit on female labor supply before any wage adjustment are

$$\tilde{\varepsilon}^h \equiv \frac{\alpha_{\bar{h}}^h}{1+\eta_f^h} \geq 0, \qquad \tilde{\varepsilon}^L \equiv \alpha_{\bar{h}}^L + \eta_f^L \tilde{\varepsilon}^h \geq 0, \qquad \tilde{\Gamma} \equiv s_f(\gamma \tilde{\varepsilon}^h + (1-\gamma)\tilde{\varepsilon}^L) \geq 0. \tag{2}$$

Note that if $\eta_g^h \leq \bar{\alpha}_g^h$, then $\varepsilon_g^h, \varepsilon_g^L$ and Γ_g are all non-negative.

Finally, define composite parameters that incorporate general equilibrium effects from the supply and demand sides:

$$\Omega_g \equiv \varepsilon_g^L + d^\omega \varepsilon_g^h + d^\omega + d^w, \qquad \Theta \equiv d^\omega \tilde{\varepsilon}^h + \tilde{\varepsilon}^L, \qquad \Phi \equiv d^H \left(\frac{s_m \Gamma_m}{\Omega_m} + \frac{s_f \Gamma_f}{\Omega_f} \right). \tag{3}$$

Here $\Omega_g > 0$ if $\pi > 0$ and $\eta_g^h \leq \bar{\alpha}_g^h$, $\Theta \geq 0$, and $\Phi \geq 0$ if $\sigma > \pi > 0$ and $\eta_g^h \leq \bar{\alpha}_g^h$.

Substituting $\hat{\omega}_g = \hat{w}_g + \hat{h}_g$ into the supply and demand equations, the system that defines the equilibrium response to a unit increase in the female workweek limit can be written as $Ax = b$, where

$$x = (\hat{h}_m,\, \hat{L}_m,\, \hat{w}_m,\, \hat{\omega}_m,\, \hat{h}_f,\, \hat{L}_f,\, \hat{w}_f,\, \hat{\omega}_f)^\top, \qquad b = (0,\, 0,\, 0,\, 0,\, \alpha_{\bar{h}}^h,\, \alpha_{\bar{h}}^L,\, 0,\, 0)^\top,$$

and A is the 8×8 matrix obtained by moving all terms to the left-hand side of the supply, demand-for-hours, and demand-for-employment equations, with $\hat{H}$ in the last two rows expanded as $\hat{H} = s_m(\gamma \hat{h}_m + (1-\gamma)\hat{L}_m) + s_f(\gamma \hat{h}_f + (1-\gamma)\hat{L}_f)$:

$$A = \begin{pmatrix} 1 & 0 & -\bar{\alpha}_m^h & \eta_m^h & 0 & 0 & 0 & 0 \\ 0 & 1 & -\bar{\alpha}_m^L & -\eta_m^L & 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\ -d^H s_m \gamma & 1-d^H s_m(1-\gamma) & d^w & d^\omega & -d^H s_f \gamma & -d^H s_f(1-\gamma) & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & -\bar{\alpha}_f^h & \eta_f^h \\ 0 & 0 & 0 & 0 & 0 & 1 & -\bar{\alpha}_f^L & -\eta_f^L \\ 0 & 0 & 0 & 0 & 1 & 0 & 1 & -1 \\ -d^H s_m \gamma & -d^H s_m(1-\gamma) & 0 & 0 & -d^H s_f \gamma & 1-d^H s_f(1-\gamma) & d^w & d^\omega \end{pmatrix}$$

Rows 1–3 are the male supply and demand-for-hours equations; rows 5–7 are their female counterparts. Each of these six rows involves only one gender's variables. Rows 4 and 8 are the demand-for-employment conditions: the only rows that couple male and female variables, doing so through the factor shares s_m, s_f and the production coefficients d^H, d^ω, d^w. This matrix can be inverted directly.

A.3 Stability of the Equilibrium

For the system to be stable, we need $\Phi < 1$. Let $\Pi = \pi/[1+\gamma(\pi-1)]$. From $\Omega_g - \Gamma_g = \gamma\varepsilon_g^L + \varepsilon_g^h(d^\omega - \gamma) + \Pi \geq \Pi > 0$ (where the inequality uses $d^\omega \geq \gamma$, which holds whenever $\gamma \leq 1/2$, and $\varepsilon_g^h, \varepsilon_g^L \geq 0$), it follows that $\Gamma_g < \Omega_g$, so $\Gamma_g/\Omega_g < 1$ and hence $\Phi = d^H \sum_g s_g \Gamma_g/\Omega_g < d^H$. There are two cases to consider:

- If $\pi \geq \gamma\sigma/(\gamma\sigma+1)$, then $d^H \leq 1$ so $\Phi < d^H \leq 1$.
- If $\pi < \gamma\sigma/(\gamma\sigma+1)$, then $d^H > 1$ and we need to use the tighter bound $\Gamma_g/\Omega_g < \Gamma_g/(\Gamma_g + \Pi)$ since $\Omega_g \geq \Gamma_g + \Pi$. Then $\Phi < d^H\Gamma_{\max}/(\Gamma_{\max}+\Pi)$ where $\Gamma_{\max} = \max(\Gamma_m, \Gamma_f)$, and a sufficient condition is
$$\Gamma_{\max} < \frac{\Pi}{d^H - 1} = \frac{\pi}{\gamma(1-\pi) - \pi/\sigma}. \tag{4}$$

Stability as $\pi \to 0$ The sufficient condition (4) becomes misleading near $\pi = 0$. As $\pi \to 0$, $\Pi \to 0$ so the right-hand side of (4) vanishes, apparently requiring $\Gamma_{\max} \leq 0$ and hence, with non-negative elasticities, all ε's forced to zero. This is an artifact of the bound being too crude when Π is small, not a genuine constraint.

To see the limiting behavior, note the algebraic identity $\Gamma_g = (1-\gamma)\Omega_g$ at $\pi = 0$ (verified directly from the definitions of Γ_g and Ω_g at $d^\omega = \gamma/(1-\gamma)$, $\Pi = 0$). Combined with $d^H = 1/(1-\gamma)$, this gives $\Phi = d^H(1-\gamma)(s_m + s_f) = 1$ exactly at $\pi = 0$, regardless of the sign of the elasticities. So $\Phi < 1$ fails at the limit point itself, but holds for all $\pi > 0$: expanding to first order, $1 - \Phi \approx \pi D$ where
$$D = -(1-\gamma)\frac{d(d^H)}{d\pi}\bigg|_{\pi=0} + \sum_g s_g \frac{\Omega_g'(0)}{\Omega_g^{(0)}} > 0,$$
with $\Omega_g^{(0)} = \varepsilon_g^L + \dfrac{\gamma}{1-\gamma}\varepsilon_g^h$ and $\Omega_g'(0) = \dfrac{1-2\gamma}{(1-\gamma)^2}\varepsilon_g^h + \dfrac{1}{1-\gamma} > 0$ for non-negative elasticities and $\gamma \leq \dfrac{1}{2}$. Stability therefore holds throughout the sequence $\pi \to 0^+$.

Assuming stability, the equilibrium changes are

$$\widehat{H} = \frac{\tilde{\Gamma} - s_f \Gamma_f \Theta / \Omega_f}{1 - \Phi}, \qquad \widehat{\omega}_g = \widehat{h}_g + \widehat{w}_g, \tag{5}$$

$$\widehat{w}_m = \frac{d^H \widehat{H}}{\Omega_m}, \qquad \widehat{w}_f = \frac{d^H \widehat{H} - \Theta}{\Omega_f}, \tag{6}$$

$$\widehat{h}_m = \varepsilon_m^h \widehat{w}_m, \qquad \widehat{h}_f = \varepsilon_f^h \widehat{w}_f + \tilde{\varepsilon}^h, \tag{7}$$

$$\widehat{L}_m = \varepsilon_m^L \widehat{w}_m, \qquad \widehat{L}_f = \varepsilon_f^L \widehat{w}_f + \tilde{\varepsilon}^L, \tag{8}$$

$$\widehat{H}_m = \Gamma_m \widehat{w}_m, \qquad \widehat{H}_f = \Gamma_f \widehat{w}_f + \tilde{\Gamma}/s_f. \tag{9}$$

The formula for $\hat{H}$ appears degenerate at $\pi = 0$, since both the numerator and denominator vanish there. The $0/0$ form resolves: expanding the numerator similarly gives $\tilde{\Gamma} - s_f \Gamma_f \Theta/\Omega_f \approx \pi \cdot s_f (1-\gamma)\Theta \Omega_f'(0)/\Omega_f^{(0)}$, so, using the expansion $1 - \Phi \approx \pi D$ from Section A.3,

$$\hat{H}|_{\pi \to 0} = \frac{s_f (1-\gamma)\Theta \Omega_f'(0)/\Omega_f^{(0)}}{D},$$

which is finite and non-zero with positive elasticities. The perfect-complements case is therefore a well-defined limit of the model, not a breakdown of it. Moreover, since s_f, $(1-\gamma)$, Θ, $\Omega_f'(0)$, $\Omega_f^{(0)}$, and D are all strictly positive under non-negative elasticities and $\gamma \leq \frac{1}{2}$, the formula immediately implies $\hat{H} > 0$ in the perfect-complements limit—no additional sufficient condition is required.

A.4 A Sufficient Condition for $\hat{H} > 0$

The sign of $\hat{H}$ is not guaranteed to be positive for general π (though it is automatic in the perfect-complements limit, as shown above). In short, if supply is sufficiently elastic, the wage-compression effect can dominate and $\hat{H} < 0$. Since $1 - \Phi > 0$ under stability, the sign of $\hat{H} = (\tilde{\Gamma} - s_f \Gamma_f \Theta/\Omega_f)/(1-\Phi)$ is the sign of its numerator, which is positive iff $\Gamma_f/\Omega_f < (\gamma + (1-\gamma)\rho)/(d^\omega + \rho)$, where $\rho \equiv \tilde{\varepsilon}^L/\tilde{\varepsilon}^h \geq 0$. Because $(1-\gamma)d^\omega > \gamma$ holds whenever $\gamma < \frac{1}{2}$ and $\pi > 0$ (verified by direct computation), the right-hand side is increasing in ρ, so its minimum over $\rho \geq 0$ is γ/d^ω (attained at $\rho = 0$). A sufficient condition is therefore $\Gamma_f/\Omega_f < \gamma/d^\omega$, i.e. $\Gamma_f d^\omega < \gamma \Omega_f$. Expanding using the definitions of Γ_f and Ω_f, the ε_f^h terms cancel and the condition reduces to

$$\varepsilon_f^L [(1-\gamma)d^\omega - \gamma] < \gamma \Pi.$$

The two bracketed quantities simplify: $(1-\gamma)d^\omega - \gamma = \pi(1-2\gamma)/[1+\gamma(\pi-1)]$ and $\Pi = \pi/[1+\gamma(\pi-1)]$, so their ratio is $1/(1-2\gamma)$. The sufficient condition therefore collapses to the condition reported in the main text,

$$\varepsilon_f^L < \frac{\gamma}{1-2\gamma}, \tag{10}$$

which is independent of π and σ. Since $\varepsilon_f^L \geq 0$, for this condition to hold, it must be that $\gamma \leq 1/2$.

A.5 Signing the Equilibrium Responses

Labor market outcomes for men including employment, workweek, and the wage are governed entirely by the sign of d^H: negative under perfect substitutes ($d^H = -1/(\gamma\sigma)$), weakly positive under Cobb-Douglas ($d^H = 1 - 1/\sigma \geq 0$), and strictly positive under perfect complements ($d^H = 1/(1-\gamma)$). Female outcomes are more difficult to characterize. The fixed payment $\widehat{\omega}_m$ is simpler to sign than it might appear: since men have no direct workweek-limit term, $\widehat{h}_m = \varepsilon_m^h \widehat{w}_m$, so $\widehat{\omega}_m = \widehat{h}_m + \widehat{w}_m = (1+\varepsilon_m^h)\widehat{w}_m$ always shares the sign of $\widehat{w}_m$, and hence of d^H, in every regime below. The same identity leaves $\widehat{\omega}_f$ harder to pin down, since the direct effect of the workweek limit on female hours, $\tilde{\varepsilon}^h \geq 0$, enters $\widehat{h}_f$ but not $\widehat{h}_m$.

- *Perfect substitutes* ($\pi \to \infty$): Here $d^H = -\frac{1}{\gamma\sigma}$, $d^\omega = \frac{1-\gamma}{\gamma}$, $d^w = 1$, $\Omega_g = \varepsilon_g^L + \frac{1-\gamma}{\gamma}\varepsilon_g^h + \frac{1}{\gamma}$, $\Theta = \frac{1-\gamma}{\gamma}\tilde{\varepsilon}^h + \tilde{\varepsilon}^L$. Both the general equilibrium feedback and the direct supply term depress the female wage, so $\widehat{w}_f < 0$, but this is not enough to sign $\widehat{h}_f$ or $\widehat{L}_f$.[1] Since $\widehat{\omega}_f = \widehat{h}_f + \widehat{w}_f$ nets the confirmed wage decline against the ambiguous hours response, it inherits the same ambiguity.

- *Cobb-Douglas* ($\pi \to 1$): Here $d^H = 1 - \frac{1}{\sigma}$, $d^\omega = 1$, $d^w = 0$, $\Omega_g = \varepsilon_g^L + \varepsilon_g^h + 1$, $\Theta = \tilde{\varepsilon}^h + \tilde{\varepsilon}^L$. While male workweek, employment, and wage rise, the outcomes for women are ambiguous; unlike men, female wages may even fall. The female fixed payment $\widehat{\omega}_f$ is ambiguous for the same reason as $\widehat{h}_f$ and $\widehat{L}_f$: none of $\widehat{w}_f$, $\widehat{h}_f$, or $\widehat{L}_f$ is signed in this regime.

- *Perfect complements* ($\pi \to 0$): Here $d^H = \frac{1}{1-\gamma}$, $d^\omega = \frac{\gamma}{1-\gamma}$, $d^w = -\frac{\gamma}{1-\gamma}$; $\Omega_g = \varepsilon_g^L + \frac{\gamma}{1-\gamma}\varepsilon_g^h$; $\Theta = \frac{\gamma}{1-\gamma}\tilde{\varepsilon}^h + \tilde{\varepsilon}^L$. Since $\widehat{H}_m$ rises, it must be that $\widehat{H}_f$ also rises, so at least one of $\widehat{h}_f$ or $\widehat{L}_f$ rises as well. However, it is not clear which one, or whether $\widehat{w}_f > 0$. Knowing that $\widehat{H}_f$ rises pins down only one of the two employment margins, not $\widehat{\omega}_f = \widehat{h}_f + \widehat{w}_f$ itself, so the fixed payment for women remains unsigned here as well.

As the main text's table of limiting cases makes clear, in most cases and for most variables the

[1] In the joint limit $\pi, \sigma \to \infty$, $d^H \to 0$ and men are unaffected.

effects for women are ambiguous. Here we derive sufficient conditions to sign the effects. One such condition is if $\hat{w}_f \geq 0$. Since $\Omega_f > 0$, the main text's solution $\hat{w}_f = (d^H \hat{H} - \Theta)/\Omega_f$ gives $\hat{w}_f \geq 0$ if and only if

$$d^H \hat{H} \ \geq \Theta. \tag{11}$$

When (11) holds, the other three female outcomes are also non-negative since $\hat{w}_f \geq 0$ implies $\hat{h}_f = \varepsilon_f^h \hat{w}_f + \tilde{\varepsilon}^h \geq 0$, $\hat{\omega}_f = \hat{h}_f + \hat{w}_f \geq 0$, and $\hat{L}_f = \varepsilon_f^L \hat{w}_f + \tilde{\varepsilon}^L \geq 0$.

If $\hat{w}_f < 0$, then the situation is more complicated. Since $\hat{h}_f = \varepsilon_f^h \hat{w}_f + \tilde{\varepsilon}^h$ and $\hat{L}_f = \varepsilon_f^L \hat{w}_f + \tilde{\varepsilon}^L$ from the main text, $\hat{h}_f \geq 0 \iff \hat{w}_f \geq -\tilde{\varepsilon}^h/\varepsilon_f^h$ and $\hat{L}_f \geq 0 \iff \hat{w}_f \geq -\tilde{\varepsilon}^L/\varepsilon_f^L$. Both are non-negative if and only if

$$\hat{w}_f \ \geq \ -\min\left(\frac{\tilde{\varepsilon}^h}{\varepsilon_f^h}, \frac{\tilde{\varepsilon}^L}{\varepsilon_f^L}\right). \tag{12}$$

Define $\Delta \equiv \varepsilon_f^h \tilde{\varepsilon}^L - \varepsilon_f^L \tilde{\varepsilon}^h$. When $\Delta \leq 0$ (i.e. $\tilde{\varepsilon}^h/\tilde{\varepsilon}^L \geq \varepsilon_f^h/\varepsilon_f^L$), the employment condition is binding and hours are automatically non-negative; when $\Delta \geq 0$, hours are the binding constraint and employment is automatically non-negative. In either case only one inequality needs to be verified, and which one depends on whether the ratio of direct supply effects $\tilde{\varepsilon}^h/\tilde{\varepsilon}^L$ falls above or below the ratio of supply elasticities $\varepsilon_f^h/\varepsilon_f^L$. Both cannot be negative since this would contradict $\hat{H}_f \geq 0$.

Under *perfect substitutes* with $\hat{w}_f < 0$ already established, for the quantity of female labor to increase, the direct supply expansions $\tilde{\varepsilon}^h, \tilde{\varepsilon}^L$ must be large enough relative to the supply elasticities $\varepsilon_f^h, \varepsilon_f^L$ to offset the wage compression. In the joint limit $\pi, \sigma \to \infty$, $d^H \to 0$ so $\hat{w}_f \to -\Theta/\Omega_f$, and (12) becomes

$$|\Delta| \leq \frac{\tilde{\varepsilon}^h}{\gamma} \quad \text{(hours, when } \Delta \geq 0\text{)}, \qquad |\Delta| \leq \frac{\tilde{\varepsilon}^L}{1-\gamma} \quad \text{(employment, when } \Delta \leq 0\text{)}. \tag{13}$$

With no GE push, the direct-supply imbalance $|\Delta|$ must not exceed the direct supply effect on the binding margin scaled by the inverse production weight ($1/\gamma$ for hours, $1/(1-\gamma)$ for employment). Substituting Δ and dividing by $\tilde{\varepsilon}^h$ (hours arm) or $\tilde{\varepsilon}^L$ (employment arm), both conditions collapse into a single band on $\rho \equiv \tilde{\varepsilon}^L/\tilde{\varepsilon}^h$:

$$\frac{\varepsilon_f^L}{\varepsilon_f^h + \dfrac{1}{1-\gamma}} \leq \frac{\tilde{\varepsilon}^L}{\tilde{\varepsilon}^h} \leq \frac{\varepsilon_f^L + \dfrac{1}{\gamma}}{\varepsilon_f^h}. \tag{14}$$

The center of the band is $r \equiv \varepsilon_f^L/\varepsilon_f^h$ (both bounds straddle r): the composition of the direct supply shock ρ must lie close to the composition of the supply elasticities r, with tolerance widening as

$\gamma \to 0$ or $\gamma \to 1$.

When ρ lies outside the band, exactly one margin goes negative while the other remains non-negative. If the upper bound is violated ($\rho > (\varepsilon_f^L + 1/\gamma)/\varepsilon_f^h$), then $\hat{h}_f < 0$ but $\hat{L}_f \geq 0$: the direct supply shock is too biased toward employment relative to what the supply elasticities predict, so the wage compression is large enough to reduce average hours, but employment still rises. If the lower bound is violated ($\rho < \varepsilon_f^L/(\varepsilon_f^h + 1/(1-\gamma))$), the opposite holds: $\hat{L}_f < 0$ but $\hat{h}_f \geq 0$. In each case the surviving margin is the one receiving the relatively larger direct push; the losing margin is dragged down by the wage compression despite the loosened limit.

Under *perfect complements* ($\pi \to 0$), $\hat{w}_f \geq 0$ if and only if $\hat{H} \geq (1-\gamma)\Theta = \gamma\tilde{\varepsilon}^h + (1-\gamma)\tilde{\varepsilon}^L$, in which case all three female outcomes are automatically non-negative. When $\hat{w}_f < 0$, condition (12) applies; substituting $\hat{w}_f = (\hat{H}/(1-\gamma) - \Theta)/\Omega_f$ with $\Omega_f = \varepsilon_f^L + \dfrac{\gamma}{1-\gamma}\varepsilon_f^h$ and $\Theta = \dfrac{\gamma}{1-\gamma}\tilde{\varepsilon}^h + \tilde{\varepsilon}^L$, the $\tilde{\varepsilon}$ terms cancel and the thresholds simplify to

$$\hat{H} \;\geq\; \frac{\gamma|\Delta|}{\varepsilon_f^L} \quad \text{(employment, when } \Delta \leq 0\text{)}, \qquad \hat{H} \;\geq\; \frac{(1-\gamma)|\Delta|}{\varepsilon_f^h} \quad \text{(hours, when } \Delta \geq 0\text{)}. \tag{15}$$

Aggregate labor must grow enough that the GE wage push offsets the direct-supply imbalance $|\Delta|$, scaled by the supply elasticity and production weight on the binding margin. Unfortunately, these expressions do not simplify further.

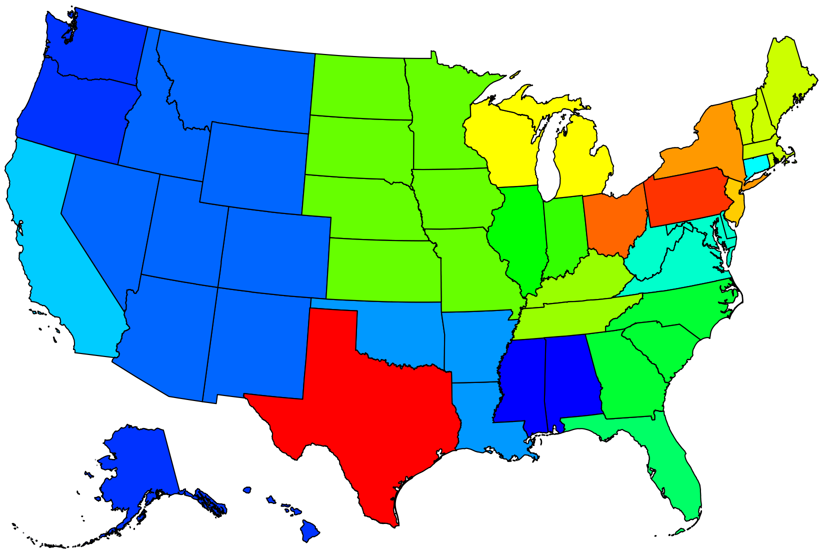
Comparing with (13), we see that the PS and PC cases are symmetric: under PS there is no GE push so the condition falls entirely on $|\Delta|$ being small; under PC the condition falls entirely on $\hat{H}$ being large.

B CPS State Groups and Sample Robustness

An important issue is that the CPS does not always identify each respondent's state during the years around many GHR repeals. In 1962 and from 1968 to 1976, some respondents are identified only by a CPS state group. Figure A.1 shows these state groups, including the singleton states that were always identified. Our preferred specification sidestepped this issue by focusing on the states that were consistently identified over the whole period: California, Connecticut, the District of Columbia, Florida, Illinois, Indiana, New Jersey, New York, Ohio, Pennsylvania, and Texas.

We consider two other options for how to deal with the state group issue. The first option is to use all data from uniquely identified states, which means that some states will drop in and out of the sample when they are placed in a state group. The other option is to include all CPS state-

Figure A.1: State Groups in the CPS, 1968–1976

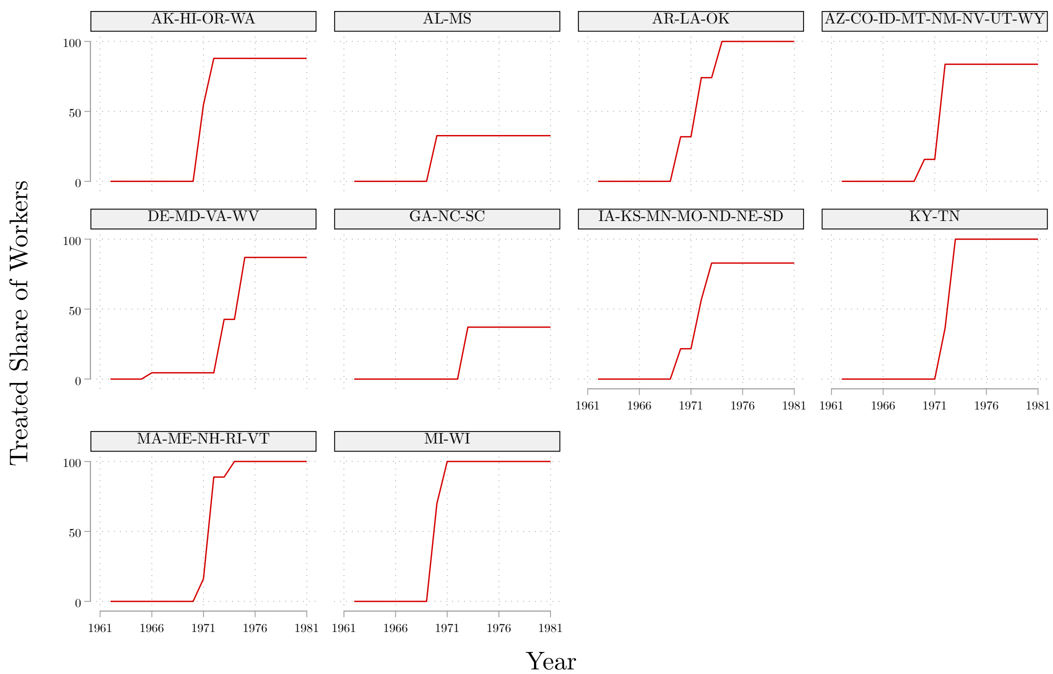


Notes: Each color denotes a CPS state group included in our sample from 1968 to 1976. Singleton states are always identified at the state level.

group observations and define treatment as the share of the state-group population living in a state that had repealed its GHR. Figure A.2 shows how treatment share for non-singleton state groups evolves over time. Repeals within a state group usually occur in a narrow window, so the share is often close to either zero or one.

Table A.1 summarizes how the preferred estimates move across the three design choices. Overall, results are consistent in terms of economic and statistical magnitudes across all three design choices. The only meaningful difference is the effects on hourly and annual earnings for men, which are negative in the state-group design though none of the estimates are statistically different from 0.

Figure A.2: Share of Workers Treated Within CPS State Group



Notes: The figure plots CPS state groups that contain more than one state. Treatment is the state-group population share living in a state with a repealed GHR.

Table A.1: Sample and Treatment-Definition Robustness

Outcome	Sex	Consistent states	All states	State-group share
Working over GHR	Women	0.011	0.009	0.011
		(0.004)	(0.002)	(0.003)
	Men	0.007	0.003	-0.009
		(0.006)	(0.005)	(0.014)
Weekly hours	Women	0.446	0.435	0.567
		(0.294)	(0.190)	(0.274)
	Men	0.433	0.281	0.361
		(0.177)	(0.149)	(0.192)
Transition out	Women	-0.014	-0.008	-0.020
		(0.006)	(0.006)	(0.008)
	Men	-0.011	-0.004	-0.019
		(0.006)	(0.005)	(0.007)
Log hourly earnings	Women	-0.043	-0.035	-0.044
		(0.013)	(0.012)	(0.013)
	Men	0.002	0.004	-0.016
		(0.011)	(0.009)	(0.012)
Log annual earnings	Women	-0.058	-0.048	-0.067
		(0.016)	(0.014)	(0.019)
	Men	0.006	0.008	-0.012
		(0.011)	(0.009)	(0.012)

Note: *** 1% statistically significant, ** 5% statistically significant, * 10% statistically significant. Each cell reports the coefficient on GHR repeal from the preferred specification, with conventional clustered standard errors in parentheses. The consistent-states column uses the 11 consistently state-identified CPS states. The all-states column uses all CPS states with no state-sample restriction. The state-group column uses CPS state groups and the population-share treatment measure. Workweek outcomes use the 1962–1980 sample and contemporaneous repeal treatment; transition and earnings outcomes use the 1963–1981 sample and lagged repeal treatment. Standard errors are clustered by state in the state-level columns and by state group in the state-group column. The long-format CSV output contains observation, cluster, and treated-group counts.

C Policy Timing and Bundled Legal Changes

In the main body of the paper, we defined the treatment as the first action to repeal a state's GHR. While seemingly simple, this definition hides some complexities. First, as we mentioned, in some cases, states took multiple actions to repeal their laws. For example, in Pennsylvania, there was an administrative action effectively repealing the GHR in 1969 and then a court case striking down the law in 1972, so in which year was Pennsylvania's limit truly dead and gone?

The other issue with this seemingly straightforward definition of the treatment is that, as we also mentioned, in many cases, the repeal of the GHR came packaged with the repeal of other gender-specific labor regulations. Consider again the case of Pennsylvania. In the same year as the GHR was repealed, a requirement for meal breaks for women and a ban on women working at night were also repealed, so what exactly are we capturing with a simple indicator for repealing the GHR?

Table A.2 reports robustness checks for both of these issues. Column 1 reports our baseline estimates. Column 2 reports estimates using the time of the last repeal action as the treatment. Column 3 simply drops states that had "bundled" repeals, i.e. that repealed other gender-specific regulations at the same time as the GHR. Again, these results are for the consistent sample of states.

Overall, we find that results are robust to these two issues. We do lose statistical significance for some of the effects when we define treatment based on the date of the last repeal action, and magnitudes shift accordingly. However, none of the effects change signs in either of the other alternative specifications.

Table A.2: Timing and Bundled Repeal Robustness Checks

Outcome	Sex	Baseline	Last	Drop bundles
Working over GHR	Women	0.011 (0.004)	0.007 (0.004)	0.007 (0.004)
	Men	0.007 (0.006)	0.000 (0.010)	0.008 (0.007)
Weekly hours	Women	0.446 (0.294)	0.287 (0.327)	0.516 (0.369)
	Men	0.433 (0.177)	0.267 (0.296)	0.595 (0.189)
Transition out	Women	-0.014 (0.006)	-0.009 (0.007)	-0.018 (0.008)
	Men	-0.011 (0.006)	-0.013 (0.004)	-0.018 (0.005)
Log hourly earnings	Women	-0.043 (0.013)	-0.015 (0.021)	-0.030 (0.016)
	Men	0.002 (0.011)	0.008 (0.010)	0.011 (0.011)
Log annual earnings	Women	-0.058 (0.016)	-0.035 (0.026)	-0.051 (0.021)
	Men	0.006 (0.011)	0.010 (0.011)	0.016 (0.011)

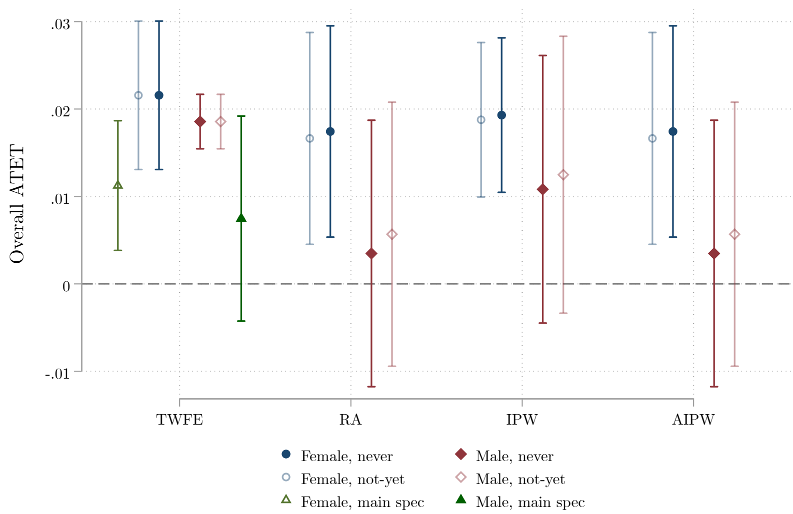
Note: The Baseline column uses the first-action treatment timing in the main design. The Last column replaces the GHR treatment year with the reconciled last nonmissing action year from the appendix timing audit. The Drop bundled column excludes states with bundled repeals. Standard errors are clustered at the state-level. The sample is the consistent set of states.

D Staggered-DiD Diagnostics

Our main specification uses the standard two-way fixed-effects model. Such a model implicitly aggregates potentially different treatment effects by treatment cohort and year. Here we report estimates of the average treatment effect using different weighting methods. These include the regression-adjustment (RA), inverse-probability-weighting (IPW), and augmented inverse-probability-weighting (AIPW) estimators. The AIPW estimator is the most useful summary for our purposes because it is robust to misspecification of either the outcome model or the treatment model. For computational reasons, we collapse individual records to weighted state-year-sex cells and weight each cell by its CPS sample size. The standard errors of the estimates are clustered by state.

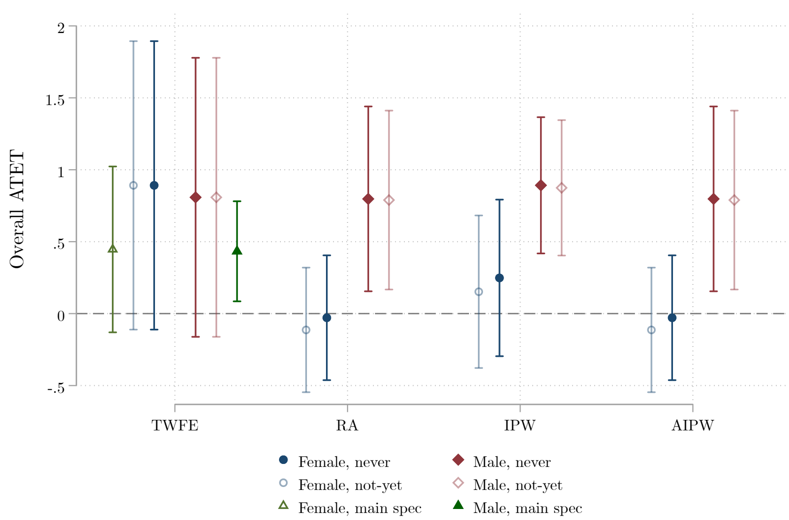
Figures A.3 through A.7 report the other average treatment effects for the employment and earnings outcomes using both never-treated and not-yet-treated control groups. We also include the results from our main specification. For working over the limit, the effects for men and women are fairly consistent across all the estimators. However, for workweek length, the effects for women do depend on the estimator used, with the RA, IPW, and AIPW results showing only minor changes in the workweek. For transitioning out of the affected industries, results are also somewhat sensitive to the estimator for both men and women. Qualitatively, there are no major differences across estimators for hourly or annual earnings and either gender.

Figure A.3: DiD Diagnostic: Working over GHR Limit



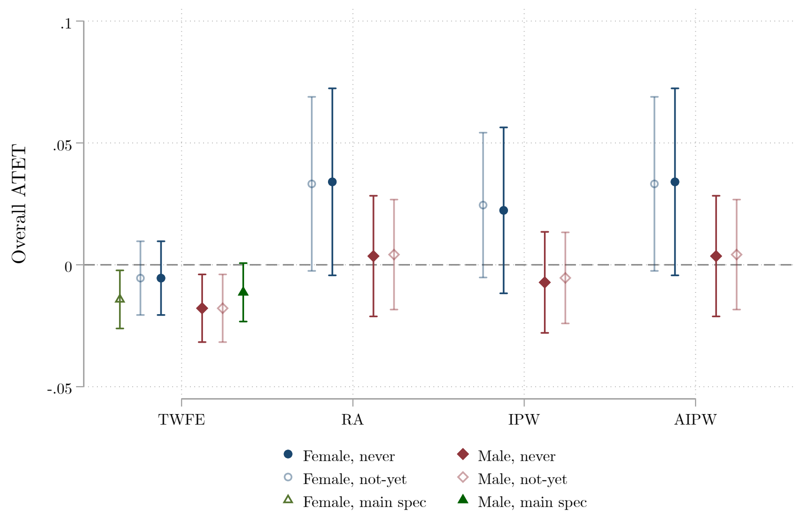
Notes: We report heterogeneous treatment effect aggregations using never-treated and not-yet-treated controls. The three aggregations are regression-adjustment (RA), inverse-probability-weighting (IPW), and augmented inverse-probability-weighting (AIPW). Standard errors are clustered at the state level. We also plot the conventional two-way fixed-effects estimate from our preferred specification ("main spec") as an additional point at the TWFE position, for comparison.

Figure A.4: DiD Diagnostic: Workweek Length



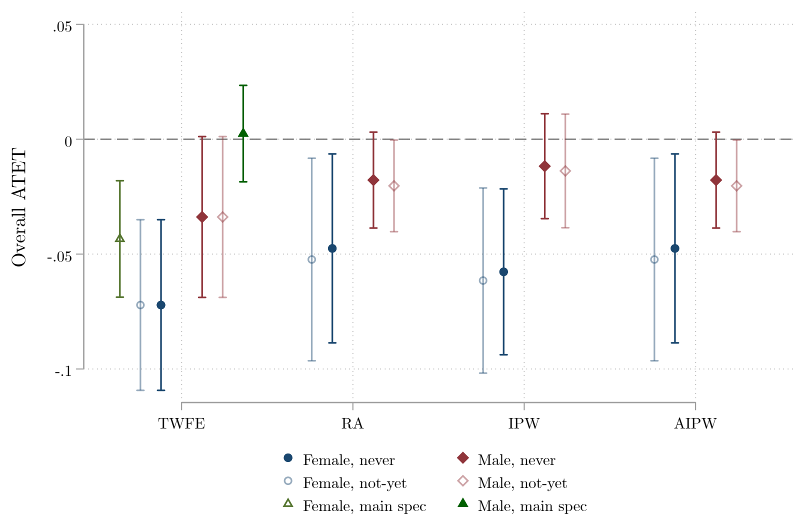
Notes: We report heterogeneous treatment effect aggregations using never-treated and not-yet-treated controls. The three aggregations are regression-adjustment (RA), inverse-probability-weighting (IPW), and augmented inverse-probability-weighting (AIPW). Standard errors are clustered at the state level. We also plot the conventional two-way fixed-effects estimate from our preferred specification ("main spec") as an additional point at the TWFE position, for comparison.

Figure A.5: DiD Diagnostic: Transition from Affected Industry



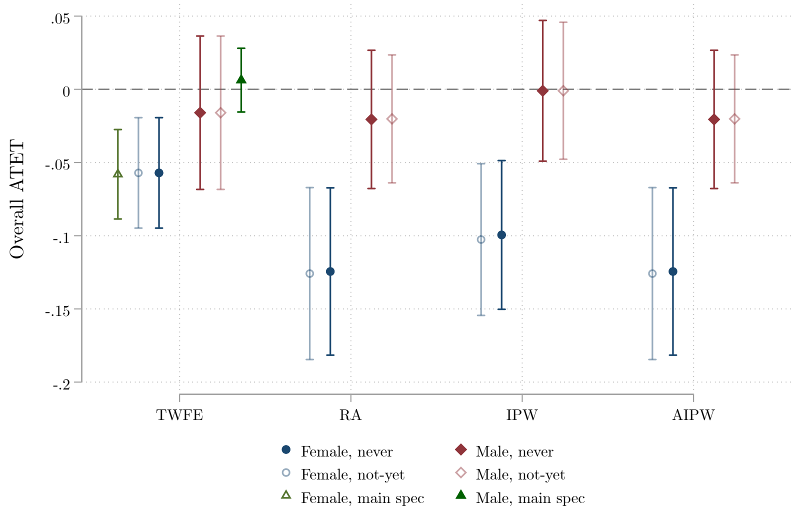
Notes: We report heterogeneous treatment effect aggregations using never-treated and not-yet-treated controls. The three aggregations are regression-adjustment (RA), inverse-probability-weighting (IPW), and augmented inverse-probability-weighting (AIPW). Standard errors are clustered at the state level. We also plot the conventional two-way fixed-effects estimate from our preferred specification ("main spec") as an additional point at the TWFE position, for comparison.

Figure A.6: DiD Diagnostic: Hourly Earnings



Notes: We report heterogeneous treatment effect aggregations using never-treated and not-yet-treated controls. The three aggregations are regression-adjustment (RA), inverse-probability-weighting (IPW), and augmented inverse-probability-weighting (AIPW). Standard errors are clustered at the state level. We also plot the conventional two-way fixed-effects estimate from our preferred specification ("main spec") as an additional point at the TWFE position, for comparison.

Figure A.7: DiD Diagnostic: Annual Earnings



Notes: We report heterogeneous treatment effect aggregations using never-treated and not-yet-treated controls. The three aggregations are regression-adjustment (RA), inverse-probability-weighting (IPW), and augmented inverse-probability-weighting (AIPW). Standard errors are clustered at the state level. We also plot the conventional two-way fixed-effects estimate from our preferred specification ("main spec") as an additional point at the TWFE position, for comparison.

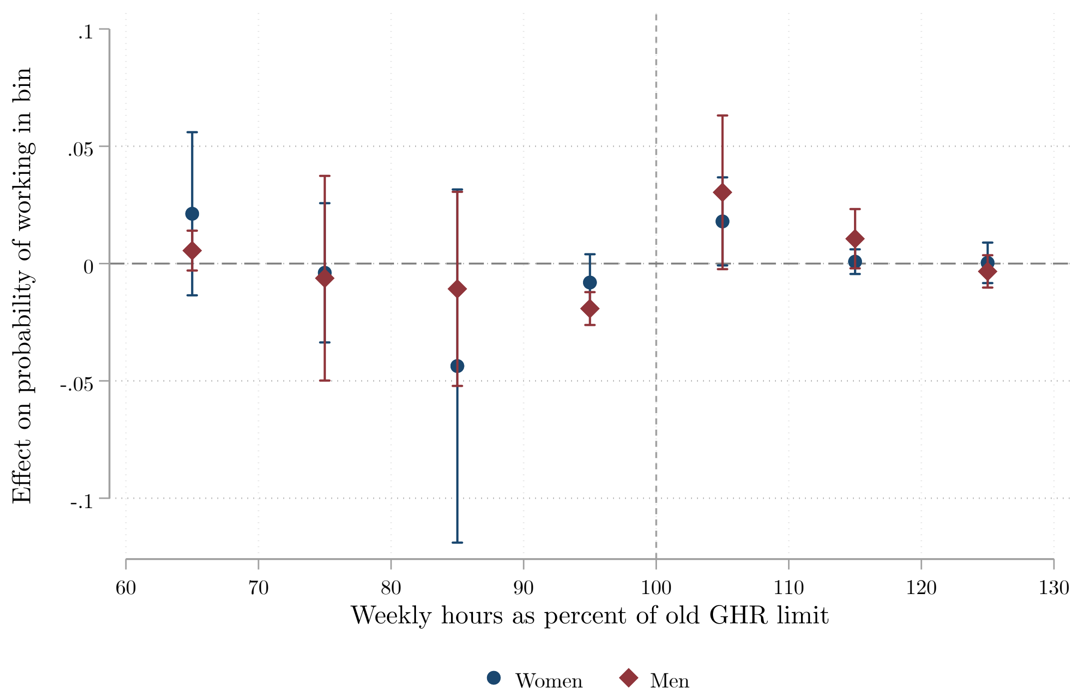
E Effects on the Distribution of the Workweek

Our main results only showed that the fraction working over the GHR limit and average workweek increased following repeal. An interesting question is where in the distribution of the workweek did these increases come from. Presumably, if it was actually the repeal of the laws that were driving these effects, we would expect to see the biggest changes in the distribution right around the old limit. In reality, the situation is more complex because repealing the workweek limit can lead new people to join the workforce, so it is not just the people already working close to the limit at the time of repeal who are marginal.

With this caveat in mind, we split individuals into 10-percentage-point bins based on their workweek as a percentage of their particular state's workweek limit. This means that two individuals with a workweek of 95 percent of the limit need not be working the same number of hours. We then create indicators for whether an individual falls in one of these workweek bins and use these as the outcome variable in our baseline specification.

Figure A.8 reports how the weekly-hours distribution changed around GHR repeal for the sample of states used in the main body. We find that there was an increase in the share of both men and women working just above the old workweek limit (between 100 and 110 percent of the limit) following repeal. Where did this increased share come from? It appears to have come from people working within 20 percentage points of the old workweek limit. To be clear, this does not show what happened to the workweek for any single individual since we do not observe individuals over time in the CPS.

Figure A.8: Effects of Repeal on the Distribution of the Workweek



Notes: Each point is a separate preferred-specification DD estimate taking as the outcome variable an indicator for an individual working in the $[k, k+10)$ scaled-hours bins. Bars show 95% confidence intervals clustered by state. The sample is the same as in the main body of the paper.

We take this as suggestive evidence in support of the claim that we are capturing the effect of the repeal of the workweek limit and not some confounder. While not theoretically impossible, it would have been surprising if the effects on the average workweek and share working over the GHR limit had been driven by people working very far from the limit. These results rule out that possibility.

F Effects on the Composition of the Workforce

In the main body, we mentioned that a possible explanation for the effects following repeal was a change in the composition of the workforce. In this scenario, it is possible that people who continued to work following repeal did not see any changes in how many hours they worked or how much they were paid. Instead, all of the changes we observed in average outcomes would be due to new people entering the workforce.

Table A.3 reports whether GHR repeal changed the composition of workers along three observable dimensions: marital status, children in the household, and educational attainment. The sample and specification used here are the same as in the main body. Overall, there is only limited evidence that repealing the workweek limit changed the composition of the male or female workforces along these dimensions. Perhaps the only exception is average educational attainment as measured by high school graduation, which appears to have risen slightly for men and women following repeal. While potentially interesting, this shift, assuming it is real, does not help us explain why male and female hourly earnings fell. If anything, the shift makes it more difficult to explain those declines.

Table A.3: Effects on Worker Composition

	Females	Males
Married		
Repealed GHR	0.006	-0.004
	(0.013)	(0.006)
Mean before repeal	0.735	0.865
Observations	53,271	92,037
Has own children in household		
Repealed GHR	-0.006	0.002
	(0.010)	(0.007)
Mean before repeal	0.678	0.701
Observations	43,292	73,440
High school diploma or more		
Repealed GHR	0.017	0.012
	(0.006)	(0.010)
Mean before repeal	0.123	0.272
Observations	52,027	89,887

Note: *** 1% statistically significant, ** 5% statistically significant, * 10% statistically significant. Data are from the March CPS, 1963–1981. The sample is restricted to private-sector wage and salary workers ages 26–56 in manufacturing or mercantile industries in the consistently state-identified CPS states. Regressions are weighted using CPS sample weights, and standard errors are clustered by state. The mean row reports the CPS-weighted mean among estimation-sample observations with the repeal indicator equal to zero. Each specification includes state-by-occupation-industry and year-by-occupation-industry fixed effects plus controls for state overtime laws and female minimum wages. Demographic controls are omitted because the demographics are the outcomes. The children outcome is an indicator for having any own children in the household; the CPS extract does not identify children's ages.