Evaluation of Impacts of the Reemployment and Eligibility Assessment (REA) Program: Final Report Appendices

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No statement in this document should be taken as stating an official interpretation of any federal or state statute or guideline, nor should any statement in this document be taken as stating an official DOL or state policy. Readers desiring information on statutes and guidelines should consult the appropriate legal documents. For the REA program, the pertinent Unemployment Insurance Program Letter is UIPL No. 10-14, "Fiscal Year (FY) 2014 Unemployment Insurance (UI) Reemployment and Eligibility Assessment (REA) Grants," http://wdr.doleta.gov/directives/attach/UIPL/UIPL_10_14.pdf.

This document describes state REA policies and implementation procedures—as inferred from site visits and analysis of administrative data—for the study period 2015 to 2017. Since that time the REA program has been sunsetted and the new Reemployment Services & Eligibility Assessment (RESEA) program has been implemented. Thus, the policies and implementation procedures described here are often no longer in place. Furthermore, in some cases, it is possible that state implementation did not completely align with then current federal REA program guidance. Deliberately, this report makes no comments about any misalignment, instead documenting only Abt's understanding and observation of states' implementation activities.

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Appendix Volume Overview

The body of the REA Impact Study report is deliberately brief. This separate appendix volume provides additional detail. **Appendix A** develops a formal economic theory of REA-like programs. **Appendix B** provides additional detail on the econometric specification and other estimation issues. **Appendix C** provides detailed results corresponding to Chapters 6 and 7, where available.

Appendix A. Formal Theory of the Impact of REA-Like Programs

This appendix presents a sequence of formal, neo-classical economic models to carefully describe the pathways through which REA and REA-like programs might affect outcomes—in particular, UI duration and long-term earnings. These models all build on the job search literature and its stochastic dynamic programming framework. The presentation assumes broad familiarity with analyzing economic models using continuous time stochastic programming methods.

The first two sections are almost totally conventional (McCall, 1970; Mortensen, 1986; Cahuc, et al., 2014). Section A.1 describes the basic stochastic job search model (no time limit)—in the absence of REA-like programs. Section A.2 describes the conventional extension to finite duration UI. Section A.3 generalizes the conventional analysis to endogenous search effort (a lemma for endogenous search effort appears at the end of Appendix A). Section A.4 discusses the empirical implications of the model for the empirical analyses in this report.

A.1 The Basic Stochastic Job Search Model

This section presents the basic stochastic job search model—in the absence of REA-like programs. In this model, the environment is static. Workers care only about discounted cash income (regardless of source), and the (continuous time) discount rate is r. For the employed, there is an exogenous instantaneous probability of job loss q. For the unemployed, job offers arrive stochastically from a known distribution of wages H[w] at a rate λ. Hours are implicitly fixed, so wages are equivalent to earnings. While unemployed and therefore not working, the worker has cash income y (perhaps spousal income, perhaps UI, perhaps SNAP and other transfer programs) and non-cash utility (in dollars per period) c—where c includes the net value of leisure. The worker's only choice is the reservation wage, x: wage offers above that level are accepted and the worker exits unemployment; wages offers below that level are rejected and the worker remains unemployed and continuing to search. (Section A.2 allows the worker to choose search intensity.)

Following conventional continuous time stochastic programming methods, given these assumptions, the "value" of being employed and unemployed (V_e and V_u, respectively) can be written as:

(A.1) $$V_e[w] = \frac{1}{1+rdt}\{wdt + (1-qdt)V_e + qdtV_u\}$$

In words, the value of being employed, V_e, in this period is equal to the discounted value of the outcome in the next instant: the wage, plus the weighted values of employment and unemployment, where the weights are given by the probability of not losing and losing the job, respectively (i.e., $(1-q)$ and q). Equivalently:

(A.2) $$V_e[w] - V_u = \frac{w - rV_u}{r+q}$$

There is no wage associated with unemployment, so the value of unemployment, V_u, is not a function of w.

Equation A.2 gives the relative value of employment and unemployment for a given wage. Holding wage offer w, the worker will accept the offer and become employed whenever $V_e[w]>V_u$, or equivalently if $w>rV_u$. The reservation wage, x, is the wage for which $x=rV_u$.

Given reservation wage x, the value of unemployment V_u can be written as:

$$\text{(A.3)} \qquad V_u = \frac{1}{1+r}\left\{\left((y+c)dt + (1-\lambda)V_u + \lambda\left\{\int_0^x V_u \, dH[w] + \int_x^\infty V_e[w]dH[w]\right\}\right)\right\}$$

In words, the value of being unemployed, V_u, in this period is equal to the discounted value of the next instant's outcome: cash income, plus psychic value of leisure, plus the weighted value of being unemployed next instant if no job offer arrives (which occurs with probability 1-λ) and the two possibilities if a job offer does arrive (with probability λ). The first term is the value of an offer arriving that is below reservation wage x. In that case, the worker remains unemployed and the value is V_u. This case occurs with the probability that wage offer w is less than reservation wage x; that is: $H[x] = \int_0^x dH[w]$. The second term is the value of an offer arriving that is above reservation wage x. In that case, the worker takes the offer and the value is $V_e[w]$—which varies with the specific wage offer received, w. This case occurs with the probability that wage offer w is greater than reservation wage x; that is, $1 - H[x] = \int_x^\infty dH[w]$.

Furthermore, we can implicitly characterize the reservation wage. To do so, we solve Equation A.2 for ambivalence between unemployment and employment; that is, the definition of reservation wage x, and substitute for V_u from Equation A.3, noting that $V_u = \int_0^x V_u \, dH[w] + \int_x^\infty V_u \, dH[w]$. Then we can write the reservation wage implicitly as follows:

$$\text{(A.4)} \qquad x = y + c + \frac{\lambda}{r+q}\int_x^\infty (w-x)dH[w]$$

Under these assumptions, and Equation A.4, the exit rate from unemployment (i.e., the hazard rate) is constant and by $\lambda\{1-H[x]\}$ (i.e., the probability that an offer arrives with offered wage w that is greater than reservation wage x). By the standard relation between a (constant over time) hazard rate and average duration, it follows that average duration of unemployment, T_u, is given by:

$$\text{(A.5)} \qquad T_u = \frac{1}{\lambda(1-H[x])}$$

Comparative statistics follow from the definition of the reservation wage, x:

$$\text{(A.6)} \qquad 0 = x - y - c - \frac{\lambda}{r+q}\int_x^\infty (w-x)dH[w] \equiv \phi[x, y, c, r, \lambda, q]$$

The first equality comes from rearranging Equation A.4, and the second equality defines ϕ.

Standard comparative static analysis applied to Equation A.6 implies that reservation wage x is increasing in the unemployment benefit, b, the psychic value of leisure (in dollars), c, and the arrival rate of offers, λ; but is decreasing in the discount rate, r, and the termination rate for jobs, q. It follows that the average duration unemployed, T_u, is increasing in income during unemployment (including any UI benefit), y, the value of leisure, c, and the termination rate for jobs, z; but is decreasing in the discount rate, r.

Finally, and crucially for our purposes, the effect of a change in offer rate λ on mean duration T_u is ambiguous. Examining Equation A.5, holding reservation wage x fixed, average duration is decreasing in the offer rate; that is, increasing the offer rate shortens average unemployment durations. But the reservation wage is not fixed; instead, it is a function of the offer rate. The higher the offer rate, the higher the reservation wage and the lower is *H[x]*—pushing up the average duration of unemployment.

Without further assumptions, the net impact is ambiguous. Under plausible regularity conditions on the distribution of offers (e.g., log concavity[1]), a higher offer rate will lower average time unemployed. The literature appears to find those regularity conditions plausible and therefore proceeds assuming that a higher offer rate lowers average time unemployed (Rogerson, Shimer, & Wright, 2005).

A.2 The Conventional Extension to Time-Limited UI

The previous section assumed that UI was not time limited. In fact, UI in the United States is time limited. This section generalizes the model of the previous section to allow time-limited UI. Following standard United States practice, we model the case of a constant cash benefit, b, through time period M, and no benefit thereafter.

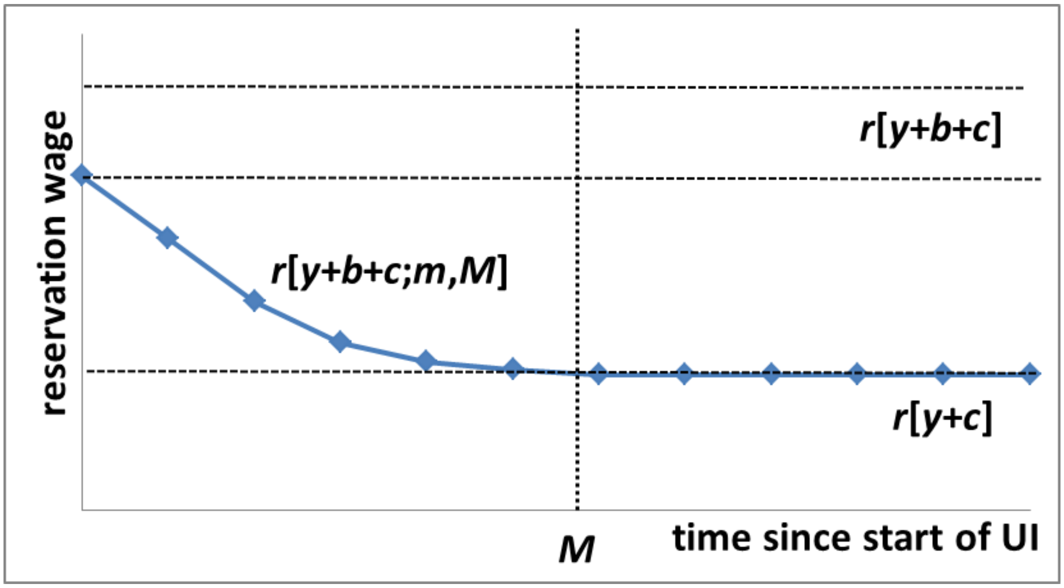
We begin by using Exhibit A-1 below to develop some intuition. Exhibit A-1 plots the reservation wage as the spell of unemployment continues.

- For a stationary problem (i.e., if UI lasted forever), the previous section showed that the reservation wage is increasing in income while unemployed (where the income included UI benefits). It follows that the reservation wage for an infinitely long UI benefit of amount b is greater than the reservation wage in the absence of that benefit: $r[y+b+c] > r[y+c]$.
- Past the end of UI (when $m>M$), we are in a stationary problem with no UI benefit, so the reservation wage is $r[y+c]$.
- The reservation wage falls as time passes—such that as the worker gets closer to the expiration of UI at M, the reservation wage, x, falls. To see this, consider two intervals since the start of the UI spell, p and q, where $p<q$, then: $r[y+b+c; m=p, M] > r[y+b+c; m=q, M]$.
- As we get close to the end of UI, the reservation wage needs to fall to that level $r[y+c]$.
- At the start of the UI spell, the reservation wage must be lower than the reservation wage for an infinitely long UI benefit of the same amount: $r[y+b+c] > r[y+c; m=0, M]$. To see this, note that if the maximum UI spell was even longer, the reservation wage would have to be even higher at the start of the spell.

Together, these properties yield the time path of the reservation wage shown in Exhibit A-1.

[1] On the role of log concavity, see Mortensen (1986), Flinn and Heckman (1983), Burdett and Ondrich (1985).

Exhibit A-1 Reservation Wage, by Time Since Start of UI



A.3 The Conventional Extension to Endogenous Search Intensity

This section generalizes the conventional model of Section A.1 (no time limit on UI) to allow for endogenous job search intensity. The extension to the time-limited UI case follows by an argument similar to that given in Section A.2. We do not provide the full argument.

Suppose that more effort, e, yields a higher offer rate, $\alpha\lambda[e]$ (where α is an exogenous shifter of the offer rate; for example, the state of the macro-economy; $\lambda'[e] > 0$ and $\lambda''[e] < 0$), but lower leisure $c[e]$ (where $c'[e] > 0$ and $c''[e] < 0$). Then, Equation A.4 becomes:

(A.7) $$x = b + c[e] + \frac{\alpha\lambda[e]}{r+q}\int_x^\infty (w-x)\,dH[w]$$

Differentiating Equation A.7 with respect to e (and applying the envelope theorem) yields:

(A.8) $$c'[e] = \frac{\alpha\lambda'[e]}{r+q}\int_x^\infty (w-x)\,dH[w]$$

Substituting from Equation A.7 yields:

(A.9) $$c'[e] = \frac{\lambda'[e]}{\lambda[e]}\left(x - b - c[e]\right)$$

Viewing Equations A.8 and A.9 as a system, it can be shown (see the lemma at the end of this appendix) that the qualitative findings from the fixed job search case are unchanged when we allow for endogenous job search. Specifically, increasing income while unemployed raises the reservation wage and lowers search effort. Both factors increase time unemployed. Furthermore, given the conventional further assumption of log concavity, under plausible regularity conditions of the distribution of offers, a higher offer rate will lower average time unemployed.

The key advantage of a model with endogenous job search is that it allows us to explore the effect of a better economy, α, on the outcomes of interest. A better economy increases the offer rate, but also increases the reservation wage, x. The net effect is ambiguous.

A.4 Implications of the Model

Exhibit A-2 summarizes the implications of the model. The left pair of columns ("a lot") attempts to capture the perspective of neo-classical economics; it assumes wide variation in the wage offer distribution. The right pair of columns attempt to capture an alternative perspective that focuses on faster employment with less focus on match quality and longer term earnings. That position appears to implicitly assume little variation in the wage offer distribution.

Exhibit A-2 Implications of the Model

	Variation in the Distribution of Wage Offers			
	"a lot"		None, Not "a lot," With Regularity Conditions	
As ... rises	Time unemployed…	Accepted wage…	Time unemployed…	Accepted wage…
λ offer rate	Ambiguous	Rises	Falls	Unchanged
b UI benefit	Rises	Rises	Rises	Unchanged
c value of leisure	Rises	Rises	Rises	Unchanged

Then we can capture the mental models and therefore the policy expectations of various observers:

- ***Neo-classical economists*** might be taken as viewing REA as operating through assistance by increasing the offer rate. However, they (implicitly) believe that there is considerable variation in wages. They therefore believe that the impact of REA on UI duration is probably (but not certainly) negative and that long-term earnings should rise.
- ***Alternative perspective*** views REA as operating through assistance by increasing the offer rate. This perspective also (implicitly) believes that there is not a lot of variation in wages. They therefore expect REA to decrease UI durations without affecting long-term (past the initial UI spell) earnings.
- Alternatively, neo-classical economics might be taken as viewing REA as a ***tax on leisure***, with no change in the offer rate (i.e., the assistance has no impact on offers). The requirement to come to the REA meeting lowers c. According to the model, REA will cause time on UI to fall. Assuming there is variation in wages, long-term earnings will also fall. To see this, consider the case of no variation in wages and a likely wage offer just barely above the no-UI reservation wage $r[y+c]$. This worker will not accept any wage offer until just before the expiration of UI. The lost leisure from having to appear at the REA meeting and comply with other REA requirements may push the reservation wage down, so the wage offer looks more attractive than staying on UI. To be plausible, this line of argument requires a substantial loss of leisure. It is not obvious that even a half-day meeting would induce enough loss of leisure to change the decision calculus.

It follows that the composite effects of the REA intervention—that is, *Existing* versus *Control*—are ambiguous. Inasmuch as REA is a leisure tax, it should lower UI durations and (perhaps) long-term earnings (because truncated job search leads to worse job matches). Inasmuch as REA's assistance increases the offer rate, it will probably lower UI durations, and the impact on long-term earnings is expected to be positive.

The impact of *Existing* vs. *Partial* is clearer. This contrast holds constant the leisure tax, but increases the assistance. Inasmuch as there is enough variation in wages (which in this model are equivalent to earnings), they will rise. Without variation in the distribution of wages, earnings would not be expected to change, but UI durations would be expected to fall.

A.5 Lemma for Endogenous Search Effort

Define: $\Omega \equiv \frac{1}{r+q}\int_x^\infty (w-x)dH[w]$

Then

(A.10)
$$\begin{aligned} x &= b + c[e] + \frac{\alpha\lambda[e]}{r+q}\int_x^\infty (w-x)dH[w] \\ &= b + c[e] + \alpha\lambda[e]\Omega \\ \Rightarrow \Omega &= \frac{1}{\alpha\lambda[e]}(x-b-c[e]) \end{aligned}$$

Differentiating Equation A.10 with respect to e (and applying the envelope theorem) yields:

(A.11)
$$c'[e] = \frac{\alpha\lambda'[e]}{r+q}\int_x^\infty (w-x)dH[w] = \alpha\lambda'[e]\Omega$$

Substituting from Equation A.10 yields

(A.12)
$$c'[e] = \frac{\lambda'[e]}{\lambda[e]}(x-b-c[e])$$

Now total differentiating with respect to x and b yields:

(A.13)
$$0 = \frac{\lambda'[e]}{\lambda[e]}\left(\frac{dx}{db}-1\right) \Rightarrow \frac{dx}{db} = 1 > 0$$

Now total differentiating with respect to e and b yields:

(A.14)
$$\begin{aligned} c''[e]de &= (x-b-c[e])\frac{d}{de}\left[\frac{\lambda'[e]}{\lambda[e]}\right]de - \frac{\lambda'[e]}{\lambda[e]}db - c'[e]de \\ \frac{\lambda'[e]}{\lambda[e]}db &= \left\{(x-b-c[e])\frac{d}{de}\left[\frac{\lambda'[e]}{\lambda[e]}\right] - c''[e] - c'[e]\right\}de \\ &= \left\{(x-b-c)\left(\frac{\lambda''\lambda-(\lambda')^2}{\lambda^2}\right) - c'' - c'\right\}de \\ \Rightarrow \frac{de}{db} &= \frac{\lambda'}{\lambda}\left\{\frac{1}{(x-b-c)\left(\frac{\lambda''\lambda-(\lambda')^2}{\lambda^2}\right) - c'' - c'}\right\} < 0 \end{aligned}$$

The term outside the brackets is positive ($\lambda > 0$ and $\lambda' > 0$). In the denominator, the leading term is positive (Equation A.10 implies that $x - b - c[e] = \alpha\lambda[e]\Omega$; and the right side is clearly positive: *a* and λ are rates, and Ω is an integral of a positive quantity). In the ratio, the denominator is a square and so clearly positive. In the numerator, the first term is clearly negative ($\lambda' > 0$ and $\lambda'' < 0$); the second term is a square, so clearly positive. Subtracting a positive from a negative yields a negative. The second and third terms are subtracting positive terms ($c' > 0$ and $c'' > 0$). Thus, the term in curly brackets is negative, so the product is negative.

Appendix B. Data and Methods

This appendix provides a detailed discussion of data and methods. Section B.1 includes a brief overview of sample construction. Section B.2 discusses estimation methods, including the basic regression model, and the approach to producing pooled and subgroup estimates. Section B.3 includes covariates at the individual level and at the state or office level. Section B.4 lists and defines subgroups. Section B.5 provides sample statistics (number of valid observations (*N*), mean, standard deviation) for the covariates and outcomes.

B.1 Sample Construction

Each state provided data from two sources: UI benefit system data (including information from the initial claim, claiming by week, and payments by week), and case management system data (including information on scheduling of and attendance at REA meetings, and compliance issues – non-monetary actions and denials, with detailed reason codes). Our combined analysis file began with everyone who was randomized. We then dropped cases for of the following reasons:

- Manual random assignment which could not be verified to meet the study's randomization protocol (occurred only in some offices and in some weeks);
- Multiple and/or backdated claims which resulted in multiple random assignments to different treatment groups for the same person;
- Problems determining a claimant's original office because the claimant was assigned to a different (usually neighboring) office for their REA meeting; and
- Missing claim or payment information.

A more detailed discussion of the types of data anomalies the study encountered is provided in Minzner, et al. (2017). Exhibit B-1 lists the number of claimants who were originally randomized in each state (the "Study Sample"), the number excluded for various reasons, and the final analytic sample size for each state and treatment group ("Analytic Sample").

Exhibit B-1 Post-Randomization Exemptions and Final Analytic Sample Size by State

	IN	NY (2 arm)	NY (4 arm)	NY (Total)	WA	WI
"Study Sample" (UI Claimants who were randomly assigned to a treatment or control group)	51,455	105,533	70,124	175,657	46,626	26,167
# Excluded for Problems with Randomization	334	1,779	7,345	9,124	1,196	0
# Excluded for Multiple Random Assignments	0	471	300	771	141	21
# Excluded for Problems Determining Original Office	0	43	0	43	0	0
# Excluded because they are missing initial claim record	31	0	0	0	233	485
# Excluded because they have no payment information	58	2,714	1,739	4,453	190	1,456
# Excluded for missing or 0 weekly benefit/maximum benefit amount on initial claim	1,025	82	38	120	1,548	35
"Analytic Sample"	50,007	100,444	60,702	161,146	43,318	24,170
Control	7,685	18,995	14,966	33,961	9,576	8,073
Multiple	0	81,449	15,744	97,193	11,546	8,043
Single	24,445	0	15,027	15,027	11,237	0
Partial	17,877	0	14,965	14,965	10,959	8,054

B.2 Estimation Methods

We estimate our models separately for each state; for estimation, New York two-arm and New York four-arm are treated as different states.[2] Specifically, we estimate one model for *Existing* vs. *Partial* vs. *Control* for each state. We also estimate a model for *Multiple* vs. *Single* vs. *Control* for each state that implemented all four treatment conditions (i.e., New York four-arm and Washington). New York two-arm did not implement *Partial*; nevertheless, those records contribute to the *Existing* vs. *Control* contrast for New York.

We report results at the state level. Where there are New York results for both New York two-arm and New York four-arm, the New York estimate is the minimum variance combination of the two-arm and four-arm results (see Equation B.3 below for the formula).

We also report a pooled estimate across all states. Again, the pooled estimate is the minimum variance combination—in this case, across states, where New York two-arm and New York four-arm have already been combined.

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[2] We estimate separate models for New York two-arm and New York four-arm for two reasons. First, the sites (i.e., offices) are different. Second, the samples are large enough to support separate estimation of the regression coefficients for the covariates.

The Basic Regression Model. The basic regression model is:

(B.1) $$y_{s,i} = \alpha_s + d_{s,i,2}\delta_{s,2} + d_{s,i,3}\delta_{s,3} + X_{s,i}\beta_s + \mu_{o,w} + \varepsilon_{s,i}$$

where

- $y_{s,i}$ denotes the outcome of interest for the i^{th} UI claimant in state *s*,
- $d_{s,i,2}$ and $d_{s,i,3}$ are a pair of dummy variables for the non-*Control* treatment conditions (either *Existing* and *Partial* or *Multiple* and *Single*; *k*=1/*Control* is the excluded category; see immediately below);
- $X_{s,i}$ is a vector of background characteristics of the claimant (specified as of randomization or before), the local economy (at randomization), and dummy variables for site and week of randomization;
- $\mu_{o,w}$ is a dummy variable for every office (*o*) and week of randomization (*w*) combination;
- $\varepsilon_{s,i}$ is a proper regression residual (i.e., uncorrelated with the regressors by random assignment).

Further, $\delta_{s,k}$ would represent the impact of treatment condition *k* relative to *Control* in state *s*. And α and β, which vary with state, are other parameters to be estimated. In this formulation, the delta parameters (δ) express the impact of a treatment condition relative to a control group. To express the differential impact of two (*Control/No REA*) treatment conditions *k* and *j* (in state *s*), we form:

(B.2) $$\Omega_{s,k,j} = \delta_{s,j} - \delta_{s,k}$$

This is a conventional linear combination of parameter estimates. Standard software packages (including SAS®, which we use for our analyses) will compute and report standard errors for such differential estimates.

Weighting. Randomization fractions in three of the states were constant. The exception is Indiana, where randomization fractions were set to adjust office/week-specific workload. To adjust for this variation in randomization fractions, we reweight each observation such that the weighted totals in each office/week pair equal the average for Indiana—across all offices and weeks.

Estimation. Estimation proceeds, separately for each state (where New York two-arm and New York four-arm are separate states). We start by manually implementing a within transformation; that is, we compute the mean of the dependent variable and each of the covariates for each office × week of randomization. We then subtract those means from each observation. This step implicitly controls for office × week of randomization fixed effects. We then estimate the regressions—without the fixed effects. Standard errors are computed using Taylor Expansion heteroscedasticity-robust standard errors, but with no intercept.[3]

[3] The standard error computations do not account for the loss of degrees of freedom due to the within transformation. The number of observations is so large that the effect of failure to do so is trivial (i.e., the t-distribution has nearly converged to a normal).

Pooled Estimates. Beyond these state-specific estimates and testing for heterogeneity, we will also report "pooled" estimates. These pooled estimates proceed on the assumption that we are estimating a single common impact across the states. Specifically, the pooled estimate of the differential impact of treatment condition *k* versus treatment condition $\Omega_{j,k}$ is a weighted sum of the estimates in each of the four states, $\Omega_{s,k,j}$, and the weights, *w*, sum to 1.

(B.3)
$$\Omega_{k,j} = \sum_{s=1}^{4} w_s \Omega_{s,k,j} \quad \text{where} \quad 1 = \sum_{s=1}^{5} w_s$$

And we use the weights that minimize the variance of the sum (and thus give the most precise estimates—given the assumption of a single common impact):

(B.4)
$$w_s = \left\{ \frac{1}{\sum_{q=1}^{4} \frac{1}{Var\left[\Omega_{q,k,j}\right]}} \right\} \frac{1}{Var\left[\Omega_{s,k,j}\right]}$$

That is, the weights are proportional to the inverse of the variance of the estimate of the impact for each state. Under the assumption of equal true impact in each state, this is the most precise linear combination of the estimates for that true impact.[4]

Subgroup Estimates. We estimate the differential impact of binary subgroups *g* (i.e., *g*=0 or *g*=1) using a simple generalization of the previous approach, indicator, *g*.

(B.5)
$$y_{s,i} = \alpha_s + d_{s,i,2}\delta_{s,2} + d_{s,i,3}\delta_{s,3} + d_{s,i,2}g_{s,i}\gamma_{s,2} + d_{s,i,3}g_{s,i}\gamma_{s,3} + X_{s,i}\beta_s + \mu_{o,w} + \varepsilon_{s,i}$$

Equation B.5 begins with Equation B.1 and then adds interactions of both treatment dummy variables with the binary subgroup, *g*. Given this parameterization, the implied impact for treatment condition *k*, in state *s*, when γ=0 is $\delta_{s,k}$. The implied impact for γ=1 is $\delta_{s,k}+\gamma_{s,k}$. Finally, the differential impact (i.e., for *g*=1 relative to *g*=0) is $\gamma_{s,k}$. We usually only discuss subgroup results when the test fails to reject the hypothesis of no differential impact; that is, evidence of different impacts across the two subgroups.

4 An alternative approach would be to give each state equal weight. Some exploratory calculations suggest that this optimal weighting improves precision by very roughly 5 to 10 percent. (The exact amount varies with which specific pair of treatment conditions is being considered.) A precision gain of this magnitude would require sample sizes 10 to 25 percent larger. We conclude that the precision gains from this optimal combination are moderate, but meaningful.

Under the assumption that true impacts are equal across the states, there are useful gains in precision. When there is evidence of cross-site heterogeneity in impacts, we discuss the state-specific estimates. When impacts are not equal, this is a weighted average without a natural interpretation. See Heckman & Smith (2000) for a broader discussion of weighting issues in random assignment studies.

B.3 Regressors

Following standard practice, the analysis uses regression adjustment to increase the precision of the impact estimates. Exhibit B-2 presents a list of the individual-level covariates (measured before randomization and therefore unaffected by randomization status) included in the estimation model. Exhibit B-3 below lists planned state- and office-level covariates. Covariates were selected to describe variation within the analytic sample that may be related to the impact outcomes. The columns “State Data” and “NDNH Data” indicate whether the regressors will be used in the models employing the state-provided or National Directory of New Hires (NDNH)–provided outcomes, respectively.

All individual-level covariates (i.e., those listed in Exhibit B-2) are measured at or prior to randomization. (and are therefore unaffected by randomization). In contrast, unless otherwise noted, all state- and office-level covariates (i.e., those listed in Exhibit B-3) are measured as of the quarter of randomization. Unless otherwise noted, all models—whether the outcome is estimated using state administrative data or NDNH data-- include the subgroup indicators listed in the next section, Exhibit B-4.

Exhibit B-2 Individual-Level Covariates by Source of Data for Outcome

Variable Name	Source		Description
	State Data	NDNH Data	
arm	✓	✓	Treatment condition indicator (three separate variables with *Control* as excluded category)
SGBwb	✓	✓	Indicator if claimant’s weekly benefit amount is greater than or equal to the median weekly benefit amount.
max_benefit	✓	✓	Maximum benefit amount for benefit year
max_wks	✓	✓	Number of weeks eligible for benefit year
age_28	✓	✓	Claimant’s age indicator for 19-28 years of age (less than 18 years as excluded category)
age_38	✓	✓	Claimant’s age indicator for 29-38 years of age (less than 18 years as excluded category)
age_48	✓	✓	Claimant’s age indicator for 39-48 years of age (less than 18 years as excluded category)
age_58	✓	✓	Claimant’s age indicator for 49-58 years of age (less than 18 years as excluded category)
age_59	✓	✓	Claimant’s age indicator for 59 years of age or older (less than 18 years as excluded category)
SGBag	✓	✓	Indicator if claimant’s age at initial claim is at or above the median age for the analytic sample in the claimant’s state
citizen	✓	✓	Claimant’s citizenship status at the time of the initial claim (citizen as excluded category)
disabled	✓	✓	Claimant’s disability status at the time of the initial claim (not disabled is excluded category)
Education_1	✓	✓	Indicator of claimant’s highest degree or level of school completed as some high school (completed high school as excluded category) [a]
Education_3	✓	✓	Indicator of claimant’s highest degree or level of school completed as some college (completed high school as excluded category)

Variable Name	Source		Description
Education_4	✓	✓	Indicator of claimant's highest degree or level of school completed as college (BA/BS) degree (completed high school as excluded category)
Education_5	✓	✓	Indicator of claimant's highest degree or level of school completed as advanced degree (completed high school as excluded category)
SGBco	✓	✓	Indicator if claimant's highest degree or level of school completed is at least some college
Gender/SGBfe	✓	✓	Claimant's gender (male as excluded category)
occupation	✓	✓	Claimant's occupation at the time of the initial claim (based on the Standard Occupational Classification system)—23 dummy variables (Office and Administrative Support Occupations as excluded category)
race_black/SGBbl	✓	✓	Claimant's race indicator for Black, non-Hispanic (White, non-Hispanic as excluded category)
race_hispanic/SGBhi	✓	✓	Claimant's race indicator for Hispanic (White, non-Hispanic as excluded category)
race_other	✓	✓	Claimant's race indicator for Other, non-Hispanic (White, non-Hispanic as excluded category)
race_unknown	✓	✓	Claimant's race indicator for Unknown/Missing (White, non-Hispanic as excluded category)
veteran	✓	✓	Claimant's veteran status at the time of the initial claim (non-veteran as excluded category)
Ra_2nd_half	✓	✓	Indicator if randomized late in the active benefit year (i.e., after eligible benefit week 13)
Total_earnq_Q		✓	Dollars earned in the Qth quarter before the benefit year begin date (for Q=1 through 8)
Total_earnq_Qflag		✓	Indicator if positive earnings in the Qth quarter before the benefit year begin date (for Q=1 through 8)
Total_UIq_Q		✓	UI dollars paid in the Qth quarter before the benefit year begin date (for Q=1 through 8)
Total_UIq_Qflag		✓	Indicator if UI dollars paid in the Qth quarter before the benefit year begin date (for Q=1 through 8)
Dataprobq_Q		✓	Indicator if NDNH data was unavailable in Qth quarter before the benefit year begin date (for Q=1 through 8)
SGBpr	✓	✓	Indicator if profile score is above the median profile score for the analytic sample
SGBp1[b]		✓	Indicator if predicted probability of exhaustion is at or above the median predicted value
SGBp2[b]		✓	Indicator if predicted number of UI weeks claimed is at or above the median predicted value
SGBp3[b]		✓	Indicator if predicted dollars of UI is at or above the median predicted value
SGBr1[c]		✓	Indicator if received any UI in Q1-Q4 prior to the quarter of the benefit begin date
SGBr2[c]		✓	Indicator if received any UI in Q5-Q8 prior to the quarter of the benefit begin date
SGBr3[c]		✓	Number of quarters with earnings in Q1-Q4 prior to the quarter of the benefit begin date

Variable Name	Source		Description
SGBr4[c]		✓	Number of quarters with earnings in Q5-Q8 prior to the quarter of the benefit begin date
SGBr5[c]		✓	Dollars earned in Q1-Q4 prior to the quarter of the benefit begin date
SGBr6[c]		✓	Dollars earned in Q5-Q8 prior to the quarter of the benefit begin date

[a] Education level is only available in Washington and Wisconsin.
[b] Removed for NDNH subgroup models (see Exhibit 6-4 and Exhibit 7-12)
c Added for NDNH subgroup models (see Exhibit 6-4 and Exhibit 7-12)

Exhibit B-3 lists economic covariates. We merge these economic covariates to the analysis file by state or by office number and by the timing of randomization. State economic data are drawn from the U.S. Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics. Most of the state data are reported weekly; the state unemployment rate is reported monthly. We merge to the week or month of randomization, respectively. Each local employment office is geocoded in ArcGIS to a U.S. county. We use county economic data, again from the BLS Local Area Unemployment Statistics program. The county data are reported monthly. We convert the monthly data to quarterly data for county employment and unemployment rate by taking a simple average, and link the data by office number and quarter of randomization. The county unemployment growth rate and employment growth rate are reported monthly. We merge by office name and the month of randomization for these two variables.

Exhibit B-3 State- and Office-Level Covariates by Source of Outcome Data

Variable Name	Source		Description
	State Data	NDNH Data	
Urban	✓	✓	Indicator if the local employment office is located in a Census **Urbanized** Area[a]
SGBcu	✓	✓	Indicator if the office is associated with a **county unemployment rate** higher than or equal to the median county unemployment rate in the same state during the **quarter before** the benefit begin date.[b]
SGBgu	✓	✓	Indicator if the office is associated with a **county unemployment growth rate** higher than or equal to the median county unemployment growth rate in the same state during the **year before** the benefit begin date.[b]
SGBge	✓	✓	Indicator if the office is associated with a **county employment growth rate** higher than or equal to the median county employment growth rate in the same state during the **year before** the benefit begin date.[b]
SGBui	✓	✓	Indicator if the office is associated with a **county unemployment rate** higher than or equal to the median county unemployment rate in the same state during the **year before** the benefit begin date.[b]
SGBei	✓	✓	Indicator if the office is associated with a **county employment rate** higher than or equal to the median county employment rate in the same state during the **year before** the benefit begin date.[b]
SGBsu	✓	✓	Indicator if the claimant's benefit year began during a month with a **state unemployment rate** higher than or equal to the median state unemployment rate over the course of the study.[b]
SGBsi	✓	✓	Indicator if the claimant's benefit year began during a month with **state initial claims** higher than or equal to the median number of state initial claims over the course of the study.[b]

Variable Name	Source		Description
SGBse	✓	✓	Indicator if the claimant's benefit year began during a month with **state covered employment** higher than or equal to the median state covered employment over the course of the study. [b]
SGBsn	✓	✓	Indicator if the claimant's benefit year began during a month with **state insured unemployment rate** higher than or equal to the median state insured unemployment rate over the course of the study, [b]
SGBsc	✓	✓	Indicator if the claimant's benefit year began during a month with **state continuing claims** higher than or equal to the median number of state continuing claims over the course of the study [b]

[a] We geocode each office address to a Census shapefile of Urbanized Areas. A Census Urbanized Area (UZA) has a population of 50,000 residents or more.

[b] *Source.* BLS Local Area Unemployment Statistics, https://www.bls.gov/lau/

B.4 Subgroups

The analysis explores differential impact by subgroup. In most cases, the considered subgroups are binary. For continuous variables, the subgroups are defined by dividing at or near the median. Exhibit B-4 lists the subgroups. The exhibit notes the small number of cases where the divide is not at the median.

Exhibit B-4 Binary Subgroups

Variable Name	Description
SGBfe	Female
SGBbl	Black
SGBhi	Hispanic
SGBag	Age (split at the median for state analyses, near the median for NDNH analyses because of required data coarsening)
SGBco	(At least) Some college
SGBwb	Weekly benefit amount
SGBpr	Official state Profile Score
SGBcu	County unemployment rate, month of benefit begin date
SGBgu	County unemployment growth rate, year previous to benefit begin date
SGBge	County employment growth rate, year previous to benefit begin date
SGBui	County unemployment rate, year previous to benefit begin date
SGBei	County employment rate, year previous to benefit begin date
SGBsu	State unemployment rate, month of benefit begin date
SGBsi	State initial claims, month of benefit begin date
SGBse	State covered employment, month of benefit begin date
SGBsn	State insured unemployment, month of benefit begin date
SGBsc	State continued claims, month of benefit begin date
SGBp1[b]	Predicted probability of exhaustion is at or above the median predicted value
SGBp2[b]	Predicted number of UI weeks claimed is at or above the median predicted value
SGBp3[b]	Predicted dollars of UI is at or above the median predicted value
SGBr1[c]	Received any UI in Q1-Q4 prior to the quarter of the benefit begin date
SGBr2[c]	Received any UI in Q5-Q8 prior to the quarter of the benefit begin date
SGBr3[c]	Number of quarters with earnings in Q1-Q4 prior to the quarter of the benefit begin date
SGBr4[c]	Number of quarters with earnings in Q5-Q8 prior to the quarter of the benefit begin date

Variable Name	Description
SGBr5[c]	Dollars earned in Q1-Q4 prior to the quarter of the benefit begin date
SGBr6[c]	Dollars earned in Q5-Q8 prior to the quarter of the benefit begin date

B.5 Sample Statistics for Covariates and Outcomes

Exhibit B-5 lists sample statistics (*N*, mean, standard deviation) for the covariates and subgroups discussed in Section B.3 and Section B.4. Sample statistics for outcomes are listed in Exhibit B-6.

Exhibit B-5 Sample Statistics for Covariates

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
max_benefit	50,007	6,836.60	4,790.00	161,146	7,961.26	2,954.32	43,318	9,679.06	4,672.07	24,170	7,158.15	2,801.22
max_wks	50,007	25.97	0.77	161,146	25.99	0.41	43,318	23.31	3.02	24,170	23.66	4.81
age_28	50,007	0.15	0.62	161,146	0.26	0.44	43,318	0.16	0.37	24,170	0.19	0.39
age_38	50,007	0.26	0.76	161,146	0.26	0.44	43,318	0.24	0.43	24,170	0.25	0.43
age_48	50,007	0.25	0.75	161,146	0.20	0.40	43,318	0.23	0.42	24,170	0.22	0.41
age_58	50,007	0.24	0.74	161,146	0.18	0.39	43,318	0.24	0.43	24,170	0.23	0.42
age_59	50,007	0.11	0.54	161,146	0.09	0.29	43,318	0.13	0.34	24,170	0.12	0.32
citizen_no	50,007	0.01	0.18	161,146	0.06	0.25	43,318	0.09	0.29	24,170	0.02	0.14
citizen_missing	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.00	0.00	24,170	0.00	0.00
disabled_yes	50,007	0.02	0.23	161,146	0.03	0.17	43,318	0.02	0.14	24,170	0.03	0.18
disabled_missing	50,007	0.00	0.00	161,146	0.12	0.32	43,318	0.00	0.00	24,170	0.03	0.17
education_1	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.16	0.37	24,170	0.08	0.27
education_3	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.25	0.44	24,170	0.26	0.44
education_4	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.17	0.38	24,170	0.20	0.40
education_5	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.06	0.23	24,170	0.05	0.22
education_missing	50,007	1.00	0.00	161,146	1.00	0.00	43,318	0.00	0.00	24,170	0.00	0.00
gender_missing	50,007	0.00	0.05	161,146	0.00	0.04	43,318	0.00	0.00	24,170	0.00	0.00
occupation1	50,007	0.12	0.56	161,146	0.12	0.33	43,318	0.11	0.32	24,170	0.11	0.31
occupation2	50,007	0.04	0.34	161,146	0.03	0.18	43,318	0.04	0.19	24,170	0.05	0.22
occupation3	50,007	0.02	0.22	161,146	0.02	0.14	43,318	0.05	0.22	24,170	0.04	0.19
occupation4	50,007	0.02	0.26	161,146	0.01	0.11	43,318	0.02	0.15	24,170	0.02	0.14
occupation5	50,007	0.01	0.14	161,146	0.01	0.08	43,318	0.01	0.11	24,170	0.01	0.10
occupation6	50,007	0.01	0.17	161,146	0.01	0.11	43,318	0.01	0.08	24,170	0.01	0.11
occupation7	50,007	0.01	0.12	161,146	0.01	0.10	43,318	0.01	0.08	24,170	0.01	0.08
occupation8	50,007	0.02	0.22	161,146	0.03	0.16	43,318	0.02	0.12	24,170	0.02	0.13
occupation9	50,007	0.02	0.21	161,146	0.04	0.19	43,318	0.02	0.16	24,170	0.02	0.14
occupation10	50,007	0.04	0.32	161,146	0.02	0.14	43,318	0.01	0.11	24,170	0.03	0.16
occupation11	50,007	0.04	0.33	161,146	0.03	0.16	43,318	0.01	0.11	24,170	0.03	0.17
occupation12	50,007	0.01	0.17	161,146	0.02	0.13	43,318	0.01	0.10	24,170	0.01	0.09

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
occupation13	50,007	0.02	0.26	161,146	0.08	0.27	43,318	0.04	0.20	24,170	0.05	0.21
occupation14	50,007	0.02	0.23	161,146	0.03	0.18	43,318	0.03	0.18	24,170	0.03	0.18
occupation15	50,007	0.01	0.15	161,146	0.02	0.15	43,318	0.03	0.16	24,170	0.02	0.16
occupation16	50,007	0.05	0.39	161,146	0.09	0.29	43,318	0.05	0.22	24,170	0.09	0.29
occupation18	50,007	0.00	0.09	161,146	0.00	0.05	43,318	0.08	0.27	24,170	0.00	0.07
occupation19	50,007	0.08	0.46	161,146	0.05	0.21	43,318	0.11	0.31	24,170	0.04	0.18
occupation20	50,007	0.06	0.42	161,146	0.04	0.19	43,318	0.04	0.19	24,170	0.03	0.17
occupation21	50,007	0.16	0.64	161,146	0.08	0.27	43,318	0.11	0.31	24,170	0.17	0.38
occupation22	50,007	0.11	0.55	161,146	0.06	0.24	43,318	0.08	0.28	24,170	0.05	0.23
occupation23	50,007	0.00	0.07	161,146	0.00	0.03	43,318	0.01	0.10	24,170	0.00	0.06
occupation_missing	50,007	0.00	0.05	161,146	0.00	0.00	43,318	0.00	0.00	24,170	0.00	0.02
race_other	50,007	0.02	0.27	161,146	0.18	0.39	43,318	0.09	0.28	24,170	0.03	0.17
race_unknown	50,007	0.01	0.15	161,146	0.00	0.00	43,318	0.04	0.21	24,170	0.02	0.14
race_missing	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.00	0.00	24,170	0.00	0.00
veteran_yes	50,007	0.08	0.47	161,146	0.04	0.19	43,318	0.09	0.29	24,170	0.06	0.24
veteran_missing	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.00	0.00	24,170	0.00	0.00
ra_2nd_half	50,007	0.13	0.58	161,146	0.01	0.10	43,318	0.00	0.00	24,170	0.07	0.25
total_earnq_1	50,007	$7,766.42	$12,759.03	161,146	$10,293.25	$15,844.34	43,318	$11,373.54	$16,826.56	24,170	$9,663.31	$12,045.95
total_earnq_1flag	50,007	0.84	0.63	161,146	0.94	0.24	43,318	0.94	0.24	24,170	0.97	0.18
total_uiq_1	50,007	$35.19	$485.41	161,146	$67.87	$415.84	43,318	$205.53	$807.14	24,170	$39.78	$314.41
total_uiq_1flag	50,007	0.03	0.29	161,146	0.05	0.22	43,318	0.12	0.32	24,170	0.03	0.17
total_earnq_2	50,007	$8,071.80	$12,477.41	161,146	$10,108.82	$19,364.99	43,318	$11,054.92	$13,990.87	24,170	$9,059.92	$9,188.65
total_earnq_2flag	50,007	0.86	0.60	161,146	0.94	0.23	43,318	0.94	0.24	24,170	0.96	0.19
total_uiq_2	50,007	$35.05	$486.40	161,146	$72.85	$418.20	43,318	$215.49	$838.10	24,170	$65.25	$95.29
total_uiq_2flag	50,007	0.03	0.29	161,146	0.06	0.24	43,318	0.13	0.33	24,170	0.05	0.22
total_earnq_3	50,007	$7,780.80	$12,069.03	161,146	$9,227.76	$15,254.17	43,318	$9,600.83	$13,656.96	24,170	$8,340.52	$8,948.41
total_earnq_3flag	50,007	0.86	0.60	161,146	0.90	0.30	43,318	0.88	0.33	24,170	0.91	0.29
total_uiq_3	50,007	$64.94	$688.36	161,146	$171.42	$695.03	43,318	$513.23	$1,294.68	24,170	$219.20	$807.98
total_uiq_3flag	50,007	0.05	0.36	161,146	0.10	0.30	43,318	0.23	0.42	24,170	0.10	0.30
total_earnq_4	50,007	$7,234.67	$12,327.46	161,146	$8,692.01	$17,080.07	43,318	$9,171.80	$14,725.13	24,170	$8,125.14	$9,572.16

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
total_earnq_4flag	50,007	0.84	0.64	161,146	0.87	0.34	43,318	0.86	0.34	24,170	0.89	0.31
total_uiq_4	50,007	$72.69	$704.19	161,146	$234.01	$782.24	43,318	$562.65	$1,263.01	24,170	$246.80	$815.16
total_uiq_4flag	50,007	0.05	0.40	161,146	0.13	0.34	43,318	0.28	0.45	24,170	0.13	0.34
total_earnq_5	50,007	$6,241.54	$12,110.67	161,146	$8,766.62	$22,458.86	43,318	$9,820.81	$13,246.11	24,170	$8,093.08	$8,986.26
total_earnq_5flag	50,007	0.72	0.78	161,146	0.85	0.36	43,318	0.86	0.35	24,170	0.88	0.33
total_uiq_5	50,007	$54.59	$637.44	161,146	$151.55	$655.13	43,318	$260.45	$909.58	24,170	$154.86	$653.15
total_uiq_5flag	50,007	0.04	0.34	161,146	0.09	0.29	43,318	0.15	0.36	24,170	0.09	0.28
total_earnq_6	50,007	$5,493.19	$12,770.64	161,146	$8,286.14	$14,564.23	43,318	$9,163.64	$12,590.17	24,170	$7,654.41	$8,730.79
total_earnq_6flag	50,007	0.62	0.85	161,146	0.82	0.38	43,318	0.83	0.37	24,170	0.84	0.37
total_uiq_6	50,007	$64.28	$691.80	161,146	$156.40	$668.73	43,318	$292.25	$1,040.25	24,170	$160.92	$679.26
total_uiq_6flag	50,007	0.04	0.36	161,146	0.09	0.29	43,318	0.15	0.36	24,170	0.09	0.29
total_earnq_7	50,007	$5,151.67	$13,859.93	161,146	$7,744.40	$15,158.66	43,318	$8,141.98	$11,271.49	24,170	$6,678.26	$8,819.91
total_earnq_7flag	50,007	0.60	0.85	161,146	0.78	0.42	43,318	0.78	0.41	24,170	0.73	0.44
total_uiq_7	50,007	$108.82	$979.83	161,146	$79.76	$523.17	43,318	$487.60	$1,252.69	24,170	$234.41	$829.77
total_uiq_7flag	50,007	0.06	0.41	161,146	0.04	0.20	43,318	0.23	0.42	24,170	0.11	0.32
total_earnq_8	50,007	$2,323.56	$9,756.94	161,146	$3,820.37	$14,299.26	43,318	$5,463.79	$12,435.18	24,170	$5,082.73	$8,938.00
total_earnq_8flag	50,007	0.29	0.79	161,146	0.38	0.49	43,318	0.51	0.50	24,170	0.56	0.50
total_uiq_8	50,007	$71.65	$814.97	161,146	$7.61	$197.17	43,318	$318.99	$1,055.42	24,170	$96.00	$556.53
total_uiq_8flag	50,007	0.04	0.33	161,146	0.00	0.05	43,318	0.13	0.34	24,170	0.04	0.20
dataprobq_1	50,007	0.00	0.02	161,146	0.00	0.03	43,318	0.00	0.05	24,170	0.00	0.02
dataprobq_2	50,007	0.00	0.10	161,146	0.00	0.00	43,318	0.00	0.02	24,170	0.00	0.02
dataprobq_3	50,007	0.01	0.15	161,146	0.00	0.00	43,318	0.00	0.02	24,170	0.00	0.03
dataprobq_4	50,007	0.02	0.25	161,146	0.00	0.01	43,318	0.00	0.02	24,170	0.00	0.04
dataprobq_5	50,007	0.15	0.63	161,146	0.00	0.02	43,318	0.00	0.02	24,170	0.03	0.16
dataprobq_6	50,007	0.28	0.78	161,146	0.00	0.04	43,318	0.00	0.02	24,170	0.04	0.20
dataprobq_7	50,007	0.30	0.80	161,146	0.02	0.13	43,318	0.00	0.02	24,170	0.13	0.33
dataprobq_8	50,007	0.63	0.84	161,146	0.35	0.48	43,318	0.13	0.33	24,170	0.43	0.50
urban	50,007	0.19	0.68	161,146	0.16	0.37	43,318	0.13	0.34	24,170	0.00	0.00
SGBfe	50,007	0.44	0.86	161,146	0.46	0.50	43,318	0.38	0.49	24,170	0.47	0.50
SGBbl	50,007	0.18	0.66	161,146	0.15	0.36	43,318	0.06	0.24	24,170	0.22	0.41

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
SGBhi	50,007	0.05	0.36	161,146	0.16	0.37	43,318	0.19	0.39	24,170	0.07	0.26
SGBag	50,007	0.85	0.62	161,146	0.74	0.44	43,318	0.83	0.37	24,170	0.81	0.39
SGBco	50,007	0.00	0.00	161,146	0.00	0.00	43,318	0.48	0.50	24,170	0.52	0.50
SGBwb	50,007	0.50	0.87	161,146	0.50	0.50	43,318	0.50	0.50	24,170	0.50	0.50
SGBpr	50,007	0.53	0.87	161,146	0.53	0.50	43,318	0.53	0.50	24,170	1.00	0.00
SGBcu	50,007	0.50	0.87	161,146	0.52	0.50	43,318	0.51	0.50	24,170	0.51	0.50
SGBgu	50,007	0.51	0.87	161,146	0.51	0.50	43,318	0.50	0.50	24,170	0.53	0.50
SGBge	50,007	0.53	0.87	161,146	0.55	0.50	43,318	0.59	0.49	24,170	0.50	0.50
SGBui	50,007	0.53	0.87	161,146	0.50	0.50	43,318	0.50	0.50	24,170	0.52	0.50
SGBei	50,007	0.50	0.87	161,146	0.51	0.50	43,318	0.50	0.50	24,170	0.51	0.50
SGBsu	50,007	0.78	0.72	161,146	0.55	0.50	43,318	0.67	0.47	24,170	0.97	0.17
SGBsi	50,007	0.51	0.87	161,146	0.51	0.50	43,318	0.51	0.50	24,170	0.50	0.50
SGBse	50,007	0.58	0.86	161,146	0.55	0.50	43,318	0.63	0.48	24,170	0.52	0.50
SGBsn	50,007	0.54	0.87	161,146	0.53	0.50	43,318	0.53	0.50	24,170	0.51	0.50
SGBsc	50,007	0.51	0.87	161,146	0.51	0.50	43,318	0.52	0.50	24,170	0.51	0.50
SGBp1	50,007	0.42	0.86	161,146	0.33	0.47	43,318	0.27	0.45	24,170	0.45	0.50
SGBp2	50,007	0.42	0.86	161,146	0.33	0.47	43,318	0.27	0.45	24,170	0.45	0.50
SGBp3	50,007	0.42	0.86	161,146	0.33	0.47	43,318	0.27	0.45	24,170	0.45	0.50

Exhibit B-6 Sample Statistics for Outcomes

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
UI Benefits Paid (in Weeks), using State Administrative Data (UWSW28)												
Total 28-week follow-up period	50,007	13.74	16.44	161,146	14.44	9.41	43,318	13.56	8.60	24,170	13.40	8.83
UI Benefits Paid (in Dollars), using State Administrative Data (UDSW28)												
Total 28-week follow-up period	50,007	$3,641.82	$5,259.86	161,146	$4,456.04	$3,510.66	43,318	$5,527.80	$4,815.05	24,170	$4,001.87	$3,026.60
UI Benefits Paid (in Dollars) by Quarter, using data from the NDNH (UDNQ00-UDNQ12)												
Quarter of Initial Claim	49,990	$774.13	$1,683.72	160,585	$1,047.94	$1,169.48	43,096	$1,856.23	$1,783.21	24,124	$1,108.35	$1,150.09
Q1 After Initial Claim	49,984	$1,730.44	$2,811.53	160,421	$2,038.11	$1,829.89	43,069	$2,706.57	$2,677.39	24,113	$2,030.06	$1,798.59
Q2 After Initial Claim	49,983	$970.39	$2,343.88	160,414	$1,091.81	$1,478.23	43,069	$1,195.78	$1,987.65	24,109	$909.99	$1,370.42
Q3 After Initial Claim	49,983	$242.47	$1,244.66	160,418	$257.56	$765.46	43,071	$375.28	$1,120.84	24,108	$245.19	$760.47
Q4 After Initial Claim	49,983	$121.65	$831.52	160,419	$227.21	$750.79	43,071	$457.63	$1,188.04	24,109	$247.78	$791.17
Q5 After Initial Claim	49,983	$116.37	$952.17	160,422	$261.81	$908.50	43,072	$556.86	$1,445.27	24,109	$291.54	$946.68
Q6 After Initial Claim	49,983	$96.92	$843.96	160,422	$212.55	$801.06	43,072	$330.17	$1,162.93	24,109	$161.78	$656.93
Q7 After Initial Claim	49,983	$72.80	$728.47	160,422	$180.66	$732.01	43,072	$287.34	$1,082.12	24,109	$117.86	$564.62
Q8 After Initial Claim	49,983	$76.98	$764.13	160,422	$220.62	$799.50	43,072	$411.47	$1,234.55	24,109	$153.62	$646.21
Q9 After Initial Claim	49,983	$76.27	$790.19	157,149	$219.82	$822.89	42,145	$438.67	$1,323.90	24,108	$184.43	$753.69
Q10 After Initial Claim	43,573	$69.54	$751.37	115,855	$177.03	$731.49	30,265	$297.65	$1,123.97	19,303	$114.65	$553.47
Q11 After Initial Claim	32,792	$76.63	$812.74	75,208	$158.34	$698.34	16,404	$241.83	$1,026.62	12,102	$105.71	$556.46
Q12 After Initial Claim	21,167	$89.17	$880.12	36,844	$160.97	$702.12	8,191	$263.52	$1,012.25	7,353	$113.55	$582.19
UI Benefits Paid (Binary) by Quarter, using data from the NDNH (UBNQ00-UBNQ12)												
Quarter of Initial Claim	49,990	0.59	0.86	160,585	0.70	0.46	43,096	0.87	0.34	24,124	0.72	0.45
Q1 After Initial Claim	49,984	0.76	0.74	160,421	0.77	0.42	43,069	0.79	0.41	24,113	0.77	0.42
Q2 After Initial Claim	49,983	0.51	0.87	160,414	0.52	0.50	43,069	0.45	0.50	24,109	0.46	0.50
Q3 After Initial Claim	49,983	0.19	0.68	160,418	0.19	0.39	43,071	0.20	0.40	24,108	0.16	0.37

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Q4 After Initial Claim	49,983	0.10	0.52	160,419	0.14	0.35	43,071	0.23	0.42	24,109	0.14	0.35
Q5 After Initial Claim	49,983	0.07	0.45	160,422	0.12	0.33	43,072	0.21	0.41	24,109	0.13	0.33
Q6 After Initial Claim	49,983	0.06	0.43	160,422	0.11	0.32	43,072	0.14	0.35	24,109	0.10	0.30
Q7 After Initial Claim	49,983	0.05	0.38	160,422	0.10	0.30	43,072	0.13	0.33	24,109	0.07	0.26
Q8 After Initial Claim	49,983	0.05	0.39	160,422	0.12	0.32	43,072	0.18	0.38	24,109	0.09	0.28
Q9 After Initial Claim	49,983	0.05	0.36	157,149	0.11	0.31	42,145	0.16	0.37	24,108	0.09	0.28
Q10 After Initial Claim	43,573	0.04	0.35	115,855	0.10	0.30	30,265	0.13	0.33	19,303	0.07	0.26
Q11 After Initial Claim	32,792	0.04	0.35	75,208	0.09	0.29	16,404	0.10	0.30	12,102	0.06	0.24
Q12 After Initial Claim	21,167	0.05	0.37	36,844	0.09	0.29	8,191	0.12	0.33	7,353	0.06	0.24
UI Benefits Paid (in Dollars) by Year, using data from the NDNH (UDNY01-UDNY03)												
Year 1 After Initial Claim	49,982	$3,064.94	$4,919.60	160,402	$3,615.07	$3,217.86	43,067	$4,735.31	$4,647.62	24,108	$3,433.48	$2,989.26
Year 2 After Initial Claim	49,983	$363.07	$2,307.16	160,422	$875.65	$2,243.05	43,072	$1,585.83	$3,364.85	24,109	$724.79	$1,904.88
Year 3 After Initial Claim	21,167	$317.79	$2,264.81	36,844	$672.25	$1,976.23	8,191	$1,180.44	$3,125.07	7,353	$433.21	$1,521.50
UI Benefits Paid (in Quarters) by Year, using data from the NDNH (UQNY01-UQNY03)												
Year 1 After Initial Claim	49,982	1.55	1.71	160,402	1.62	1.05	43,067	1.67	1.06	24,108	1.53	0.96
Year 2 After Initial Claim	49,983	0.24	1.20	160,422	0.45	0.97	43,072	0.65	1.10	24,109	0.38	0.85
Year 3 After Initial Claim	21,167	0.19	1.06	36,844	0.36	0.89	8,191	0.48	1.00	7,353	0.24	0.69
Earnings (in Dollars) by Quarter, using data from the NDNH (EDNQ00-EDNQ12)												
Quarter of Initial Claim	50,002	$5,124.82	$12,305.14	160,884	$6,434.28	$17,301.72	43,204	$8,987.17	$27,192.69	24,151	$7,145.54	$14,433.67
Q1 After Initial Claim	49,991	$3,218.06	$9,335.46	160,444	$4,050.70	$10,531.87	43,075	$5,268.65	$10,511.98	24,116	$3,838.91	$9,278.85
Q2 After Initial Claim	49,985	$4,610.14	$11,724.67	160,427	$5,748.41	$11,839.70	43,074	$7,495.72	$21,143.85	24,112	$5,506.29	$7,079.15
Q3 After Initial Claim	49,983	$5,425.98	$11,570.70	160,422	$6,685.43	$11,918.34	43,072	$8,250.13	$9,242.06	24,111	$6,308.95	$8,132.08
Q4 After Initial Claim	49,983	$5,935.55	$11,965.71	160,422	$6,876.24	$11,856.65	43,072	$7,896.09	$9,318.98	24,110	$6,290.86	$7,889.53
Q5 After Initial Claim	49,983	$6,458.26	$12,434.26	160,422	$7,229.96	$12,131.71	43,072	$8,189.45	$12,826.73	24,109	$6,485.68	$7,305.98
Q6 After Initial Claim	49,983	$6,725.19	$12,476.71	160,422	$7,658.48	$10,741.60	43,072	$9,032.31	$10,367.32	24,109	$6,873.10	$7,218.97

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Q7 After Initial Claim	49,983	$6,916.85	$12,909.59	160,422	$7,980.50	$12,439.67	43,072	$9,290.59	$10,088.25	24,109	$7,072.48	$7,721.52
Q8 After Initial Claim	49,983	$6,986.61	$13,201.47	160,422	$7,866.61	$12,145.87	43,072	$8,896.01	$10,844.79	24,109	$7,038.34	$8,938.16
Q9 After Initial Claim	49,983	$7,179.25	$13,766.77	157,149	$8,022.69	$12,992.17	42,145	$8,906.18	$10,992.64	24,108	$7,068.94	$7,969.63
Q10 After Initial Claim	43,573	$7,270.91	$14,336.18	115,855	$8,183.94	$11,535.11	30,265	$9,406.52	$11,126.67	19,303	$7,146.82	$7,670.23
Q11 After Initial Claim	32,792	$7,189.05	$13,779.69	75,208	$8,254.57	$14,644.78	16,404	$9,853.94	$12,568.75	12,102	$6,963.93	$7,491.65
Q12 After Initial Claim	21,167	$7,264.12	$14,526.96	36,844	$7,926.78	$14,450.09	8,191	$9,706.68	$11,688.12	7,353	$6,745.80	$7,655.07
Employment (Binary) by Quarter, using data from the NDNH (EBNQ00-EBNQ12)												
Quarter of Initial Claim	50,002	0.81	0.69	160,884	0.87	0.34	43,204	0.87	0.33	24,151	0.92	0.27
Q1 After Initial Claim	49,991	0.58	0.86	160,444	0.58	0.49	43,075	0.68	0.47	24,116	0.62	0.48
Q2 After Initial Claim	49,985	0.65	0.83	160,427	0.66	0.47	43,074	0.76	0.43	24,112	0.74	0.44
Q3 After Initial Claim	49,983	0.72	0.78	160,422	0.72	0.45	43,072	0.79	0.41	24,111	0.78	0.41
Q4 After Initial Claim	49,983	0.75	0.76	160,422	0.73	0.44	43,072	0.77	0.42	24,110	0.78	0.42
Q5 After Initial Claim	49,983	0.76	0.74	160,422	0.73	0.44	43,072	0.76	0.43	24,109	0.77	0.42
Q6 After Initial Claim	49,983	0.77	0.73	160,422	0.75	0.43	43,072	0.78	0.41	24,109	0.78	0.41
Q7 After Initial Claim	49,983	0.77	0.74	160,422	0.75	0.43	43,072	0.78	0.42	24,109	0.79	0.41
Q8 After Initial Claim	49,983	0.76	0.74	160,422	0.74	0.44	43,072	0.76	0.43	24,109	0.78	0.42
Q9 After Initial Claim	49,983	0.76	0.74	157,149	0.74	0.44	42,145	0.75	0.44	24,108	0.77	0.42
Q10 After Initial Claim	43,573	0.75	0.75	115,855	0.75	0.44	30,265	0.77	0.42	19,303	0.77	0.42
Q11 After Initial Claim	32,792	0.74	0.76	75,208	0.74	0.44	16,404	0.74	0.44	12,102	0.77	0.42
Q12 After Initial Claim	21,167	0.74	0.77	36,844	0.74	0.44	8,191	0.75	0.44	7,353	0.76	0.43
Earnings (in Dollars) by Year, using data from the NDNH (EDNY01-EDNY03)												
Year 1 After Initial Claim	49,983	$19,190.28	$36,347.43	160,422	$23,361.49	$34,847.99	43,072	$28,911.31	$37,953.80	24,110	$21,946.70	$26,514.03
Year 2 After Initial Claim	49,983	$27,086.90	$45,700.48	160,422	$30,735.56	$40,162.92	43,072	$35,408.35	$38,318.26	24,109	$27,469.60	$28,097.51
Year 3 After Initial Claim	21,167	$29,316.01	$51,032.84	36,844	$31,080.33	$49,493.77	8,191	$37,973.27	$42,025.15	7,353	$26,614.46	$27,339.64

	Indiana			New York			Washington			Wisconsin		
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev
Employment (in Quarters) by Year, using data from the NDNH (EQNY01-EQNY03)												
Year 1 After Initial Claim	49,983	2.69	2.50	160,422	2.70	1.47	43,072	3.00	1.36	24,110	2.92	1.38
Year 2 After Initial Claim	49,983	3.06	2.62	160,422	2.97	1.50	43,072	3.09	1.45	24,109	3.12	1.45
Year 3 After Initial Claim	21,167	3.00	2.72	36,844	2.96	1.56	8,191	2.99	1.56	7,353	3.06	1.51
Time to Reemployment (in Days), using data from the NDNH (DHNW99)												
Through 28 Weeks After Initial Claim	50,007	19.81	16.59	161,146	22.83	8.45	43,318	22.17	8.67	24,170	18.81	9.45
Job tenure (Number of Quarters with the Same Employer), using data from the NDNH (JBNQ08)												
Through 8 Quarters After Initial Claim	49,998	4.47	4.23	160,425	4.63	2.56	43,091	5.17	2.67	24,161	4.80	2.43

Note: Variable names for each outcome are listed in parentheses after the description of the outcome (e.g. “UWSW28”).

Appendix C. Additional Results

This appendix presents selected additional results in support of statements in the body chapters of this *Final Report*. This Appendix C is organized in parallel with the main document. Section C.1 presents additional results for Chapter 6. Section C.2 presents additional results for Chapter 7.

C.1 Additional Results Relating to Chapter 6

Exhibit 6.1 presented estimates of impact on UI weeks. For cost-benefit analyses, impacts on dollars of UI benefits paid are more relevant. Exhibit C-1 presents estimates of impacts on dollars. As noted in Section 6.1, the qualitative patterns of impacts are similar, but the impacts are smaller in percentage terms: 8.2 percent vs. 9.2 percent for Pooled.

Exhibit C-1 Impact on UI Benefits Paid (in dollars), *Existing* vs. *Control*

State	Control	Existing	Difference (Impact)	SE	Heterogeneity
Pooled	$4,546	$4,199	$-347***	$15	0.134
IN	$3,841	$3,462	$-378***	$35	0.326
NY	$4,707	$4,309	$-397***	$20	<.01***
WA	$5,726	$5,464	$-262***	$52	0.088*
WI	$4,055	$3,924	$-131***	$42	<.01***

Source: Regression-adjusted impact estimates based on state administrative data, Model(s): UDSW28eczz, Run Date: 29MAR2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

As noted, in Section 6.1 our main analysis focuses on impacts through 28 weeks post-randomization. The full sample is observed through that follow-up period. Only about a third of the sample is observed through the full benefit year; that is, 52 weeks post-initial claim. This is potentially problematic. A given initial UI claim can yield benefits payments for 52 weeks. Thus, there could be differential impacts between the 28th week post-randomization (usually about week 32 post-initial claim) and the end of the claim year.

To explore sensitivity to this issue, Exhibits C-2 and C-3 present results for the sample observed for the full 52 weeks post-initial claim. Exhibit C-2 presents results through 28 weeks post-randomization. Thus, comparing results between Exhibit 6.1 and Exhibit C-2 gives the pure effect of changing the sample, holding the follow-up period fixed. For Pooled, that comparison is −1.26 versus −1.21 (both $p<.01$), with the standard error increasing from 0.05 to 0.06. Exhibit C-3 presents results through 52 weeks post-initial claim. Thus, comparing results between Exhibit C-2 and Exhibit C-3 gives the pure effect of longer follow-up period, holding the sample fixed. For Pooled, that comparison is −1.21 versus −1.16 (both $p<.01$). Thus, impacts are qualitatively similar across both pairs of exhibits. Differences in impact are also small.

Thus, the claim in Chapter 6 that considering the 28-week sample does not substantially bias our results seems reasonable. With a sample about a third the size, precision is much weaker (e.g., the evidence for heterogeneity in impacts across states is weak in the smaller 52-week sample; $p=.06$ vs. $p<.01$).

Exhibit C-2 Impact on UI Benefits Paid (in first 28 weeks), *Existing* vs. *Control*

State	Control	Existing	Difference (Impact)	Standard Error	Heterogeneity
Pooled	14.948	13.737	-1.211***	0.062	0.088*
IN	14.310	12.838	-1.472***	0.151	0.057*
NY	15.516	14.136	-1.380***	0.084	<.01***
WA	14.763	13.983	-0.780***	0.155	<.01***
WI	13.599	12.916	-0.683***	0.172	<.01***

Source: Regression-adjusted impact estimates based on state administrative data, Model(s): UWZW28eczz, Run Date: 29MAR2019
Note: Restricted to claimants with 52 weeks of follow-up data available. Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

Exhibit C-3 Impact on UI Benefits Paid (in first 52 weeks), *Existing* vs. *Control*

State	Control	Existing	Difference (Impact)	Standard Error	Heterogeneity
Pooled	16.589	15.421	-1.168***	0.066	0.101
IN	16.192	14.532	-1.660***	0.162	<.01***
NY	16.942	15.735	-1.207***	0.088	0.492
WA	16.589	15.839	-0.750***	0.180	0.012**
WI	15.469	14.701	-0.767***	0.191	0.025**

Source: Regression-adjusted impact estimates based on state administrative data, Model(s): UWZW52eczz, Run Date: 29MAR2019
Note: Restricted to claimants with 52 weeks of follow-up data available. Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

Exhibit 6-3 presented differential impacts of REA on UI benefits (in weeks) for selected subgroups. Exhibits C-4, and C-5 provide more complete results, in particular for the subgroups without statistical evidence of differential impact.

Exhibit C-4 Differential Impacts of Claimant Characteristics on UI Benefits (in weeks), *Existing* vs. *Control*

State	Impact	SE	Impact	SE	Impact	SE
Gender						
	Female		Male		Differential	
Pooled	-1.195***	0.070	-1.316***	0.062	0.137	0.094
IN	-1.503***	0.191	-1.813***	0.166	0.310	0.254
NY	-1.322***	0.090	-1.566***	0.083	0.240**	0.123
WA	-1.083***	0.186	-0.617***	0.145	-0.466**	0.236
WI	-0.397**	0.195	-0.622***	0.183	0.224	0.268
Age						
	Above Med		Below Med		Differential	
Pooled	-1.077***	0.062	-1.482***	0.069	0.379***	0.094
IN	-1.504***	0.158	-1.957***	0.206	0.453*	0.260
NY	-1.265***	0.086	-1.637***	0.087	0.377***	0.122
WA	-0.707***	0.145	-0.939***	0.186	0.232	0.236
WI	-0.306*	0.175	-0.806***	0.206	0.500*	0.271
Race						
	Black		Not Black		Differential	
Pooled	-1.166***	0.123	-1.278***	0.050	0.116	0.134
IN	-1.499***	0.310	-1.717***	0.137	0.217	0.339
NY	-1.510***	0.161	-1.442***	0.066	-0.071	0.174
WA	-0.349	0.485	-0.823***	0.118	0.474	0.499
WI	-0.121	0.281	-0.628***	0.152	0.507	0.320
Ethnicity						
	Hispanic		Not Hispanic		Differential	
Pooled	-1.146***	0.123	-1.278***	0.050	0.091	0.134
IN	-1.432**	0.600	-1.690***	0.128	0.258	0.614
NY	-1.416***	0.155	-1.460***	0.066	0.038	0.168
WA	-0.594**	0.236	-0.841***	0.130	0.247	0.269
WI	-0.612	0.501	-0.508***	0.138	-0.105	0.520
College						
	Some		None		Differential	
Pooled	-0.449***	0.126	-0.898***	0.120	0.434**	0.174
WA	-0.599***	0.170	-0.974***	0.154	0.374	0.229
WI	-0.267	0.187	-0.782***	0.190	0.516*	0.267
Weekly Benefit						
	Above Med		Below Med		Differential	
Pooled	-0.929***	0.067	-1.555***	0.064	0.619***	0.093
IN	-1.104***	0.170	-2.283***	0.185	1.179***	0.252
NY	-1.067***	0.090	-1.768***	0.083	0.695***	0.123
WA	-0.677***	0.162	-0.920***	0.161	0.243	0.229
WI	-0.443**	0.190	-0.589***	0.187	0.146	0.267
Profile Score						
	Above Med		Below Med		Differential	
Pooled	-1.376***	0.066	-1.349***	0.075	0.011	0.102
IN	-1.963***	0.182	-1.392***	0.173	-0.570**	0.251
NY	-1.423***	0.079	-1.502***	0.097	0.111	0.127
WA	-0.713***	0.162	-0.884***	0.161	0.171	0.228

Source: Regression-adjusted impact estimates based on state administrative data, Model(s): 'UWSW28ec_', Run Date: 29MAR2019

Notes: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent.

Exhibit C-5 Differential Impacts of Labor Market Characteristics on UI Benefits (in weeks), *Existing* vs. *Control*

State	Impact	SE	Impact	SE	Impact	SE
County Unemployment Rate at Time of Randomization						
	Above Median		Below Median		Differential	
Pooled	-1.190***	0.066	-1.334***	0.065	0.092	0.093
IN	-1.312***	0.178	-2.047***	0.176	0.736***	0.251
NY	-1.451***	0.089	-1.454***	0.084	-0.009	0.123
WA	-0.773***	0.154	-0.818***	0.169	0.045	0.229
WI	-0.561***	0.180	-0.463**	0.199	-0.097	0.268
County Unemployment Rate - Growth						
	Above Median		Below Median		Differential	
Pooled	-1.249***	0.063	-1.276***	0.069	0.042	0.093
IN	-1.705***	0.179	-1.650***	0.175	-0.056	0.251
NY	-1.440***	0.081	-1.469***	0.094	0.027	0.123
WA	-0.806***	0.159	-0.783***	0.164	-0.023	0.228
WI	-0.365**	0.184	-0.682***	0.193	0.317	0.267
County Employment Rate - Growth						
	Above Median		Below Median		Differential	
Pooled	-1.208***	0.064	-1.320***	0.067	0.063	0.093
IN	-1.950***	0.172	-1.374***	0.183	-0.576**	0.251
NY	-1.338***	0.087	-1.563***	0.085	0.229*	0.122
WA	-0.852***	0.149	-0.711***	0.177	-0.141	0.232
WI	-0.401**	0.176	-0.670***	0.205	0.269	0.270
County Unemployment Rate in Previous Year						
	Above Median		Below Median		Differential	
Pooled	-1.181***	0.067	-1.336***	0.064	0.109	0.093
IN	-1.395***	0.171	-2.012***	0.184	0.617**	0.251
NY	-1.447***	0.093	-1.457***	0.081	0.007	0.123
WA	-0.770***	0.155	-0.821***	0.169	0.050	0.229
WI	-0.473***	0.182	-0.569***	0.196	0.096	0.267
County Employment Rate in Previous Year						
	Above Median		Below Median		Differential	
Pooled	-1.219***	0.067	-1.299***	0.064	0.052	0.093
IN	-1.721***	0.178	-1.634***	0.177	-0.087	0.251
NY	-1.350***	0.090	-1.545***	0.083	0.193	0.123
WA	-0.934***	0.168	-0.655***	0.155	-0.279	0.228
WI	-0.521***	0.179	-0.512**	0.200	-0.009	0.268
State Unemployment Rate in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	-1.171***	0.058	-1.434***	0.078	0.108	0.102
IN	-1.615***	0.145	-1.902***	0.249	0.287	0.288
NY	-1.395***	0.083	-1.521***	0.090	0.128	0.123
WA	-0.846***	0.138	-0.692***	0.204	-0.154	0.246
WI	-0.497***	0.135	-1.141	0.790	0.643	0.802
State Initial Claims in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	-1.208***	0.065	-1.316***	0.066	0.082	0.093
IN	-1.789***	0.171	-1.560***	0.184	-0.228	0.252
NY	-1.397***	0.088	-1.501***	0.085	0.099	0.122
WA	-0.851***	0.152	-0.730***	0.173	-0.120	0.230
WI	-0.216	0.186	-0.833***	0.192	0.617**	0.267

State	Impact	SE	Impact	SE	Impact	SE
State Covered Employment in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	-1.297***	0.060	-1.213***	0.072	-0.162*	0.095
IN	-1.933***	0.167	-1.331***	0.190	-0.603**	0.253
NY	-1.512***	0.082	-1.380***	0.092	-0.134	0.123
WA	-0.842***	0.141	-0.713***	0.194	-0.129	0.240
WI	-0.458***	0.162	-0.658***	0.235	0.200	0.286
State Insured Unemployment Rate in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	-1.250***	0.066	-1.274***	0.066	-0.005	0.093
IN	-1.618***	0.173	-1.749***	0.183	0.131	0.252
NY	-1.480***	0.088	-1.428***	0.084	-0.057	0.122
WA	-0.787***	0.154	-0.804***	0.170	0.017	0.230
WI	-0.487***	0.185	-0.547***	0.193	0.060	0.267
State Continued Claims in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	-1.262***	0.066	-1.262***	0.065	-0.029	0.093
IN	-1.668***	0.176	-1.691***	0.179	0.023	0.251
NY	-1.488***	0.089	-1.422***	0.084	-0.068	0.122
WA	-0.796***	0.156	-0.793***	0.168	-0.003	0.229
WI	-0.487***	0.185	-0.547***	0.193	0.060	0.267

Source: Regression-adjusted impact estimates based on state administrative data, Model(s): 'UWSW28ec_', Run Date: 29MAR2019

Notes: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent.

Exhibits C-6 through C-9 provide additional NDNH-based whole-year estimates of impact on UI.

Exhibit C-6 Impact on UI Over Q1 to Q4 (in quarters), *Existing* vs. *Partial*

State	*Partial*	*Existing*	Impact	Std. Err.	Heterogeneity
Pooled	1.597	1.561	-0.036***	0.006	0.35
IN	1.550	1.482	-0.068***	0.010	<.01***
NY	1.647	1.617	-0.031***	0.011	0.56
WA	1.657	1.641	-0.016	0.013	0.07*
WI	1.533	1.521	-0.012	0.014	0.06*

Source: Regression-adjusted impact estimates based on NDNH data, Model(s): UQNY01epzz, Run Date: 22MAY2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

Exhibit C-7 Impact on UI Over Q1 to Q4 (in quarters), *Partial* vs. *Control*

State	Control	Partial	Impact	SE	Heterogeneity
Pooled	1.661	1.604	-0.057***	0.006	0.22
IN	1.632	1.550	-0.082***	0.014	0.04**
NY	1.707	1.647	-0.060***	0.011	0.75
WA	1.724	1.657	-0.067***	0.013	0.40
WI	1.549	1.533	-0.016	0.014	<.01***

Source: Regression-adjusted impact estimates based on NDNH data, Model(s): UQNY01pczz, Run Date: 22MAY2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

Exhibit C-8 Impact on UI Over Q5 to Q8 (in quarters), *Existing* vs. *Partial*

State	*Partial*	*Existing*	Impact	Std. Err.	Heterogeneity
Pooled	0.364	0.365	0.001	0.005	0.78
IN	0.229	0.225	-0.004	0.007	0.38
NY	0.444	0.455	0.011	0.010	0.23
WA	0.641	0.647	0.006	0.012	0.65
WI	0.387	0.381	-0.006	0.012	0.54

Source: Regression-adjusted impact estimates based on NDNH data, Model(s): UQNY02pczz, Run Date: 22MAY2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

Exhibit C-9 Impact on UI Over Q5 to Q8 (in quarters), *Partial* vs. *Control*

State	*Control*	*Partial*	Impact	Std. Err.	Heterogeneity
Pooled	0.416	0.395	-0.021***	0.006	0.22
IN	0.260	0.229	-0.031***	0.010	0.20
NY	0.465	0.444	-0.021**	0.011	0.99
WA	0.679	0.641	-0.038***	0.013	0.15
WI	0.376	0.387	0.011	0.012	<.01***

Source: Regression-adjusted impact estimates based on NDNH data, Model(s): UQNY02pczz, Run Date: 22MAY2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

C.2 Additional Results Relating to Chapter 7

Exhibits 7-11 and 7-12 presented selected subgroup results for employment. Exhibit C-10 provides differential impacts on UI .

Exhibit C-10 Differential Impacts of Labor Market Characteristics on Employment Over Q1 to Q4 (in quarters), for *Existing* vs. *Control*

State	Impact	SE	Impact	SE	Impact	SE
County Unemployment Rate at Time of Randomization						
	Above Median		Below Median		Differential	
Pooled	0.05***	0.01	0.06***	0.01	-0.01	0.01
IN	0.05**	0.03	0.10***	0.03	-0.05	0.04
NY	0.05***	0.01	0.07***	0.01	-0.02	0.02
WA	0.04*	0.02	0.03	0.03	0.02	0.04
WI	0.05*	0.03	-0.00	0.03	0.05	0.04
County Unemployment Rate - Growth						
	Above Median		Below Median		Differential	
Pooled	0.06***	0.01	0.05***	0.01	0.01	0.01
IN	0.10***	0.03	0.05*	0.03	0.05	0.04
NY	0.06***	0.01	0.06***	0.01	-0.00	0.02
WA	0.04	0.02	0.03	0.03	0.01	0.04
WI	0.02	0.03	0.03	0.03	-0.00	0.04
County Employment Rate - Growth						
	Above Median		Below Median		Differential	
Pooled	0.06***	0.01	0.06***	0.01	-0.00	0.01
IN	0.09***	0.03	0.07**	0.03	0.02	0.04
NY	0.06***	0.01	0.07***	0.01	-0.00	0.02
WA	0.05**	0.02	0.02	0.03	0.03	0.04
WI	-0.01	0.03	0.05*	0.03	-0.06	0.04
County Unemployment Rate in Previous Year						
	Above Median		Below Median		Differential	
Pooled	0.05***	0.01	0.06***	0.01	-0.01	0.01
IN	0.04*	0.03	0.12***	0.03	-0.07*	0.04
NY	0.05***	0.01	0.07***	0.01	-0.02	0.02
WA	0.04*	0.02	0.03	0.03	0.01	0.04
WI	0.05	0.03	-0.00	0.03	0.05	0.04
County Employment Rate in Previous Year						
	Above Median		Below Median		Differential	
Pooled	0.05***	0.01	0.07***	0.01	-0.02	0.01
IN	0.08***	0.03	0.07***	0.03	0.01	0.04
NY	0.05***	0.01	0.08***	0.01	-0.03*	0.02
WA	0.03	0.03	0.04*	0.02	-0.01	0.04
WI	0.02	0.03	0.03	0.03	-0.01	0.04
State Unemployment Rate in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	0.06***	0.01	0.06***	0.01	0.01	0.02
IN	0.09***	0.02	0.04	0.04	0.05	0.04
NY	0.06***	0.01	0.07***	0.01	-0.01	0.02
WA	0.05**	0.02	0.02	0.03	0.03	0.04
WI	0.03	0.02	-0.11	0.12	0.14	0.12
State Initial Claims in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	0.04***	0.01	0.07***	0.01	-0.03*	0.01
IN	0.07***	0.03	0.09***	0.03	-0.02	0.04
NY	0.05***	0.01	0.08***	0.01	-0.03	0.02
WA	0.03	0.02	0.04	0.03	-0.01	0.04
WI	0.00	0.03	0.04	0.03	-0.04	0.04

State	Impact	SE	Impact	SE	Impact	SE
State Covered Employment in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	0.05***	0.01	0.06***	0.01	-0.01	0.01
IN	0.08***	0.02	0.07**	0.03	0.01	0.04
NY	0.06***	0.01	0.06***	0.01	0.00	0.02
WA	0.04*	0.02	0.03	0.03	0.01	0.04
WI	-0.03	0.03	0.08***	0.03	-0.11**	0.04
State Insured Unemployment Rate in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	0.06***	0.01	0.05***	0.01	0.02	0.01
IN	0.08***	0.03	0.08***	0.03	-0.01	0.04
NY	0.07***	0.01	0.05***	0.01	0.02	0.02
WA	0.05**	0.02	0.02	0.03	0.04	0.04
WI	0.02	0.03	0.03	0.03	-0.01	0.04
State Continued Claims in Month of the Benefit Year Begin						
	Above Median		Below Median		Differential	
Pooled	0.06***	0.01	0.05***	0.01	0.01	0.01
IN	0.08***	0.03	0.08***	0.03	0.00	0.04
NY	0.07***	0.01	0.06***	0.01	0.01	0.02
WA	0.05**	0.02	0.02	0.03	0.03	0.04
WI	0.02	0.03	0.03	0.03	-0.01	0.04

Source: Regression-adjusted impact estimates based on state administrative data, Model(s): EQNY01ec_, Run Date: 22MAY2019
Notes: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent

Exhibit 7-13 presented overall impacts on job tenure. Exhibit C-11 presents the impact of assistance on job tenure and Exhibit C-12 presents the impact of enforcement on job tenure. The impact of assistance is more than twice as large as the impact of enforcement; nevertheless, the difference in the impacts is not statistically significant.

Exhibit C-11 Impact on Job Tenure (in quarters), *Existing* vs. *Partial*

State	*Partial*	*Existing*	Impact	SE	Heterogeneity
Pooled	4.712	4.747	0.035**	0.015	0.62
IN	4.439	4.533	0.093***	0.027	<.01***
NY	4.623	4.649	0.026	0.028	0.70
WA	5.188	5.180	-0.007	0.034	0.16
WI	4.803	4.797	-0.007	0.037	0.21

Source: Regression-adjusted impact estimates based on NDNH data, Model(s): JBNQ08epzz, Run Date: 22MAY2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

Exhibit C-12 Impact on Job Tenure (in quarters), *Partial* vs. *Control*

State	*Partial*	*Existing*	Impact	SE	Heterogeneity
Pooled	4.731	4.747	0.015	0.017	0.81
IN	4.451	4.439	-0.011	0.035	0.40
NY	4.589	4.623	0.034	0.029	0.42
WA	5.150	5.188	0.037	0.035	0.47
WI	4.814	4.803	-0.011	0.036	0.42

Source: Regression-adjusted impact estimates based on NDNH data, Model(s): JBNQ08epzz, Run Date: 22MAY2019
Note: Statistical significance levels for impacts are based on two-sided tests and flagged with asterisks, as follows: *** < 1 percent; ** < 5 percent; * < 10 percent. The pooled entry in the "Heterogeneity" column is the *p*-value for a test that all of the state impacts are equal; the other entries are *p*-values for a test that this state's impact equals the minimum variance combination of the other states' impacts.

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