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Jens Hainmueller, Moritz Marbach, Dominik Hangartner, Niklas Harder, and Ehsan Vallizadeh

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Jens Hainmueller[1,2,†], Moritz Marbach[2,6], Dominik Hangartner[2,3,4],

Niklas Harder[2,5], Ehsan Vallizadeh[7,8]

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Abstract

Governments continue to face challenges integrating refugees into the local labor market, and many past interventions have shown limited impact. This study examines the Job-Turbo program, a large-scale initiative launched by the German government in 2023 to accelerate employment among refugees—primarily individuals from Ukraine and eight other major countries of origin. Using monthly administrative panel data from Germany's network of public employment service offices and a difference-in-differences design, we find that the program significantly increased both caseworker–refugee contact and job placements over a 23-month follow-up period. Among Ukrainian refugees, the exit-to-job rate nearly doubled. Effects were broad-based—spanning demographic subgroups, unemployment durations, skill levels, regions, and local labor-market conditions—and concentrated in regular, unsubsidized employment. The program also raised both the rate and share of sustained job placements, consistent with improved match quality. Other refugee groups saw meaningful gains as well, but increases in job placements were concentrated among males and in low-skilled jobs, with only limited effects for females. We detect no negative spillovers for German or other immigrant job seekers, finding no signs of either resource reallocation or displacement. The results offer insights for governments responding to displacement crises. They indicate that intensified job-search assistance—embedded within the early stage of integration and implemented at scale through public employment infrastructure—can meaningfully improve refugees' labor-market outcomes, even amid significant arrivals.

Keywords: refugee integration, labor market policy, job search assistance
JEL Codes: J61, J68, J64

1 Introduction

Over recent decades, Europe and other regions have repeatedly confronted large-scale displacement, marked by pronounced rises in the number of people fleeing conflict and persecution [1]. The issue of refugee integration has regained urgency following Russia's 2022 invasion of Ukraine, which displaced over 11 million Ukrainians, with around 6 million seeking refuge across Europe [2].

Labor market integration constitutes a central—and often protracted—challenge in the resettlement process. Refugees typically face a range of structural and informational barriers to employment, including limited host-country language proficiency, non-recognition of foreign credentials, weak social networks, and unfamiliarity with local job search norms [3, 4]. In addition, psychological distress resulting from forced displacement may inhibit job readiness and employment stability [5]. Consequently, refugees typically experience longer job search durations and lower employment rates than both native-born individuals and other migrant populations [3].

These disadvantages can have lasting consequences. Research highlights the importance of an "integration window"—a critical early period after arrival that strongly predicts long-term outcomes [6]. Missing this window due to prolonged unemployment can hinder future employment prospects and depress wages, leading to enduring effects for both refugees and host societies [7, 8, 9].

Designing integration policies that are both effective and cost-efficient remains a persistent policy challenge. Many well-intentioned programs have produced limited results. Large-scale job training initiatives, for example, often fail to generate sustained employment effects and are costly to administer [10, 11]. Wage subsidies—while among the more effective short-term instruments—are constrained by substantial fiscal costs and limited uptake among both employers and refugees [10, 12, 13, 14].

Given the importance of host-country language proficiency for employment, many European countries prioritize intensive language and integration courses before labor market entry. These programs can improve job-finding rates, especially for low-skilled and subsidized jobs [15, 16, 17], but they are costly, delay employment, and are hard to scale during large and sudden arrivals [17]. Some governments have also introduced "integration contracts" to incentivize engagement with host-country norms and improve employment. Yet, evidence shows limited and short-lived economic effects [18]. Others have adopted punitive approaches—such as cutting benefits—to spur job search, but these have shown minimal

employment impact and may have unintended consequences, including heightened refugee poverty and increases in subsistence crime [19, 20, 21].

In this study, we examine the effects of the Job-Turbo initiative—a policy designed to accelerate refugees' entry into the labor market after having finished the integration courses. Launched by the German Federal Ministry of Labour and Social Affairs (BAMS) and the Federal Employment Agency (BA) in response to hosting over 1.2 million Ukrainian refugees, the program targets employable refugees who have completed an integration course and are receiving basic income support. The core feature of the Job-Turbo program was intensified engagement between Public Employment Service (PES) caseworkers and refugee jobseekers, with the aim of increasing both the frequency and quality of employment counseling to facilitate transitions from unemployment into work [22, 23].

Studying the impact of the Job-Turbo is important for both theoretical and policy reasons. From a theoretical perspective, our study contributes to the growing literature on the role of employment counseling. Existing research has shown that intensified counseling can improve job search outcomes in a variety of settings [24, 25, 26, 27, 28, 29, 30, 31]. Some studies find that early, mandatory counseling is particularly effective—especially for low-skilled jobseekers [32, 33]. In the German context, [34] found that improving the ratio of PES caseworkers to jobseekers in a pilot program significantly increased employment rates.

However, with the exception of [35]—who studied a small Swedish pilot program providing intensified counseling to refugees and found a 13% reduction in unemployment relative to a control group—the existing literature primarily focuses on citizens or long-term residents. Whether these findings generalize to refugees remains uncertain. Refugees often face more substantial barriers to employment, including language obstacles, unrecognized qualifications, and trauma, which may limit the effectiveness of counseling interventions. At the same time, while refugees may be unfamiliar with the host country's job search processes, they may be highly motivated to enter the labor market quickly—among other reasons to facilitate family reunification—suggesting that caseworker support could play an especially effective role in helping them navigate a new and complex labor market.

From a policy perspective, the Job-Turbo program is notable for its scale and ambition. Unlike the small pilot studied by [35], the Job-Turbo targeted about 400,000 unemployed refugees across Germany's nationwide network of job centers during our study period [22]. It represents an innovative public investment by a leading European refugee-host country to accelerate labor-market integration amid a large-scale displacement crisis.

The program is particularly significant because it marked a modest paradigm shift in

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Germany's integration strategy. It departs both from Germany's earlier approach and from Scandinavian models (e.g., Norway and Sweden) that typically prioritize education and language acquisition before labor-market entry [36]. By contrast, Job–Turbo adopts a middle path between "qualification-first" and "work-first" models [37, 22]. Evidence on its effects therefore offers valuable lessons for countries seeking effective strategies to integrate refugees and other migrant jobseekers.

2   Materials and Methods

2.1   Setting

2.1.1   Job centers

Germany's job centers are public agencies that help jobseekers—particularly unemployed recipients of Citizen's Benefit (*Bürgergeld*), the country's basic income support—find work and receive training. Operated by the BA in partnership with local municipalities, they are distributed throughout the country (see Figure A.1 in the appendix). Job centers offer services such as job placement, career counseling, and financial support. They also assist with enrollment in vocational training, and language and integration programs, particularly for migrants and refugees. At the frontline are PES caseworkers (*Arbeitsvermittler* or *Fallmanager*), who develop personalized employment plans with clients and provide ongoing guidance. Meetings typically occur as needed to track progress and adjust strategies. Caseworkers act as both advisors and enforcers—supporting clients while ensuring participation in work-related activities. Caseworker-client interactions at job centers occur through multiple channels, including phone and video calls, as well as in-person meetings for initial assessments and guidance on qualifications, integration, and job placement. Contacts at job centers often involve translators or other forms of language support, especially when working with refugees or immigrants who may not yet be fluent in German.

2.1.2   The Job-Turbo Program

The arrival of more than one million Ukrainian refugees placed significant pressure on Germany's labor market and social services. Under the European Union's Temporary Protection Directive, Ukrainian refugees were granted access to employment, welfare, and education services. Job centers played a central role in supporting their integration into the labor market.

To accelerate this process, the German government launched the Job-Turbo initiative. The program was formally announced at a press conference on October 18, 2023, by the BMAS and the BA, which also appointed a special representative to oversee implementation [38]. At the job center level, the initiative targeted all refugees receiving benefits under Social Code Book II (*SGB II*) who were completing, or had nearly completed, an integration course. These courses consist of 700 teaching units (each 45 minutes), comprising 600 units of language instruction and 100 units of social, political, and cultural orientation in Germany [39, 22]. Besides Ukrainians, the main refugee groups were from Afghanistan, Eritrea, Iran, Iraq, Nigeria, Pakistan, Somalia, and Syria.

The Job-Turbo restructured the conventional German integration pathway by encouraging immediate labor market entry upon course completion, even without full recognition of foreign qualifications or without achieving the B2 language certificate. Participants were expected to pursue additional training while employed, thereby adopting a hybrid "work-first" and "qualification-first" approach [37, 22].

The program was designed around three phases: (1) orientation and early language acquisition, primarily through integration courses; (2) rapid entry into employment or training to reinforce language skills and gain experience; and (3) progression toward skilled employment. The core emphasis was on phase two—job placement. At the October 2023 press conference, BMAS and BA announced that job centers should intensify counseling for refugees immediately after completion of their integration course and prioritize rapid job placement. This announcement was followed by an internal mandatory directive issued by the BA on January 5, 2024. The directive stipulated that, after completing the language training portion of the course, refugees should enter a structured follow-up process with their caseworkers to facilitate labor market entry. Counseling was to be significantly intensified for six months, with contacts scheduled approximately every six weeks. The first counseling session was to occur between four weeks before and four weeks after the end of the integration [23]. Implementation was centrally monitored by the special representative, who convened monthly meetings with all job center directors.

The policy shift embodied in the Job-Turbo—emphasizing intensified counseling and immediate labor market entry after integration courses—was intended as a permanent reform. The initiative remains in effect, though the mandate of the special representative and centralized monitoring concluded in July 2024 (Table A.1 in the Appendix presents a timeline of the Job Turbo program).

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2.2 Data

We use monthly administrative panel data from the BA, covering job placement services and labor market outcomes at the job center level. Our study period spans from October 2022—one year prior to the program's launch—through August 2025, providing 23 monthly follow-up observations starting when the Job-Turbo began in October 2023. Additional data details are provided in the appendix. Our main analysis focuses on the full population of 300 BA-operated job centers. We exclude the 104 job centers that are operated independently by local municipalities (so-called *Optionskommunen*) due to missing data on counseling contacts and uncertainty about program participation. However, we report limited results for these centers in the appendix.

For the main analysis, we focus on individuals officially registered as unemployed under SGB II, dividing them into four mutually exclusive groups. The treatment groups consist of unemployed individuals from Ukraine and from eight major refugee—origin countries, referred to as *Ukrainian refugees* and *other refugees*, respectively. For comparison, we employ two control groups that are not eligible for the Job-Turbo program. Our primary control group comprises *other immigrants*—unemployed individuals from countries outside the principal refugee origins, primarily migrants from both EU and non-EU countries. As a secondary control group, we include *Germans*, encompassing both native-born and naturalized citizens who are unemployed. By comparing labor-market outcomes before and after the introduction of the Job-Turbo across these groups, we estimate the program's impact on refugee integration.

2.3 Statistical Analysis

We estimate the average treatment effect on the treated (ATT) of the Job-Turbo program using a difference-in-differences framework. Let $D_{i,j,t}$ indicate whether group i in job center j is treated in month t (coded 1 in post-treatment months for the treated groups and 0 otherwise). Let $Y_{i,j,t}(1)$ and $Y_{i,j,t}(0)$ denote the potential outcomes with and without treatment, respectively. The ATT for group i in month t is

$$\text{ATT}_{i,t} = \mathbb{E}\left[Y_{i,j,t}(1) - Y_{i,j,t}(0) \mid D_{i,j,t} = 1\right].$$

To estimate the ATT, we employ the interactive fixed-effects (IFE) imputation estimator

[40], which models untreated potential outcomes as

$$Y_{i,j,t}(0) = \alpha + \gamma_{i,j} + \xi_t + \lambda'_{i,j} f_t + \varepsilon_{i,j,t},$$

where $\gamma_{i,j}$ are job-center-by-group fixed effects, ξ_t are month fixed effects, and $\lambda'_{i,j} f_t$ are interactive fixed effects capturing heterogeneous loadings $\lambda_{i,j}$ on latent common factors f_t [41]. We fit this model on the untreated observations ($D_{i,j,t} = 0$), use it to impute the counterfactual $\widehat{Y}_{i,j,t}(0)$ for treated observations, and then estimate unit-by-time treatment effects $\hat{\tau}_{i,j,t} = Y_{i,j,t}(1) - \widehat{Y}_{i,j,t}(0)$. The ATT is obtained by averaging $\hat{\tau}_{i,j,t}$ over the treated observations ($D_{i,j,t} = 1$). This estimator allows treatment effects to vary across units and time. We define the treatment indicator $D_{i,j,t}$ so that October 2023 is coded as the first month in which the Job-Turbo is active for the treatment groups, reflecting the program's launch at the press conference on October 18, 2023.

This specification addresses three broad sources of confounding: (i) unobserved time-invariant group-job-center heterogeneity via $\gamma_{i,j}$; (ii) month-specific shocks common to all units via ξ_t; and (iii) unobserved, time-varying forces with heterogeneous impacts captured by the low-rank factor term $\lambda'_{i,j} f_t$ [41]. Importantly, the IFE imputation estimator generalizes the simpler two-way fixed-effects (TWFE) imputation model [40, 42],

$$Y_{i,j,t}(0) = \alpha + \gamma_{i,j} + \xi_t + \varepsilon_{i,j,t},$$

which requires the parallel trends assumption that treated units are on the same trajectory as the untreated units. By augmenting TWFE with the factor component $\lambda'_{i,j} f_t$, the IFE specification relaxes this requirement, allowing common shocks (e.g., macro or sectoral shocks) to load differently across groups and job centers. Operationally, IFE imputes $\widehat{Y}_{i,j,t}(0)$ in a way that embeds each unit's estimated exposure to these factors and then forms $\hat{\tau}_{i,j,t} = Y_{i,j,t}(1) - \widehat{Y}_{i,j,t}(0)$; averaging $\hat{\tau}_{i,j,t}$ yields the ATT after being purged of heterogeneous responses to common shocks. Therefore, although the IFE estimator introduces additional complexity, we prefer it over the TWFE estimator because it offers greater robustness to accommodate time-varying confounders. Similar low-rank structures are used in synthetic control and matrix-completion approaches to address time-varying confounders [43, 44, 45].

The key identifying assumption is conditional parallel trends for untreated potential outcomes: conditional on $\gamma_{i,j}$, ξ_t, and the factor structure $\lambda'_{i,j} f_t$, treated and control groups would have followed parallel trends in the absence of the Job-Turbo. Substantively, net of potential deviations captured by the factor structure, unemployed Ukrainians and other

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refugees would have exhibited trajectories in contact and exit-to-job rates similar to those of the control groups (e.g., other unemployed immigrants and, in robustness checks, unemployed Germans) within the same job centers and months. This assumption is plausible because both treated and control samples consist of individuals who are registered as unemployed and face similar local labor-market conditions. We assess the validity of this assumption by examining pre-treatment deviations from parallel trends in all plots and also a series of placebo checks.

In implementation, we estimate factors and loadings using pre-treatment and never-treated observations, and select the optimal number of factors r by cross-validation to minimize mean squared prediction error (see Appendix for details). Across specifications, cross-validation selects at most one factor, and most often selects zero. When $r = 0$ is chosen, the estimator reduces to the TWFE model. Uncertainty is quantified via a block bootstrap with 500 replications [40].

Finally, we assess robustness by replicating the core specifications using alternative estimators, including the simpler TWFE imputation estimator and the matrix completion estimator [44].

2.4 Outcomes

We analyze several outcome measures. To assess whether the program increased counseling intensity between caseworkers and the unemployed, we examine the *contact rate*, defined as the number of registered unemployed job-center clients with at least one contact in a given month, divided by the stock of unemployed individuals in the previous month. To evaluate job-placement success, we use the *exit-to-job rate*, defined as the number of individuals transitioning from unemployment into employment, divided by the unemployed stock in the previous month [46, 47, 27, 34]. This metric captures placements into Germany's regular, competitive labor market and excludes fully subsidized positions.

Beyond overall placements, we disaggregate exits by job-skill level (low-skilled, skilled, high-skilled), employment type (regular vs. marginal), and subsidy status. We also examine exits by job-retention outcomes, prior unemployment duration, and transitions to other statuses such as training, apprenticeships, or labor-force exit. Heterogeneity analyses cover gender, age, and region. For some of these additional outcomes, we only have data up until June 2025. Detailed variable definitions appear in appendix C.

2.5 Descriptive Statistics

Table A.2 in appendix D presents descriptive statistics for all 300 job centers operated by the BA. In 2023, prior to the launch of the Job-Turbo, the average job center served approximately 4,347 registered unemployed persons with 185 full-time equivalent (FTE) staff—corresponding to an average caseload of 23 unemployed per staff member. On average, the population of unemployed consisted of 11% Ukrainian refugees, 13% other refugees, 20% other immigrants, and 56% German nationals. The average vacancy-to-unemployed ratio was 0.37, reflecting weak labor demand. Additional descriptive statistics are provided in Table A.3 and Figure A.2 in appendix D.

3 Results

3.1 Main Effects

We begin by estimating the effects of the Job-Turbo program on the contact and exit-to-job rates for unemployed Ukrainian and other refugees, using other unemployed immigrants as the control group. Figure 1 presents the ATT estimates from the IFE model, and Tables A.4 and A.5 in the appendix provide the corresponding numerical results.

For unemployed Ukrainian refugees, the Job-Turbo increased the contact rate by 15 percentage points per month (95% CI: [8.2, 22]), a 54% rise relative to the pre-program average of 28%. Over the 23-month follow-up period, this corresponds to roughly 490,588 additional caseworker contacts across the 300 BA-operated job centers (see appendix F for details on the estimation of totals). The effect on the exit-to-job rate is an increase of 1.8 percentage points per month (95% CI: [1.7, 1.9]), representing a 113% increase over the pre-treatment average of 1.6% and yielding an estimated 58,270 additional job placements across these centers during the 23-month follow-up.

These effects build gradually after the program's launch in October 2023, rise further following the internal directive issued to job centers in January 2024, and remain elevated through August 2025. A slight decline in the contact rate effects emerges beginning in July 2025, when centralized monitoring ended, but the effects remain. Contact rates increase first, followed by gains in employment—consistent with the idea that intensified counseling takes time to translate into job placements. The persistent pattern indicates that the Job-Turbo produced not only a rapid but also a lasting impact on exit-to-job rates, rather than simply triggering a short-term spike in engagement or employment transitions.

For other refugees, the Job-Turbo increased the contact rate by 2.4 percentage points per month (95% CI: [1.8, 3.1]), an 8% increase over the 29% baseline. The exit-to-job rate rose by 1 percentage point (95% CI: [0.9, 1.2]), or 28% above the pre-treatment mean of 3.7%. These effects translate into approximately 101,088 additional contacts and 43,532 job exits over the 23-month follow-up period. While smaller than those for Ukrainian refugees, these impacts remain substantial and statistically significant. In the mechanism section below, we further analyze the differences in effects on the contact rate and exit rates across the two groups.

Our main findings remain robust across a range of alternative specifications. Using unemployed Germans as a secondary control group produces similar results (Figure A.3). The one notable difference is that the effect on the contact rate for Ukrainian refugees is somewhat smaller in magnitude.

Estimates from simpler two-way fixed effects models (Figures A.4–A.5) and from matrix-completion methods (Figures A.6–A.7) align with those from the IFE model. Effects are also consistent across job centers with differing volumes of unemployed individuals (Figures A.8–A.11), ruling out the possibility that estimates are driven by unusually small or large centers. We also conduct a series of placebo checks in which the Job-Turbo intervention is artificially assumed to have begun prior to its actual implementation. Across all specifications, the placebo ATT estimates remain well below their corresponding post-treatment estimates—often by a substantial margin. Some mild pre-trends appear in the contact-rate outcomes for Ukrainian refugees and in the exit-to-job outcomes for other refugees especially in specifications with extended placebo windows (see appendix for details Figures A.12–A.19).

Heterogeneous Effects by Age and Gender

How did the Job-Turbo program affect different subgroups of refugees? Prior research highlights the particular challenges older and female refugees face when integrating into host-country labor markets [4, 48, 49, 50, 51].

Figure 2 presents ATT estimates for unemployed Ukrainian refugees (compared with other unemployed immigrants), disaggregated by age and gender. In the pre-program period, the female share was about 68% among unemployed Ukrainian refugees, 44% among other unemployed refugees, 51% among other unemployed immigrants, and 42% among unemployed German nationals. Age distributions were broadly comparable across the four

groups—each had the smallest share at ages 15–25 and the largest in the mid-career bands (25–45)—with only modest deviations: other refugees skewed slightly younger, while German nationals were relatively even but somewhat higher in the oldest group (55–65).

For Ukrainian refugees, the program significantly increased both contact and exit-to-job rates across all subgroups. Effects were somewhat smaller for the youngest (15–25) and oldest (55–65) cohorts, but otherwise similar across genders. Among female Ukrainian refugees, the monthly exit-to-job rate rose by 1.2 percentage points (95% CI: [0.9, 1.6]) for ages 15–25, 1.5 points (95% CI: [1.3, 1.7]) for ages 25–35, 2.0 points (95% CI: [1.8, 2.1]) for ages 35–45, 2.0 points (95% CI: [1.8, 2.2]) for ages 45–55, and 1.0 point (95% CI: [0.9, 1.1]) for ages 55–65. For male Ukrainian refugees, the corresponding increases were 1.6 percentage points (95% CI: [1.1, 2.1]) for ages 15–25, 1.3 points (95% CI: [0.9, 1.6]) for ages 25–35, 2.3 points (95% CI: [2.0, 2.5]) for ages 35–45, 1.7 points (95% CI: [1.4, 2.0]) for ages 45–55, and 0.9 points (95% CI: [0.7, 1.1]) for ages 55–65.

For other refugees (Figure A.20), contact-rate effects are fairly uniform across subgroups. Exit-to-job effects are more heterogeneous, with the largest gains among younger men: 2.2 percentage points (95% CI: [1.7, 2.7]) for ages 15–25, 1.8 points (95% CI: [1.4, 2.1]) for ages 25–35, and 1.1 points (95% CI: [0.9, 1.4]) for ages 35–45; impacts taper at older ages but remain statistically significant. Effects for women are much smaller, with confidence intervals that include zero for ages 25–35 and 35–45; women aged 45–55 show a statistically significant but economically modest increase of 0.3 percentage points (95% CI: [0.2, 0.5]), while younger female cohorts (15–35) exhibit modest gains of about 0.5 points (95% CI: [0.1, 0.9]). Overall, these findings indicate that among other refugees, men—especially those under 45—benefited most from the Job-Turbo in terms of rapid transitions from unemployment to regular employment, whereas female refugees experienced much smaller and often statistically insignificant improvements. Similar patterns appear when unemployed German nationals are used as the control group (Figure A.21 and A.22).

3.2 Heterogeneous Effects by Region and Labor Market Tightness

Next, we examine whether the Job-Turbo's effects vary across job centers. As shown in Figures A.23–A.26, the program produced consistently positive impacts on both contact and exit-to-job rates across the ten administrative regions (*Regionaldirektionsbezirke*).

For unemployed Ukrainian refugees, the estimated increase in the contact rate ranges from 8.9 percentage points (95% CI: [7.3, 10.5]) in Bavaria to 15.2 percentage points (95%

CI: [13.2, 17.2]) in North Rhine–Westphalia. The exit-to-job rate effects range from 1.2 percentage points (95% CI: [0.9, 1.4]) in Berlin–Brandenburg to 2.2 percentage points (95% CI: [1.9, 2.5]) in Bavaria. The largest (and smallest) percentage gains over baseline occur in Baden–Württemberg (Nord) region, respectively. Comparable regional patterns emerge for other refugees and when Germans are used as the control group.

We also examine variation by labor market tightness, measured by the vacancy-to-unemployed ratio. Job centers are grouped into terciles based on their pre-treatment ratios: low (0.18), medium (0.29), and high (0.62). As shown in Figures A.28–A.29, the program's effects were consistent across all terciles. Exit-to-job rate impacts were slightly larger in tighter labor markets, while contact rate increases were somewhat smaller.

For unemployed Ukrainian refugees, the program increased the monthly contact rate by 12.4 percentage points (95% CI: [11.1, 13.7]), 12.3 percentage points (95% CI: [8.1, 16.4]), and 8.6 percentage points (95% CI: [6.8, 10.3]) in the low, medium, and high labor market tightness terciles, respectively. Correspondingly, the exit-to-job rate increased by 1.5 percentage points (95% CI: [1.3, 1.6]) in the low tercile, 1.7 percentage points (95% CI: [1.5, 1.8]) in the medium tercile, and 2.2 percentage points (95% CI: [2.0, 2.5]) in the high tercile, indicating that stronger labor demand may amplify the employment effects of intensified counseling. Similar patterns appear for other unemployed refugees and when unemployed Germans are used as the control group.

3.3 Heterogeneous Effects by Job Skill Levels and Employment Types

Did the Job-Turbo disproportionately direct refugees into low-skilled employment? Prior research shows that refugees often experience substantial skill downgrading, working in jobs well below their qualifications and competencies [52, 4]. To assess this concern, we examine the program's impact on exit-to-job rates by job skill level—low-skilled, skilled, and high-skilled—as shown in Figure 3. The classification of job skill levels follows the German Classification of Occupations [53]: low-skilled jobs involve routine work with no formal training; skilled jobs require vocational training; and high-skilled jobs encompass complex and highly complex tasks requiring advanced technical qualifications or a university degree.

For Ukrainian refugees, the Job-Turbo significantly increased exits across all job skill levels: 0.84 percentage points (95% CI: [0.76, 0.92]) for low-skilled jobs, 0.75 percentage points (95% CI: [0.70, 0.81]) for skilled jobs, and 0.1 percentage points (95% CI: [0.08, 0.11])

for high-skilled jobs. These correspond to relative increases of 102%, 170%, and 60% over pre-treatment rates, respectively. For other refugees, the effects were smaller and concentrated in low-skilled jobs. The effects were: 0.68 percentage points (95% CI: [0.59, 0.77]) for low-skilled jobs (a 31% increase) and 0.16 percentage points (95% CI: [0.11, 0.21]) for skilled jobs (a 15% increase), with no discernible effect on high-skilled job exits. Results are similar when using German nationals as the control group (see Figure A.31).

We also examine program impacts by employment type—distinguishing between regular jobs subject to social security contributions and marginal employment (so-called *Mini-Jobs*, typically characterized by low earnings or short duration). Figure A.32 shows that for Ukrainian refugees, the Job-Turbo increased exits to regular employment by 1.7 percentage points (95% CI: [1.5, 1.8]) and to marginal employment by 0.03 percentage points (95% CI: [0.02, 0.04]). These effects represent relative increases of 119% and 92%, respectively, compared to pre-treatment baselines—though the vast majority of exits occurred into regular jobs. For other refugee groups, the program raised exits to regular employment by 0.8 percentage points (95% CI: [0.7, 0.9]), corresponding to a 25% increase, and to marginal employment by 0.02 percentage points (95% CI: [0.01, 0.03]), a 27% increase. Results are similar when using German nationals as the control group (see Figure A.33).

3.4 Effects on Exits to Non-Job Outcomes

A potential concern with the Job-Turbo—as with any active labor market program—is that it may have raised exit-to-job rates by prompting some refugees to leave the labor force, thereby shrinking systematically the number of jobseekers.

Figure A.34 shows ATT estimates for non-job exits, including exits from the labor force, apprenticeships, training programs, and for other reasons (comprising mostly the termination of need for assistance). We find no significant effect on labor force exits or apprenticeships for either Ukrainian or other refugees. However, the program somewhat increased exits into training programs: by 1.0 percentage points (95% CI: [0.6, 1.4]) for Ukrainian refugees—equivalent to a 15% increase over the baseline—and by 0.7 percentage points (95% CI: [0.5, 0.9]) for other refugees, representing an 10% increase. These effects taper over time. For Ukrainian refugees, the Job-Turbo also reduced exits for other reasons by -1.0 percentage points (95% CI: [-1.1, -0.9]), which is consistent with a shift toward job placements. For other refugees, effects on exits for other reasons were close to zero and statistically insignificant.

These findings suggest that Job-Turbo boosted both employment and training participa-

tion without encouraging labor force withdrawal. Results are broadly similar when Germans are used as the control group (Figure A.35), with one notable difference being a small but statistically significant decrease in labor-force exits with this secondary control group.

3.5   Effects by Job Retention

Did the Job-Turbo facilitate sustained employment or primarily lead to short-term placements? One potential concern is that caseworkers, under pressure to boost placement rates, may have prioritized speed over match quality—resulting in early job separations.

We assess two retention-related outcomes. First, we examine the exit-to-job rate conditional on retention—that is, transitions into employment that last at least 3, 6, or 12 months after placement. As shown in Figure 4, the Job-Turbo increased exit rates for Ukrainian refugees by 1.4 percentage points (95% CI: [1.3, 1.5]) for jobs retained at least 3 months (116% above baseline), 1.2 percentage points (95% CI: [1.1, 1.3]) for 6-month jobs (118%), and 0.8 percentage points (95% CI: [0.7, 0.9]) for 12-month jobs (93%).

For other refugees, the respective increases were 0.6 percentage points (95% CI: [0.5, 0.7]), 0.4 percentage points (95% CI: [0.3, 0.5]), and 0.2 percentage points (95% CI: [0.1, 0.2]), corresponding to gains of 21%, 18%, and 9%, respectively. Similar patterns are observed when using German nationals as the control group (Figure A.36).

Second, we analyze the share of job exits resulting in stable employment—a proxy for match quality, indicating whether the marginal placement induced by the Job-Turbo is more likely to persist. If match quality had declined, we would expect this share to fall. Figure A.37 shows, if anything, the opposite: for Ukrainian refugees, retention shares increased by 3.0 percentage points (95% CI: [1.9, 4.1]) at 3 months, 5.4 percentage points (95% CI: [4.0, 6.8]) at 6 months, and 7.0 percentage points (95% CI: [5.2, 8.7]) at 12 months—corresponding to relative gains of 3.5%, 7.4%, and 11.2%, respectively. For other refugees, we find no statistically significant effects on retention shares at 3 or 6 months, and a borderline insignificant negative effect of -1.5 percentage points (95% CI: [-3.1, 0.1]) at 12 months, suggesting slightly weaker match durability at the intensive margin. Results are similar when using German nationals as the secondary control group (Figure A.38), with one difference: for other refugees, there is a very small but statistically significant negative effect on retention shares at both 6 and 12 months.

Overall, these findings indicate that the Job-Turbo not only raised initial job placements but also improved the durability of those matches, particularly for Ukrainian refugees. The

program's impacts thus reflect genuine gains in sustained employment rather than short-lived or low-quality placements.

3.6   Effects by Duration of Unemployment

Was the Job-Turbo equally effective for individuals with varying lengths of prior unemployment? Duration dependence is well-documented: the likelihood of re-employment declines as unemployment lengthens, due to factors like skill loss, lower search intensity, and negative employer perceptions [54, 55]. Analyzing heterogeneous effects by duration helps assess whether the program mitigated these structural barriers.

We estimate program impacts on exit-to-job rates by baseline unemployment duration. This also serves as a robustness check by controlling for differences in unemployment history across groups. This is important because, on average, Ukrainian refugees—and to a lesser extent other refugees—have been unemployed for a shorter period than the other groups. We define four categories: short-term (under 3 months), moderately short-term (3 to under 6 months), medium-term (6–12 months), and long-term unemployed (over 12 months). Results, shown in Figure 5, indicate that the Job-Turbo was effective across a wide range of unemployment durations.

For Ukrainian refugees, the Job-Turbo program significantly increased exit-to-job rates across all unemployment durations. Specifically, it raised exit rates by 0.79 percentage points (95% CI: [0.71, 0.86]) for those unemployed less than 3 months, 0.35 percentage points (95% CI: [0.30, 0.39]) for 3–6 months, 0.17 percentage points (95% CI: [0.14, 0.20]) for 6–12 months, and 0.09 percentage points (95% CI: [0.06, 0.11]) for those unemployed for over 12 months. These effects correspond to relative gains of 99%, 105%, 91%, and 106%, respectively, compared to pre-treatment levels.

Effects for other refugees follow a similar pattern, though somewhat smaller in magnitude. The Job-Turbo increased exit-to-job rates by 0.32 percentage points (95% CI: [0.24, 0.40]) for those unemployed for less than 3 months, 0.18 percentage points (95% CI: [0.14, 0.22]) for 3–6 months, 0.08 percentage points (95% CI: [0.05, 0.11]) for 6–12 months, and 0.07 percentage points (95% CI: [0.04, 0.10]) for those unemployed longer than 12 months. These effects correspond to relative gains of 20%, 26%, 15%, and 16%, respectively, compared to pre-treatment levels. Similar patterns hold when using Germans as the control group (Figure A.39).

3.7 Spillover Effects

Could the gains from the Job-Turbo program for refugees have come at the expense of non-refugee job seekers—namely, German nationals and other immigrants? We focus on two potential spillover mechanisms. First, resource reallocation: if job centers were operating near capacity, they may have redirected counseling and placement resources toward refugees without proportional increases in staffing. Second, competition-induced displacement: increased job search activity among refugees may have intensified competition for available jobs, potentially crowding out other job seekers when local labor demand is relatively inelastic. While such spillovers are important for understanding overall program impacts, they are rarely quantified. Notable exceptions include [46, 56, 57, 34], who find mixed evidence on displacement effects.

To examine spillovers, we leverage the idea that any negative externalities—via resource reallocation or displacement—should be most pronounced in job centers with a higher pre-treatment share of refugee clients. These centers faced a larger, refugee-focused operational shock, diverting counselor time and channeling more refugee applicants into the same local vacancy pool; using pre-treatment shares proxies exposure without post-program contamination. If spillovers exist, outcomes for non-refugees—such as contact and exit-to-job rates—should deteriorate more in these centers following the rollout of the Job–Turbo.

To test for spillover effects, we estimate separate regression models for German nationals and for other immigrants. Each model includes an interaction between the pre-treatment refugee client share and a post-treatment indicator, along with controls for the interaction of the post-treatment indicator with other pre-treatment job center characteristics: overall size (total clients), labor market tightness (vacancy-to-unemployed ratio), workload (client-to-staff FTE ratio), and baseline performance (pre-treatment contact and exit rates). All specifications incorporate job center and year-month fixed effects (see appendix for details). Evidence of negative spillovers would appear as a negative, statistically significant coefficient on the interaction between the pre-treatment refugee share and the post-treatment indicator, indicating that non-refugee job seekers fared worse in centers with larger refugee populations after the Job-Turbo rollout.

Table A.9 in the appendix shows no such pattern. For both German job seekers and other immigrants, the coefficients on the interaction between the pre-treatment refugee share and the post-treatment indicator are near zero and statistically insignificant across all outcomes: overall contact rates, the aggregate exit-to-job rate, and exit-to-job rates disaggregated by low-skilled, skilled, and high-skill placements. In other words, post-program changes in these

measures for non-refugee job seekers are indistinguishable between job centers with high versus low refugee concentrations. Figures A.40-A.45 in the appendix corroborate these findings by providing a graphical analysis and leveraging the joint distribution of relevant moderators. Even in job centers that combined a high pre-treatment refugee share with signs of capacity constraints or weak labor demand, we find no evidence of resource reallocation or competition-driven displacement.

4   Mechanisms

What mechanisms account for the impacts of the Job–Turbo program? Like many labor-market interventions, the Job–Turbo is a bundled policy that combines intensified counseling, early activation with the potential for sanctions, credential deferral, wage subsidies, employer engagement, and related measures. We examine various channels to gauge their potential contributions to the observed effects.

Wage subsidies. One potential mechanism is the expanded use of wage subsidies. In Germany, subsidies comprise employer grants (*Eingliederungszuschüsse*) and jobseeker incentives (*Einstiegsgeld*), both shown to improve employment outcomes [58, 59, 60, 13]. Figure 6 shows that the Job–Turbo increased exits to both subsidized and unsubsidized jobs. For Ukrainian refugees, most gains are in unsubsidized employment (increase of 1.2 percentage points; 95% CI [1.1, 1.3]); subsidized exits also rose by 0.42 percentage points (95% CI [0.39, 0.46]), and the subsidized share of exits increased by 9 percentage points (95% CI [7.9, 10.1]). Note that the large majority of exits are into unsubsidized jobs. Among other refugees, increases are smaller in both unsubsidized (0.73 percentage points; 95% CI [0.62, 0.84]) and subsidized jobs (0.09 percentage points; 95% CI [0.06, 0.12]), with no detectable change in the subsidized share. These patterns suggest that subsidies played at most a limited role in explaining the overall placement gains from the Job–Turbo.

Sanctions. Prior work shows that sanctions, and even sanction warnings, can shorten unemployment spells and raise job exits, possibly at the cost of lower post-unemployment job duration and earnings [e.g., 61, 62, 63]. In our setting, however, sanctions appear unimportant: as documented in Figure A.47, sanction rates for refugees were extremely low and unchanged by the program.

Counseling intensity. Previous research shows that counseling can enhance job finding by reducing information and search frictions, increasing vacancy referrals, providing structured application support and interview preparation, and facilitating targeted employer outreach.

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These mechanisms help jobseekers identify suitable vacancies, prepare strong applications, and sustain both search effort and motivation [64, 32, 28, 30, 46, 31]. Figure 7 shows that while we observe an increase in contacts per caseworker around the Job–Turbo rollout, the average staffing levels across job centers remained flat. This suggests that existing caseworkers absorbed the added workload, likely through productivity gains, efficiency improvements, or overtime. These findings are consistent with survey evidence reporting increased caseworker workloads under the Job–Turbo [65].

As staffing was stable, we can estimate the additional workload per caseworker induced by the Job–Turbo. Based on our calculations, the program generated about 591,676 additional caseworker–refugee contacts over 23 months across the 300 BA-operated job centers—an average of 25,725 per month, or about 86 per job center. With an average of 185 FTE staff per center pre-rollout, this corresponds to approximately 0.46 additional contacts per FTE per month among unemployed clients. Against a baseline of about 1,167 monthly contacts (6.3 per FTE), this is a 7.3% increase that was absorbed without measurable staffing changes.

If pre-period slack had driven the rise in contacts, effects should be larger in centers with low client-to-staff ratios; instead, Figures A.48–A.51 show similar impacts across that distribution. Likewise, Figures A.52–A.55 show comparable effects in centers with and without refugee- or employer-specialized teams, pointing away from specialization (and an associated increase in counseling quality) as the primary driver.

Assuming that the Job–Turbo program influences job exits only through increased counseling, we estimate an instrumental-variables (IV) model to quantify the marginal return to counseling. Specifically, we regress the exit-to-job rate on the contact rate with job-center–by–group and month fixed effects, instrumenting contacts with the Job–Turbo rollout indicator (Tables A.6–A.7, Figure A.56).

For Ukrainian refugees overall, the local average treatment effect (LATE) indicates that a 1-percentage-point increase in the contact rate raises the exit-to-job rate by about 0.17 percentage points (95% CI [0.157, 0.191]). For other refugees, the response is roughly twice as large—about 0.40 percentage points per 1-percentage-point contact increase (95% CI [0.32, 0.48]). Conditional on the same rise in contact intensity, exits therefore increase more for other refugees than for Ukrainians.

These aggregate effects conceal marked gender heterogeneity. Among Ukrainians, the LATEs are nearly identical for women and men—around 0.15 percentage points (95% CI [0.13, 0.16]) and 0.18 percentage points (95% CI [0.16, 0.20]) per 1-percentage-point contact increase, respectively. For other refugees, however, the gap is striking: about 0.10 percentage

points for women (95% CI [0.053, 0.136]) versus roughly 0.62 percentage points for men (95% CI [0.457, 0.786]).

Two insights follow. First, Ukrainians' larger total exit response to the Job Turbo program reflects a stronger first stage: the program raised counseling contacts far more for them than for other refugees. However, the marginal return of contact is actually higher for other refugees. The heavier increase in contacts for Ukrainians is consistent with implementation priorities: although the January directive to job centers referenced all refugees, the program was conceived and branded to address the large number of Ukrainian arrivals, making it plausible that job-center caseworkers focused more attention on this group.

Second, while additional contacts produce economically meaningful gains across groups, gender patterns diverge sharply: effects are nearly uniform by gender for Ukrainians, but among other refugees men benefit far more. This pronounced gender gap aligns with evidence that refugee women often face a "triple disadvantage"—as migrants, as refugees, and as women [49, 66]. Barriers include (i) childcare responsibilities that reduce labor-market participation; (ii) slower language acquisition and weaker networks, as women begin language courses later, complete them less often, and have fewer contacts with Germans; and (iii) lower transferability of human capital, since refugee women are more likely to have worked in regulated sectors such as health and education where foreign credentials are difficult to recognize and German proficiency is essential [66]. In contrast, refugee men more often have experience in male-dominated industries such as transport, construction, agriculture, and certain manufacturing, which require fewer certifications and weaker language skills.

In our data, men and women among other refugees have similarly low education levels compared with Ukrainians, and their job placements are concentrated in low-skill sectors that are strongly gender-segregated. Ukrainian refugees—women and men alike—have substantially higher educational attainment and more diverse occupational backgrounds [67]. Consistent with this, their placements span low-skill, skilled, and high-skill jobs and are therefore less constrained by Germany's gender segregation in low-skilled employment. These structural differences, reinforced by childcare constraints, can help explain why counseling generates larger exit-to-job gains for men among other refugees, but uniform gains across genders among Ukrainian refugees. Supporting this interpretation, Figure A.57 in the appendix shows that Job Turbo effects for Ukrainians are relatively uniform across all three job skill levels for both genders, whereas for other refugees the impacts are concentrated in low-skill placements for men.

It is important to note that the IV estimates rest on an exclusion restriction: conditional

on the two-way fixed effects, the Job–Turbo influences exits only through increases in counseling contacts. If the program also raised exits via other channels, those non-counseling gains would be misattributed to counseling, biasing the LATE upward. Under the plausible assumption that any such channels if anything increase exits, our LATEs are best interpreted as an upper bound on the causal effect of increased counseling intensity on exits. In addition, the IV coefficients identify local average treatment effects for compliers—job-center–by-group observations whose contact intensity shifted with the rollout—so external validity is limited.

Despite these limitations, the weight of the evidence points to intensified counseling as a central mechanism behind the observed improvements in job placement, with subsidies and sanctions playing, at most, ancillary roles.

5 Conclusion

This study examines the effects of Germany's Job–Turbo—a large-scale initiative to accelerate refugee integration through intensified employment counseling. The program substantially increased caseworker–client contact and job placements, with especially large effects for Ukrainian refugees. Effects were broad-based—spanning age, gender, region, labor-market tightness, skill levels, and employment types—and extended to the long-term unemployed. Moreover, the gains were durable: program-induced exits were more likely to persist at three, six, and twelve months. We also find smaller but meaningful gains for other refugees, concentrated in low-skilled placements among males. Finally, we find no evidence of negative spillovers to German or other immigrant job seekers within our observation window, whether through resource reallocation or displacement.

How far should these findings travel? They apply most directly to settings akin to Germany during the study window: a comparatively well-educated Ukrainian caseload with swift work and mobility rights under Temporary Protection, and a highly mobilized integration system (nationwide PES, standardized courses, centralized monitoring). Comparable effects are most likely where (i) public employment services can rapidly scale contact intensity and mobilize caseworkers for short-run additional effort, and (ii) refugees gain prompt legal access to work and are encouraged to enter the labor market quickly. The macroeconomic backdrop also matters: the study period did not coincide with a boom; unemployment rose modestly in 2024. Detecting sizable gains in this environment suggests counseling can be effective even in softening labor markets, though magnitudes may attenuate in deep downturns and

could strengthen in tighter markets with more vacancies. Because the additional contacts were largely absorbed by existing staff, sustaining or replicating similar effects may require incremental staffing or durable operational investments.

Heterogeneity patterns caution against blanket extrapolation. For Ukrainians, effects are large and strikingly uniform across age, region, skill tier, and unemployment duration. It would be wrong, however, to infer that the program was effective only for Ukrainians: we also find meaningful gains for other refugees, although concentrated among younger men. Consistent with our IV estimates, conditional on an additional contact the exit response is stronger for other refugees than for Ukrainians. This suggests that the counseling "technology" can transfer to other male refugee groups facing similar search frictions. By contrast, the weaker response among women in the other-refugee group underscores the limits of counseling alone: the low conversion of contacts into exits likely reflects a "triple disadvantage" and structural barriers that counseling cannot easily overcome without complementary support.

Our study has several limitations. First, we rely on job-center–by-nationality-group aggregates rather than individual-level panel data, which limits our ability to study heterogeneity beyond the disaggregation by gender, age, region, prior unemployment duration, and job-skill levels reported here. Second, the study is observational. We estimate effects using a difference-in-differences design with interactive fixed effects to absorb time-invariant confounders, common shocks, and their estimated interactions; nonetheless, unobserved time-varying differences across groups may persist and could bias the estimates. Although our results are robust across a range of specifications and control groups, individual-level panels would allow finer control of potential time-varying confounders (e.g., residency status, family structure); better yet, future work should leverage experimental approaches to evaluate intensified job-search assistance for refugees (e.g., [11]). Third, our observation window spans only 23 months after the launch of the Job–Turbo, allowing us to assess short- to medium-term impacts but not longer-run outcomes; whether these gains persist beyond our sample period remains an open question.

Our findings contribute to theory by extending the relevance of employment counseling to refugee populations, who face distinct informational and structural barriers. While much prior work concerns citizens or long-term residents [24, 25, 26, 27, 28, 29, 30, 31, 34], we show that intensified counseling can improve both job-finding rates and the durability of matches for refugees, consistent with models emphasizing early institutional engagement and structured job search support.

From a policy perspective, the results suggest that early, active, and scalable employ-

ment support can be an effective and fiscally viable tool for refugee integration at scale. A marginal cost–benefit analysis (appendix G) indicates that under standard assumptions after 12 months the average savings in welfare expenditures and additional tax revenue per newly employed refugee begin to exceed program costs, with benefits accumulating thereafter. These findings stand in contrast to many integration programs with more limited impacts and challenge the prevailing "qualification-first" paradigm dominant in many European countries by showing that a pragmatic "work-first" approach—prioritizing early labor market entry after basic language training— can yield sizable and sustained gains. This is consistent with existing evidence suggesting that government policies that boost labor market access early in the integration journey are particularly impactful [6, 7, 8, 9]. However, facilitating rapid entry into the labor market and the (on-the-job) acquisition of language skills are not mutually exclusive, and how best to combine these approaches to catalyze sustainable employment in jobs matching the varied skills of refugees is an important question for future research.

Finally, an important next step is to understand when and for whom contacts are most effective. Progress will require micro data linking refugees to caseworkers and to employers so that researchers can study heterogeneity by job seeker characteristics, caseworker practices, and the match between the two. Such evidence can inform how to target counseling, which complementary services to bundle, and what operational investments are needed to sustain effects without overextending frontline staff.

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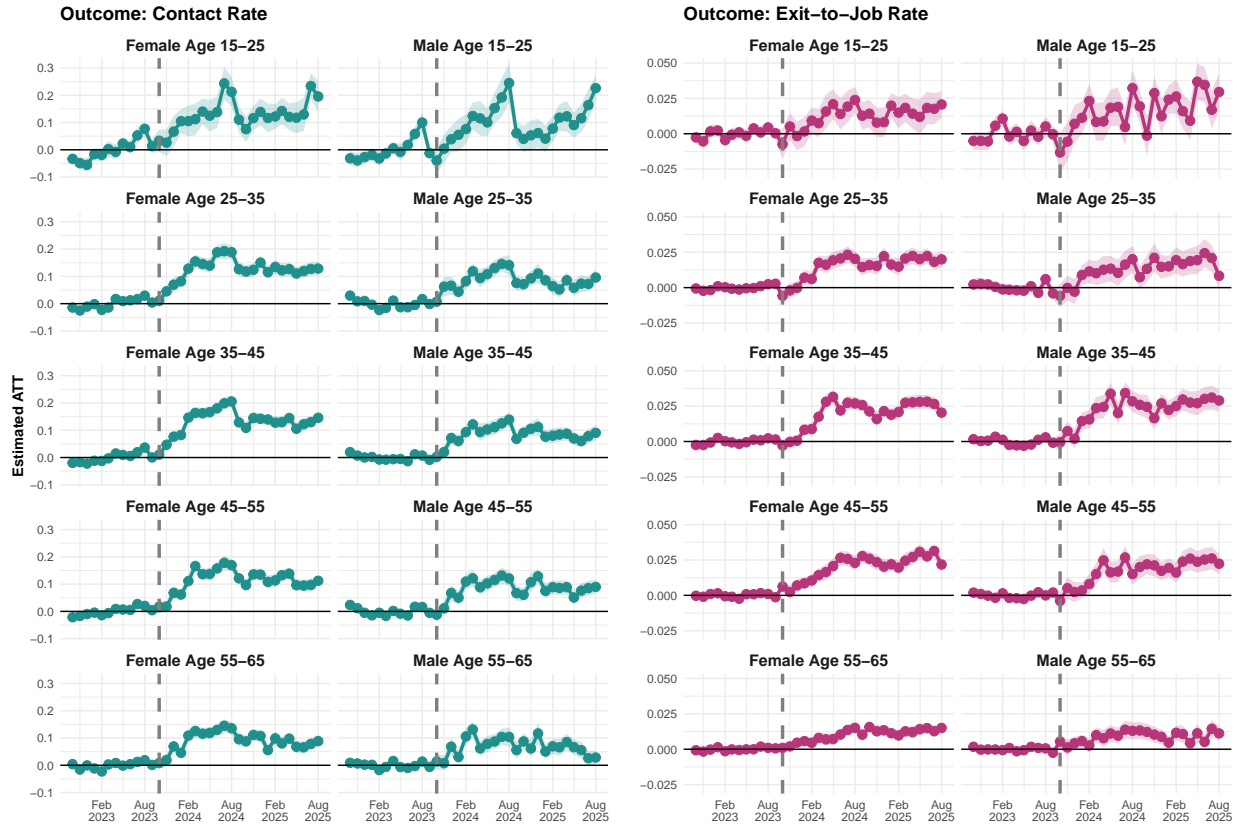
Figures and Tables

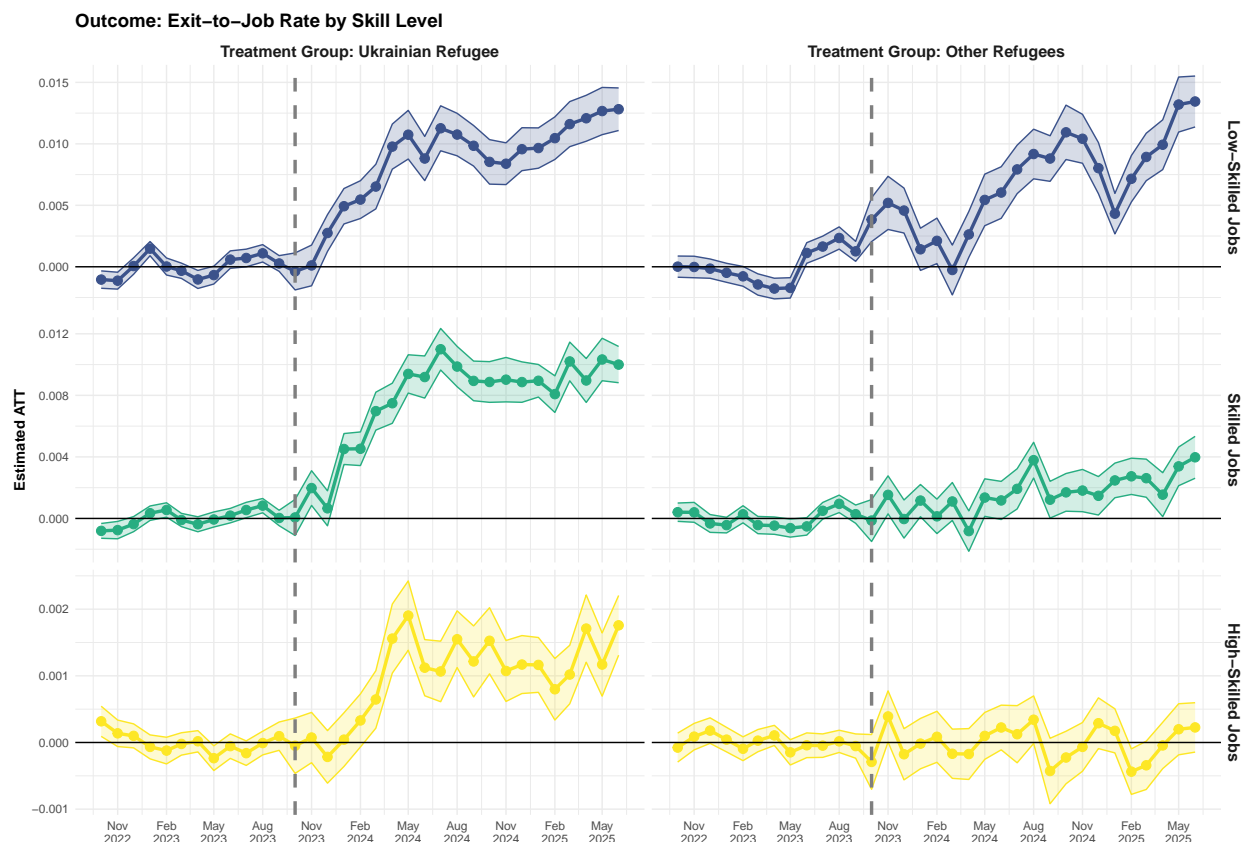Figure 1: Effects of the Job–Turbo on Contact and Exit-to-Job Rates for Ukrainian and Other Refugees
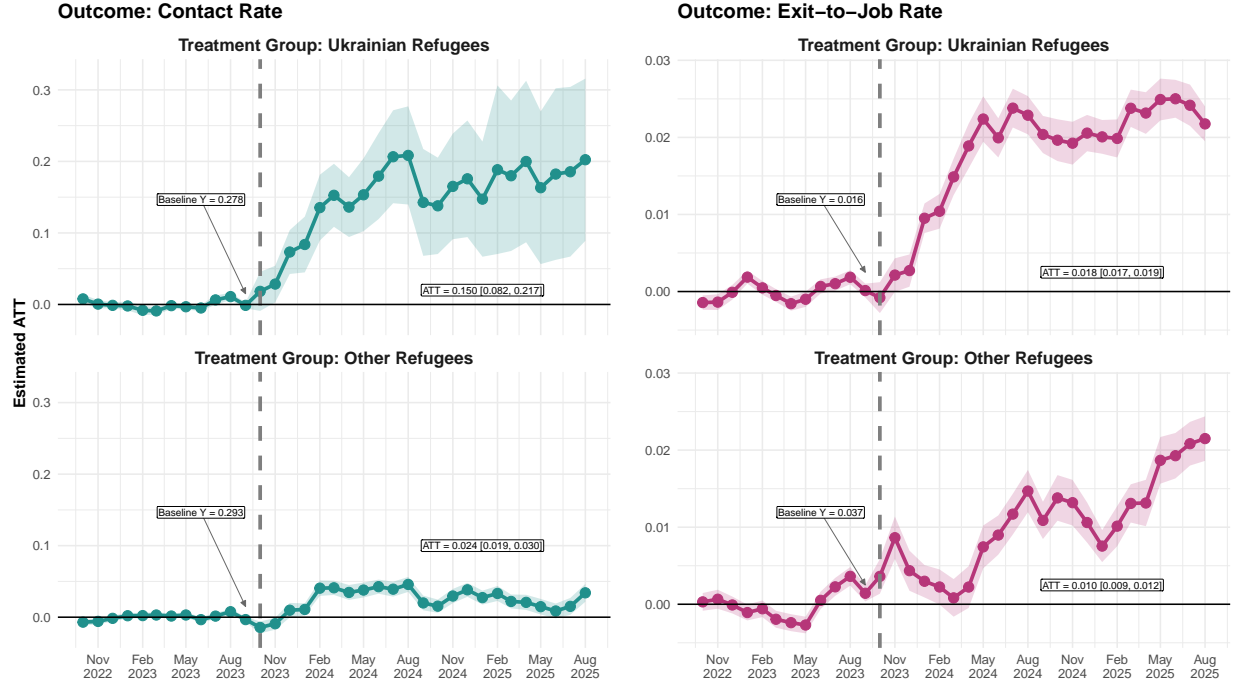
Panels report ATT estimates with 95% confidence intervals from the IFE estimator for the contact rate (left) and the exit-to-job rate (right), by refugee group. Treatment groups are unemployed Ukrainian refugees (top) and unemployed other refugees (bottom); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers. Cross-validated optimal factor counts for the IFE models (top-left to bottom-right) are $r^* = 1$, $r^* = 0$, $r^* = 0$, and $r^* = 0$. The dashed vertical line marks the launch of the Job–Turbo in October 2023. Baseline Y is the average outcome for the treatment group in September 2023. The ATT reported in each text box is the average treatment effect on the treated over the full post-treatment period with its 95% confidence interval.

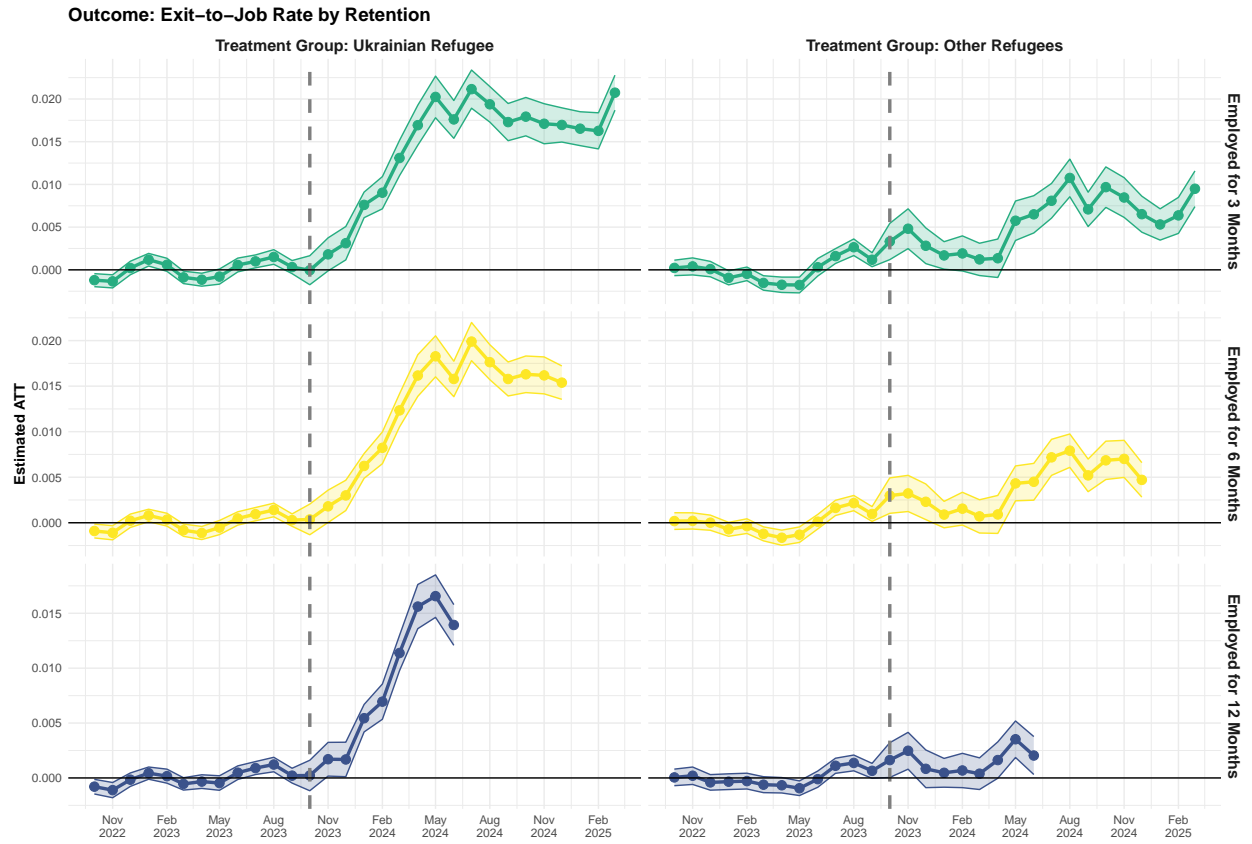Figure 2: Effects of the Job–Turbo by Gender and Age for Ukrainian Refugees

Panels report ATT estimates with 95% confidence intervals from the IFE estimator for the contact rate (left) and the exit-to-job rate (right), disaggregated by age and gender. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure 3: Effects of the Job–Turbo by Job Skill Level for Ukrainian and Other Refugees

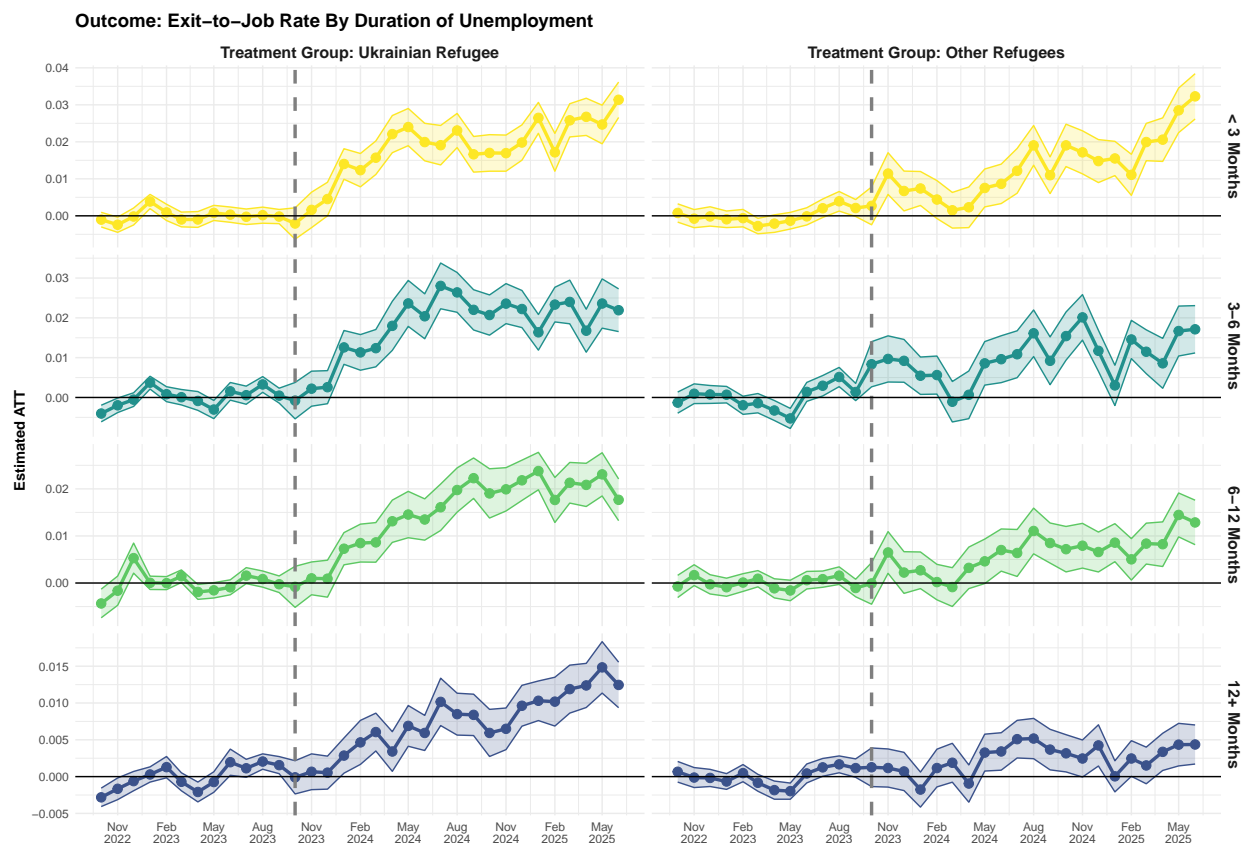

Outcome: Exit–to–Job Rate by Skill Level

Panels report ATT estimates with 95% confidence intervals from the IFE estimator for the exit-to-job rate, disaggregated by job-skill level: low-skilled (top), skilled (middle), and high-skilled (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure 4: Effects of the Job–Turbo by Job Retention for Ukrainian and Other Refugees
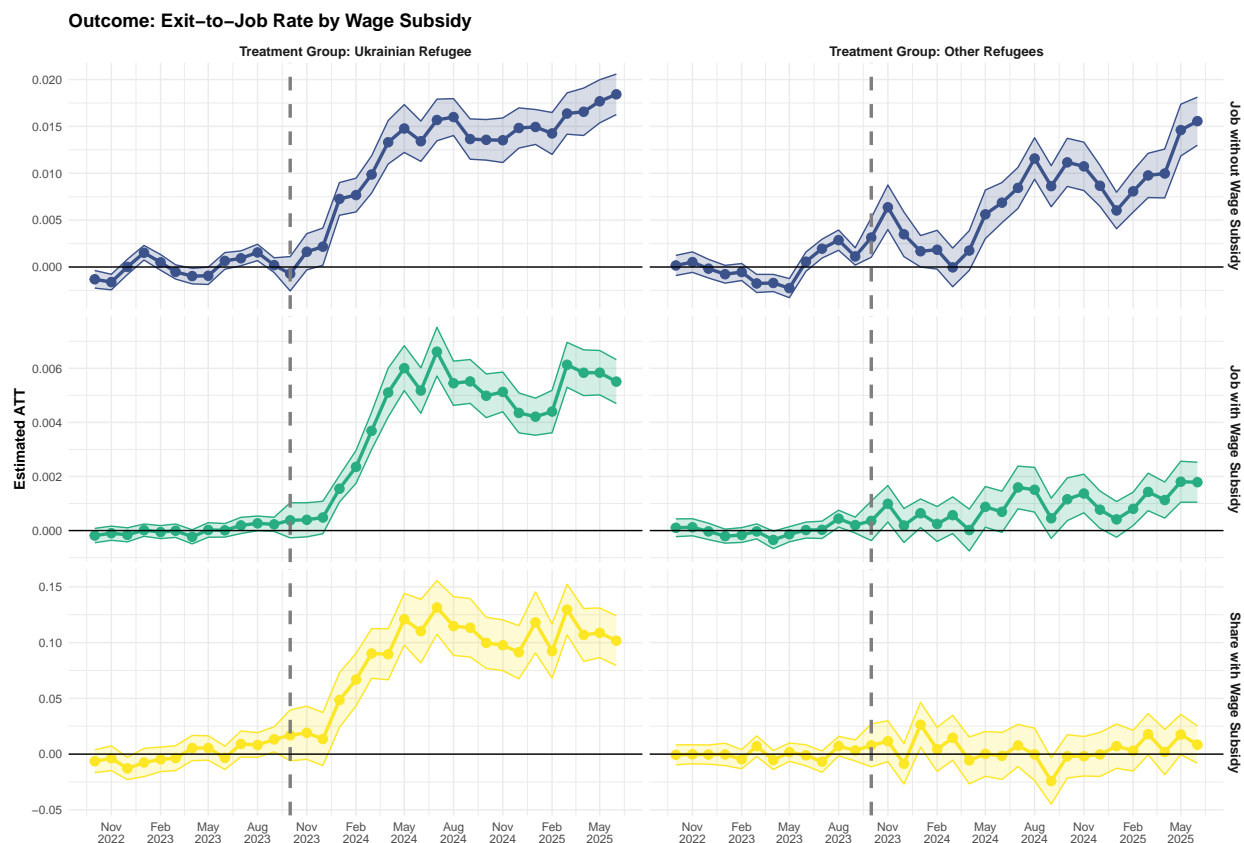

Panels report ATT estimates with 95% confidence intervals from the IFE estimator for the exit-to-job rate, conditional on minimum job-retention durations. The top panel considers exits into jobs retained at least 3 months; the middle, at least 6 months; and the bottom, at least 12 months. Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure 5: Effects of the Job–Turbo by Unemployment Duration for Ukrainian and Other Refugees

Panels report ATT estimates with 95% confidence intervals from the IFE estimator for the exit-to-job rate, disaggregated by unemployment duration. From top to bottom: under 3 months; 3 to under 6 months; 6 to under 12 months; and 12 months or more. Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure 6: Effects of the Job–Turbo by Job Type With and Without Wage Subsidies for Ukrainian and Other Refugees

Panels report ATT estimates with 95% confidence intervals from the IFE estimator for exit-to-job rates, disaggregated by job type. The top panel shows exists to jobs without wage subsidies; the middle, jobs with wage subsidies; and the bottom, the share of exits involving a wage subsidy. Treatment groups are unemployed Ukrainian refuges (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure 7: Job Center Staffing Before and After the Job–Turbo
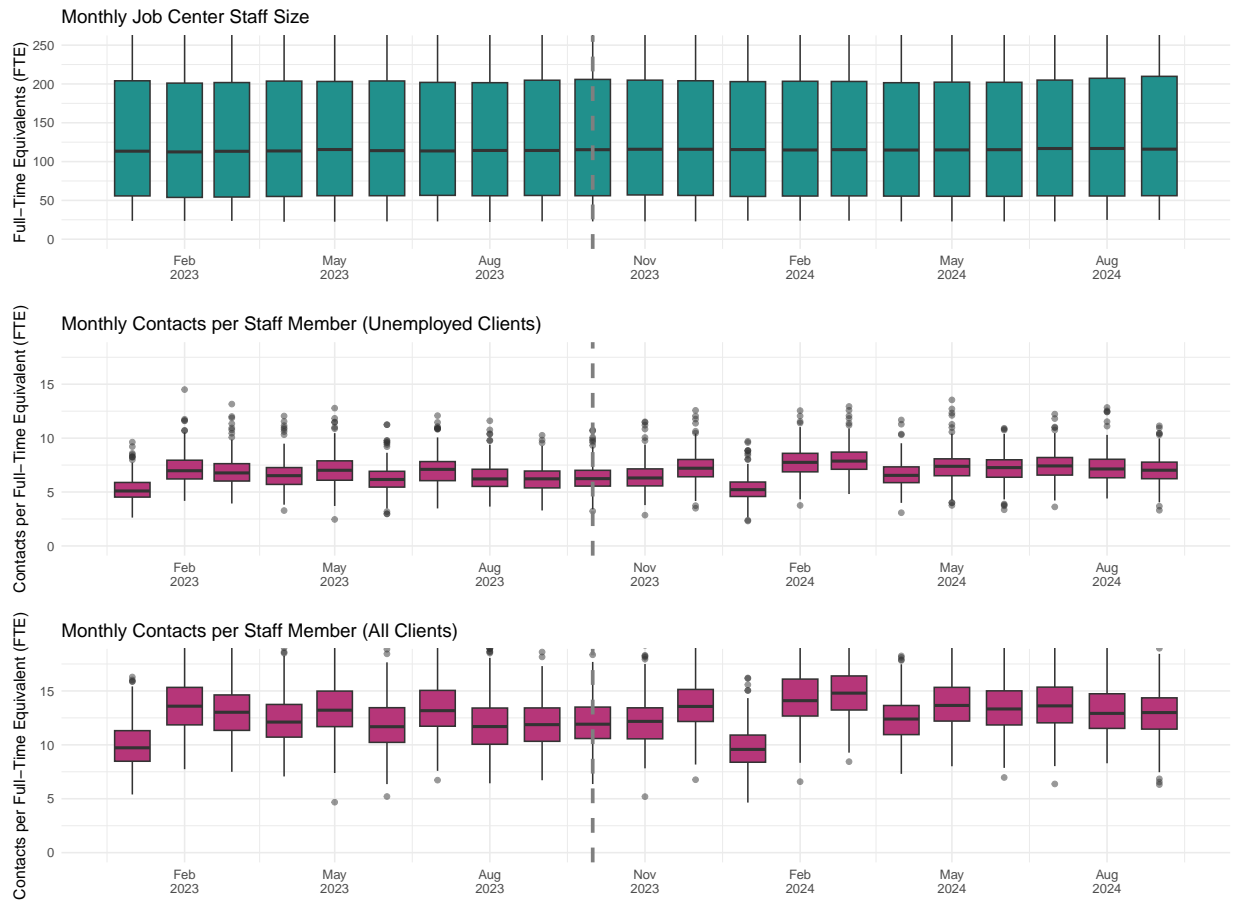
The top panel shows the monthly distribution of job-center staff size (full-time equivalents, FTE). The middle and bottom panels show the monthly distribution of contacts per FTE across job centers for unemployed clients and for all clients, respectively. Estimates use data from 300 BA-operated job centers.

Appendix

A   Author Contribution

J.H., D.H., M.M., E.V., and N.H. designed the study and performed the research; E.V. provided the data; J.H. and M.M. analyzed the data; and J.H. and D.H. drafted the manuscript with input from E.V., M.M., and N.H.

B   Conflict of Interest Declaration

The views expressed are those of E.V. alone and do not necessarily represent the positions of the Federal Employment Agency or its Statistics Department. The authors report no conflicts of interest and affirm that all data were used in accordance with applicable legal and ethical requirements, including data protection and confidentiality.

C   Data

C.1   Sample

Our main analysis focuses on the 300 job centers operated by the BA. In 103 districts, job placement services are administered by municipalities—*Optionskommunen*—which operate independently of the BA-managed system. Figure A.1 maps all job centers and shows coverage across the country.

We report supplementary results for *Optionskommunen* in Figures A.59–A.63. They are excluded from the main analysis due to missing data on counseling contacts and certain exit types, as well as uncertainty regarding their participation in the program (see below for details).

C.2   Variable Definitions

The list below provides definitions for the key variables used in the analysis.

- **Number of Unemployed Individuals**: The number of unemployed individuals for each group i in job center j during month t is defined as the total stock of registered unemployed persons. An *unemployed individual* is someone who is not employed, is actively seeking work, and is available to the labor market. Specifically, an unemployed individual is officially registered as unemployed and receives means-tested benefits under SGB II (*Bürgergeld*).

$$\text{Number of Unemployed}_{i,j,t} = \text{Stock of unemployed clients}_{i,j,t}$$

- **Contact Rate**: The contact rate for each group i (e.g., Ukrainian refugees) in job center j in month t is defined as the number of registered unemployed individuals with at least one contact in month t divided by the total stock of unemployed individuals in the previous month, regardless of contact status. Contacts capture the regular appointments between unemployed individuals and caseworkers regarding counseling and job placement. The contacts between caseworkers and their unemployed clients in a job center take place in various ways, including contacts by phone or video-call as well as face-to-face for initial interviews and advice on qualification, integration, and placement. A contact refers to the actual consultation that took place between caseworkers and unemployed clients.

$$\text{Contact Rate}_{i,j,t} = \frac{\text{Number of unemployed contacted}_{i,j,t}}{\text{Stock of Unemployed}_{i,j,t-1}}$$

  In a few instances, the stock of unemployed at certain job centers is very low, which can result in extremely large rate values. To minimize the impact of these outliers, we winsorize the rate at the 99th percentile.

- **Exit-to-Job Rate**: The exit-to-job rate is defined as the number of individuals exiting from unemployment status to a job as a share of the stock of unemployed individuals in the previous month:

$$\text{Exit-to-Job Rate}_{i,j,t} = \frac{\text{Number of Exits from Unemployment to a Job}_{i,j,t}}{\text{Stock of Unemployed}_{i,j,t-1}}$$

  This metric is widely used by agencies and in the labor economics literature as a primary measure of job-placement success. We consider exits from unemployment to jobs in the first labor market (*Erster Arbeitsmarkt*). In Germany, the first labor market refers to the regular, competitive labor market, where employment is determined by supply and demand in the economy. It excludes jobs created solely through active labor market policies, such as fully publicly subsidized positions for long-term unemployed individuals and *1-Euro-Jobs*, which provide low-wage, government-supported work designed to help individuals gain work experience.

  In a very small number of cases, the stock of unemployed individuals at certain job centers is very low, leading to extremely high exit rate values. To reduce the impact of these outliers, we winsorize all exit rates at the 99th percentile.

- **Specific Exit-to-Job Rates**: For additional analysis, we also examine specific conditional exit-to-job rates. In particular, we define the following:

  - **Exit-to-Job Rate by Gender and Age**: This rate captures the likelihood of exiting unemployment to a job, conditional on both gender and age group. It is calculated analogously to the overall exit-to-job rate, but both the numerator and

denominator are restricted to individuals within a given gender and age category. Specifically, we consider male and female individuals across the following age groups: 15–24, 25–34, 35-44, 45–54, 55–64, and 65+ years.

– **Exit-to-Job Rate by Job Skill Requirement**: This rate measures the number of individuals transitioning from unemployment to a <u>low-skilled</u>, <u>skilled</u>, or <u>high-skilled</u> job as a share of the unemployed stock in the previous month. The classification of job skill levels follows the German Classification of Occupations, which categorizes jobs based on tasks, knowledge, and required skills [53]. This classification distinguishes four levels of occupational complexity:

  i) Unskilled tasks: Low-complexity routine work requiring no formal training.
  ii) Skilled tasks: Technical work requiring at least two to three years of vocational training.
  iii) Complex tasks: Specialized work requiring at least a master craftsman or technician qualification.
  iv) Highly complex tasks: Work requiring at least a higher education degree.

For our analysis, unskilled tasks are classified as "low-skilled" jobs, skilled tasks are classified as "skilled" jobs, and complex tasks and highly complex tasks are combined into a single class as "high-skilled" jobs. Note that the last month of data (August 2025) is missing for this outcome due to delays in data availability.

– **Exit-to-Job Rate by Employment Type**: This rate measures the number of individuals transitioning from unemployment to <u>regular</u> or <u>marginal</u> employment as a share of the unemployed stock in the previous month.

Regular employment is defined as employment in the first labor market with a job that is subject to mandatory social security contributions (*sozialversicherungspflichtige Beschäftigung*). In this type of employment, both the employer and the employee contribute a portion of the gross salary to the German social security system, covering health, pension, unemployment, and long-term care insurance.

The first labor market is defined as the regular, competitive labor market in the free economy, which also takes into account employment-related assistance (e.g. wage subsidy).

Marginal employment is defined as employment in the first labor market that is exclusively low-paid employment (*ausschließlich geringfügig entlohnte Beschäftigung*). These are often referred to as Mini-Jobs where regular earnings do not exceed the marginal earnings threshold, which is set at 556 Euros per month as of 2025. Marginal employment is usually exempt from most social security contributions.

– **Exit-to-Job Rate Conditional on Retention and Share of Exits-to-Job with Retention**: We analyze two complementary outcomes related to the stability of employment following a job placement.

The first outcome is the *exit-to-job rate conditional on retention*, which measures the number of individuals who exit unemployment into regular employment and

remain continuously employed for a minimum duration—specifically, at least 3, 6, or 12 months—expressed as a share of the unemployed stock in the previous month. This outcome captures whether the Job-Turbo program increased sustainable job placements, rather than short-term or unstable employment.

The second outcome is the *share of exits-to-job with retention*, defined as the proportion of individuals who, after exiting unemployment into regular employment, remain employed for at least 3, 6, or 12 months. The denominator is the total number of exits into regular employment. This measure captures the quality of placements by indicating what share of job placements result in sustained employment. A declining retention share may signal a shift toward more precarious or short-lived job matches.

Both outcomes focus exclusively on exits into *regular employment*, defined as jobs subject to mandatory social security contributions in the first labor market. Exits into marginal employment and subsidized positions are excluded to ensure consistency and comparability in assessing job quality and long-term labor market integration.

– **Exit-to-Job Rate Conditional on Duration of Unemployment**: This rate measures the likelihood of transitioning from unemployment to employment, conditional on the length of the unemployment spell. It is calculated in the same manner as the overall exit-to-job rate, but both the numerator and denominator are limited to individuals within a specific unemployment duration category. We consider the following groups: less than 3 months (short-term unemployed), 3 to under 6 months, 6 to 12 months (medium-term unemployed), and more than 12 months (long-term unemployed).

– **Exit-to-Job Rate by Wage Subsidy**: This rate measures the number of individuals transitioning from unemployment to jobs <u>with</u> or <u>without</u> a wage subsidy as a share of the unemployed stock in the previous month.

In this context, we consider jobs in the first labor market, distinguishing between those supported by a wage subsidy and those that are not. In Germany, employers can apply for wage subsidies (commonly known as *Eingliederungszuschuss*) when hiring individuals with reduced employability due to various factors, including long-term unemployed or job seekers who lack the necessary skills or experience.

The subsidy typically covers a portion of the employee's wage (usually 50%) for a fixed period (usually 12 months), with both the percentage and duration depending on the difficulty of placement. Employers receiving the subsidy must commit to retaining the employee after the subsidy period ends, generally for a period equal to the subsidy duration.

A second, distinct form of wage subsidy is the *Einstiegsgeld*, which is paid directly to job seekers rather than employers. This support is intended to incentivize recipients of unemployment benefits to take up employment or self-employment. The amount and duration of the *Einstiegsgeld* are determined at

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the discretion of the caseworker and depend on individual factors such as household composition and the perceived sustainability of the employment. Unlike the *Eingliederungszuschuss*, the *Einstiegsgeld* does not impose retention requirements on employers and is generally intended as a temporary supplement to smooth the transition into regular employment.

- **Rates for Exits to Non-Job Outcomes**: We also consider exit rates from unemployment to non-job outcomes. In this case, the numerator is restricted to exits from unemployment to non-job outcomes. In particular, we define the following categories:

  - **Exit Rate to Leaving the Labor Force**: This includes all exits from unemployment where the individual leaves the labor force and is no longer registered as a job seeker or unemployed.

  - **Exit Rate to Apprenticeship**: This includes all exits from unemployment where the individual enters an apprenticeship (so-called *Azubi*). Apprenticeships refer to dual vocational training programs that combine on-the-job training at a company with theoretical education at a vocational school. They typically last between 2 and 3.5 years and are a key part of Germany's workforce development system, preparing young professionals for skilled trades and various industries.

  - **Exit Rate to Training**: This includes all exits from unemployment to a training program. Training programs include various active labor market training programs and integration courses (*Integrationskurse*), which provide language training and instruction on understanding German culture and laws.

  - **Exit Rate to Other Non-Job Statuses**: Exits from registered unemployment for reasons other than taking up a job, including termination of benefit eligibility, administrative corrections (e.g., already employed), and other/unknown reasons.

- **Vacancy-to-Unemployment Ratio**: The Vacancy-to-Unemployment Ratio measures labor market tightness by comparing the number of job vacancies to the stock of job seekers in the previous month. It is defined as:

$$\text{Vacancy-to-Unemployment Ratio}_{i,j,t} = \frac{\text{Number of Job Vacancies}_{i,j,t}}{\text{Stock of Job Seekers}_{i,j,t-1}}$$

A higher ratio indicates a tighter labor market, where job openings exceed the number of job seekers, whereas a lower ratio suggests a looser labor market with more job seekers relative to vacancies.

- **Staff FTE**: Staff full-time equivalents (FTE) measure total staffing at a job center in a given month, converting full- and part-time hours into full-time equivalents. Starting in 2025, these data are available only on a quarterly basis; consistent with BA reporting, we assign the quarterly value to each month within the corresponding quarter.

- **Unemployed-to-Staff FTE Ratio**: The unemployed-to-staff FTE ratio captures the workload of staff by comparing the number of unemployed clients to available staff capacity. It is defined as:

$$\text{Unemployed-to-Staff FTE Ratio}_{j,t} = \frac{\text{Total Number of Unemployed}_{j,t}}{\text{Caseworker FTE}_{j,t}}$$

A higher ratio indicates that there are more registered unemployed per staff, suggesting a higher workload and potentially lower capacity for individualized support. Conversely, a lower ratio reflects fewer unemployed per staff, implying greater capacity for personalized attention.

- **Employer-Specific Teams**: Employer-Specific Teams indicate whether a job center has a dedicated team focused on engaging with employers to facilitate job placements. These teams aim to improve job matching by maintaining close relationships with local businesses and understanding labor market needs. The variable is defined as a binary indicator and measured as of June 2024:

$$\text{Employer-Specific Team}_j = \begin{cases} 1, & \text{if job center } j \text{ has an employer-specific team} \\ 0, & \text{otherwise} \end{cases}$$

- **Refugee-Specific Teams**: Refugee-Specific Teams indicate whether a job center has a dedicated team focused on supporting refugees in their job search and integration into the labor market. These teams provide specialized counseling, skills assessments, and job placement services tailored to refugees' needs. The variable is defined as a binary indicator and measured as of June 2024:

$$\text{Refugee-Specific Team}_j = \begin{cases} 1, & \text{if job center } j \text{ has a refugee-specific team} \\ 0, & \text{otherwise} \end{cases}$$

- **Number of Job Center Clients**: The number of job center clients for each group i (e.g., Ukrainian refugees) in job center j during month t is defined as the total stock of registered clients, regardless of their unemployment or contact status. This is a broader measure that includes the entire pool of clients served by a job center, not only those registered as unemployed.

  A *client* is anyone registered as a job seeker at a job center and eligible for counseling and job-placement services. Most clients receive Citizen's Benefit (*Bürgergeld*), the basic income support for unemployed individuals and low-income earners, though some may be registered job seekers who are not receiving benefits—for example, during waiting periods or transitional phases.

Formally, this measure includes three categories of clients: unemployed (*Arbeitslose*), who are individuals officially registered as unemployed; advice seekers (*Ratsuchende*), who are individuals seeking information or advice without actively searching for work; and job seekers (*Arbeitssuchende*), who are individuals formally registered as seeking work but not classified as unemployed under SGB II.

$$\text{Number of Clients}_{i,j,t} = \text{Total stock of clients}_{i,j,t}$$

- **Client-to-Staff FTE Ratio**: The client-to-staff FTE ratio captures the workload of staff by comparing the number of clients to available staff capacity. It is defined as:

$$\text{Client-to-Staff FTE Ratio}_{j,t} = \frac{\text{Total Number of Clients}_{j,t}}{\text{Caseworker FTE}_{j,t}}$$

A higher ratio indicates that there are more clients per staff, suggesting a higher workload and potentially lower capacity for individualized support. Conversely, a lower ratio reflects fewer clients per staff, implying greater capacity for personalized attention.

- **Refugee Client Share**. The share of job-center clients who are refugees (i.e., Ukrainian refugees or other refugees). For job center j at time t:

$$\text{Refugee Client Share}_{j,t} = \frac{\text{Clients from Ukraine or other refugee countries}_{j,t}}{\text{Total clients}_{j,t}} .$$

Higher values indicate a larger refugee client share, which may imply greater Job-Turbo–related workload for caseworkers.

D   Descriptive Statistics

Table A.2 presents descriptive statistics for the full sample of 300 BA operated job centers, separately for each of the four groups and the overall sample. All values are calculated as averages over the 2023 pre–Job-Turbo period, from January to September 2023.

Table A.3 reports descriptive shares by gender, age group, highest school-leaving certificate, and vocational/academic qualification for the population of registered unemployed in each of the four groups, using the full sample of 300 BA-operated job centers. Values are pooled over the 2024 calendar year, when education reporting for Ukrainian refugees improved.

Ukrainian refugees have a higher female share than the other groups. Both refugee groups are somewhat younger than Germans and other immigrants. In terms of schooling, Ukrainians exhibit the highest attainment while other refugees have the lowest. A similar pattern holds for qualifications: Ukrainians show much higher rates of vocational/academic credentials (especially academic degrees) and lower rates of no qualification, whereas other

refugees display the opposite pattern; Germans are characterized by a comparatively high share of vocational training.

Figure A.2 shows descriptive trends in unemployed, contacts rates, and exit-to-job rates. Panels A and B of Figure A.2 show the monthly number and share of unemployed by group, respectively. Germans are the largest group, followed by other immigrants, other refugees, and Ukrainian refugees. The total number of Ukrainian unemployed rose to around 175,000 in mid-2022 after the Russian invasion.

Panel C displays monthly contact rates. Before the Job-Turbo, all groups had similar contact rates (27–29%). Post-launch, rates rose sharply for Ukrainian refugees and moderately for other refugees, but remained stable for the control groups (other immigrants and Germans).

Panel D presents exit-to-job rates. Pre-treatment, rates were highest for other refugees and other immigrants, and lowest for Ukrainian refugees. After the Job-Turbo, exit rates increased markedly for both refugee groups, but not for the control groups. These patterns suggest initial evidence that the Job-Turbo program had a positive impact on both contact and exit-to-job rates for its target populations.

E   Interactive Fixed Effects Cross-validation procedure

We implement the IFE estimator using the `fect` package [68] in `R` [69]. Here we describe the leave-one-out cross-validation procedure for selecting the number of factors in the IFE model. Formally, the steps are as follows (suppressing the j subscript for simplicity):

1. **Initialization.** Fix a candidate number of factors r. Estimate the IFE model using the control group data $\{Y_i, X_i\}_{i \in D_i=0}$ to obtain $\hat{\beta}$ and estimated factors $\hat{F}$.

2. **Cross-validation loop.** For each pretreatment period $s \in \{1, \dots, T_0\}$, hold out all treated units at time s:

   (a) *Factor loadings estimation.* Using the remaining $T_0 - 1$ pretreatment periods, run OLS regressions to estimate factor loadings for each treated unit $i \in \mathcal{T}$:

   $$\hat{\lambda}_{i,-s} = (F_{-s}^{0\prime} F_{-s}^0)^{-1} F_{-s}^{0\prime} (Y_{i,-s}^0 - X_{i,-s}^0 \hat{\beta}), \quad \forall i \in \mathcal{T},$$

   where the subscript "$-s$" denotes exclusion of period s.

   (b) *Prediction.* Predict the held-out outcome at time s for treated unit i:

   $$\hat{Y}_{is}(0) = X_{is}^0 \hat{\beta} + \hat{\lambda}_{i,-s} \hat{f}_s,$$

   and record the prediction error

   $$e_{is} = Y_{is}(0) - \hat{Y}_{is}(0).$$

3. **Model evaluation.** Compute the mean squared prediction error (MSPE) for the given r:

$$MSPE(r) = \frac{1}{T_0} \sum_{s=1}^{T_0} \sum_{i \in \mathcal{T}} e_{is}^2.$$

4. **Repetition.** Repeat Steps 1–3 for different values of r. We search between 0 and 4 factors.

5. **Selection.** Choose the number of factors r^* that minimizes the MSPE.

This procedure exploits the pretreatment periods of treated units as a natural validation sample. It uses information from never-treated controls to estimate factors, then evaluates predictive accuracy by holding out treated outcomes one period at a time. The selected r^* balances fit and parsimony by minimizing out-of-sample prediction error.

F   Additional Results

- *Main Effect Estimates*: Figure A.3 presents ATT estimates from the IFE models for the contact rate and the exit-to-job rate for unemployed Ukrainian and other refugees, using unemployed Germans as the alternative control group. These estimates closely resemble those in Figure 1 in the main text, where other immigrants serve as the control group. The notable difference is a smaller contact-rate effect for Ukrainian refugees: 8.5 percentage points (95% CI: [4.2, 12.9]).

  Tables A.4 and A.5 report the corresponding ATT estimates from the IFE models for both outcomes across all treatment–control comparisons: (i) unemployed Ukrainian refugees vs. unemployed other immigrants; (ii) unemployed Ukrainian refugees vs. unemployed Germans; (iii) unemployed other refugees vs. unemployed other immigrants; and (iv) unemployed other refugees vs. unemployed Germans.

- *Estimating the Absolute Number of Contacts and Exits to Employment*: We translate the ATT estimates into absolute counts in two steps. First, for each job center and treatment group, we record the number of unemployed clients in September 2023 (the last pre-implementation month). Second, for each of the 23 post-launch months (October 2023 through August 2025), we multiply the corresponding dynamic ATTs from the IFE models (see Tables A.4 and A.5) by the September 2023 unemployed-client stock to obtain the monthly increase. Summing across months and job centers yields the total number of additional contacts. We apply the same procedure to estimate the total number of additional exits to employment.

  We perform this aggregation for the 300 BA-operated job centers in the main sample. For the cost–benefit analysis, we additionally aggregate exits for the 104 municipally managed job centers (*Optionskommunen*), for which contact data are unavailable.

- *Main Effect Estimates from Two-Way Fixed Effects (TWFE) Imputation Estimator*: Figures A.4 and A.5 presents the ATT estimates from the TWFE imputation estimator proposed in [42, 40]. The results align with those from the IFE estimator. This is expected given that even with the IFE mostly zero or only one factor are selected by the cross-validation.

- *Main Effect Estimates from Matrix Completion (MC) Model*: Figures A.6 and A.7 presents the ATT estimates from the Matrix Completion (MC) model proposed by [44]. The results align with those from the IFE estimator.

- *Effect Estimates by Job-Center Size*: Figures A.8–A.11 present ATT estimates from the IFE models for the contact rate and the exit-to-job rate. Job centers are grouped into terciles by their average total number of unemployed persons (summing across the four groups) during the pre-treatment period (January–September 2023). The median unemployed counts are 946 in the low tercile, 2,560 in the middle tercile, and 6,829 in the high tercile.

- *Placebo Tests*: We conduct a battery of placebo tests where we simulate hypothetical scenarios in which the Job-Turbo intervention is assumed to have started before its actual implementation. Specifically, we re-estimate ATT effects using five different placebo periods, ranging from one to five months prior to the true program onset. This strategy serves as a falsification check by examining whether sizable treatment effects are spuriously detected when no intervention occurred.

  Figures A.12 and A.13 present placebo estimates for contact and exit-to-job rates among unemployed Ukrainian refugees, using unemployed other immigrants as the control group. Figures A.14 and A.15 replicate the analysis using unemployed Germans as the secondary control group. The corresponding figures for the unemployed other refugee group are shown in Figures A.16 through A.19.

  Across all specifications, placebo ATT estimates remain consistently and substantially smaller than their corresponding post-treatment estimates. This discrepancy is particularly striking for the exit-to-job rate among Ukrainian refugees. Using unemployed other immigrants as the control group and the most conservative placebo window of five months, the estimated placebo ATT for exit-to-job rates is only an insignificant 0.1 percentage points (95% CI: $[-0.1, 0.2]$), compared with a post-treatment ATT of 1.8 percentage points (95% CI: $[1.7, 2.0]$)—a treatment effect roughly 18 times larger. When the placebo window is shortened to one month, the placebo ATT falls to 0.0 percentage points (95% CI: $[-0.2, 0.2]$) while the post-treatment ATT remains 1.8 percentage points (95% CI: $[1.7, 1.9]$), yielding a ratio exceeding 50:1.

  Mild pre-trends appear in contact-rate outcomes for Ukrainian refugees and in exit-to-job outcomes for other refugees, particularly when the placebo window is extended, but the placebo ATTs remain well below their post-treatment counterparts. For example, among Ukrainian refugees (using unemployed other immigrants as the control group)

and a five-month placebo window, the placebo ATT for contact rates is 4.1 percentage points (95% CI: $[3.3, 5.0]$), compared with a post-treatment ATT of 13.4 percentage points (95% CI: $[12.2, 14.7]$), a ratio of roughly 3.3:1. With a one-month placebo window, the placebo ATT is effectively zero (0.0 percentage points, 95% CI: $[-2.2, 2.2]$) while the post-treatment ATT is 15 percentage points (95% CI: $[8.3, 21.6]$), yielding a ratio exceeding 150:1.

For other refugees, again using unemployed other immigrants as the control group, a five-month placebo window produces a placebo ATT for exit-to-job rates of 0.2 percentage points (95% CI: $[0.0, 0.3]$), versus a post-treatment ATT of 1.1 percentage points (95% CI: $[1.0, 1.3]$), a ratio of about 5.5:1. With a one-month placebo window, the placebo ATT remains low (0.3 percentage points, 95% CI: $[0.1, 0.5]$) while the post-treatment ATT stays at 1.1 percentage points (95% CI: $[0.9, 1.2]$), for a ratio of roughly 3.7:1.

We also note that the tests with long placebo windows may be somewhat too conservative. In the most extreme case—with six placebo periods—only six pre-treatment periods remain for the model to learn the latent factors, which can inflate the placebo estimates.

- *Effect Estimates by Gender and Age*: Figures A.21, A.20, and A.22 present ATT estimates from the IFE models for the contact rate and the exit-to-job rate, disaggregated by gender and age group.

- *Effect Estimates by Region*: Figures A.23, A.24, A.25, and A.26 present ATT estimates from IFE models for the contact rate and the exit-to-job rate, by region. Job centers are stratified into ten *Regionaldirektionsbezirke*, with the following numbers of centers: Baden-Württemberg (33), Bayern (83), Berlin-Brandenburg (23), Hessen (10), Niedersachsen/Bremen (31), Nord (22), Nordrhein-Westfalen (35), Rheinland-Pfalz/Saarland (29), Sachsen (8), and Sachsen-Anhalt/Thüringen (26).

- *Effect Estimates by Labor-Market Tightness*: Figures A.27, A.28, A.29, and A.30 present ATT estimates from IFE models for the contact rate and the exit-to-job rate by labor-market tightness. Job centers are grouped into terciles by their pre-treatment vacancy-to-unemployment ratio (VUR), computed from regional labor-market data for each center's location and averaged over January–September 2023; higher terciles indicate tighter markets. The mean pre-treatment VURs are 0.18 (low), 0.29 (middle), and 0.62 (high).

- *Effect Estimates on the Exit-to-Job Rate by Job-Skill Level*: Figure A.31 reports ATT estimates with 95% confidence intervals from the IFE estimator for exit-to-job rates, disaggregated by job-skill level: low-skilled (top), skilled (middle), and high-skilled (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the alternative control group is unemployed Germans.

- *Effect Estimates on the Exit-to-Job Rate by Employment Type*: Figure A.32 reports ATT estimates with 95% confidence intervals from IFE models for exit-to-job rates, disaggregated by employment type: regular employment (top) and marginal employment (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Figure A.33 presents the corresponding estimates using unemployed Germans as the alternative control group.

- *Effect Estimates on the Exit Rate to Non-Job Outcomes*: Figure A.34 reports ATT estimates with 95% confidence intervals from IFE models for exit rates to non-job outcomes—leaving the labor force (top row), apprenticeship (second row), training (third row), and other status (bottom row). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Figure A.35 presents the corresponding estimates using unemployed Germans as the alternative control group.

- *Effect Estimates by Job Retention*: We study two outcomes: (i) exit-to-job rates *conditional on minimum retention* and (ii) the *share of exits that are retained*, a proxy for placement quality (a decline would lower this share).

  Figure A.36 reports ATT estimates with 95% CIs from IFE models for exits into regular jobs retained at least 3, 6, and 12 months (shown only where post-treatment data permit), separately for unemployed Ukrainian refugees (left) and other refugees (right), using unemployed Germans as the alternative control.

  Figures A.37 and A.38 report ATT estimates for the *share* of exits to regular jobs that are retained at least 3, 6, and 12 months (again, shown only where data permit), separately by group, using unemployed other immigrants (Figure A.37) or unemployed Germans (Figure A.38) as controls.

- *Effect Estimates by Duration of Unemployment*: Figure A.39 reports ATT estimates with 95% confidence intervals from IFE models for the exit-to-job rate by unemployment duration. From top to bottom: under 3 months (short-term), 3 to under 6 months, 6 to under 12 months (medium-term), and 12 months or more (long-term). Estimates use unemployed Germans as the alternative control group.

- *Spillover Effects*

  - *Regression-Based Tests:* We examine whether the Job-Turbo program produced spillover effects on non-refugee job seekers—specifically German nationals and other immigrant groups—through two potential mechanisms: (1) *resource reallocation*, where staff might shift effort toward refugees, and (2) *competition-induced displacement*, where heightened refugee job search could crowd out other job seekers. The core hypothesis is that any negative externalities would be more pronounced in job centers with a larger pre-treatment share of refugee clients. If such

spillovers occurred, we would expect the relationship between key labor-market outcomes for Germans and other immigrants and the pre-treatment refugee client share to become more negative after the program's rollout.

For example, if caseworkers were required to increase contacts with refugees and diverted attention from German clients, contact rates for Germans should decline more sharply in job centers with higher refugee shares in the post-Job-Turbo period. Similarly, if intensified refugee job search crowded out Germans from employment, the slope of the relationship between German exit-to-job rates and refugee client share should steepen negatively in the post-treatment period.

To test these possibilities, we estimate separate regressions for Germans and other immigrants for each outcome. Each model includes an interaction between the pre-treatment refugee share and a post-treatment indicator, as well as interactions between the post-treatment indicator and other pre-treatment job-center characteristics: total clients (size), vacancy-to-unemployed ratio (labor-market tightness), client-to-staff FTE ratio (workload), and baseline contact and exit-to-job rates (performance). All specifications include job-center and year-month fixed effects; the main effect of the post-treatment indicator is absorbed by these fixed effects. Moderators are averaged over the January–September 2023 pre-treatment period, and standard errors are clustered at the job-center level.

The coefficient of interest is the interaction between the refugee share and the post-treatment indicator, capturing any change in the slope of the outcome–refugee-share relationship following the Job-Turbo rollout.

Table A.9 reports the results. Columns 1–5 present estimates for German job seekers, covering the contact rate, overall exit-to-job rate, and exits into low-, skilled, and high-skilled jobs. Across all outcomes, the interaction coefficients are small and statistically indistinguishable from zero; for exit-to-job rates the signs are, if anything, slightly positive. Columns 6–10 provide the corresponding estimates for other immigrants, where the interaction coefficients are slightly negative but again close to zero and not statistically significant.

These findings indicate no meaningful change in outcomes for Germans or other immigrants in job centers with higher refugee shares, suggesting that the additional attention devoted to refugees under Job-Turbo did not come at the expense of other job seekers.

– *Graphical Analysis:* To complement the regressions, we focus on settings where spillover effects should be most visible—job centers that, prior to the Job-Turbo rollout, combined a high refugee share with signs of limited capacity or weak labor demand.

Resource reallocation. We test whether contact rates for non-refugee job seekers declined more in centers with both a high pre-Job-Turbo refugee share and a high client-to-staff FTE ratio, an indicator of heavy caseloads. Figure A.40 shows binned scatterplots of the change in contact rates for German job seekers

(left) and other immigrants (right) after the program launch. The x-axis shows the pre-program refugee share, and rows correspond to terciles of the client-to-staff ratio. If resources had been diverted to refugees without added staffing, we would expect a negative slope—especially in the bottom row representing centers with the highest workloads. Instead, the slopes are essentially flat, indicating no evidence of resource reallocation.

A complementary visualization in Figure A.41 plots changes in contact rates across a two-dimensional grid of refugee share and client-to-staff ratio. Under the resource-reallocation hypothesis, the upper-right corner—centers with both high refugee density and heavy caseloads—should display the largest negative changes. Yet the heatmaps reveal no such pattern: most tiles in this region show neutral or slightly positive changes, with no cluster of adverse outcomes.

Displacement. We next examine whether exit-to-job rates for non-refugees declined more in centers with a high refugee share and low vacancy-to-unemployed ratio—i.e., areas of weak labor demand. Figure A.42 presents binned scatterplots of changes in exit-to-job rates for Germans by job type. If refugee job placement crowded out others, we would expect a negative slope, particularly in the top row representing slack labor markets. Instead, the relationships are flat across all four exit-to-job measures. The results are similar for other immigrants, as shown in Figure A.43.

Figure A.44 provides a two-dimensional view of changes in exit-to-job rates for German job seekers across the joint distribution of refugee share and vacancy-to-unemployed ratio. Under the displacement hypothesis, the lower-right region—where high refugee presence intersects with weak labor demand—should show more negative changes. Yet no consistent concentration of negative values appears. For other immigrants, Figure A.45 shows a similarly neutral pattern: only a few isolated pockets of small negative changes emerge, mostly in low-skilled jobs, with no consistent clustering.

Overall, these descriptive analyses reinforce the regression-based findings: there is no systematic evidence that intensified refugee services reduced contact or employment outcomes for German or other immigrant job seekers.

- *Effect Estimates on the Exit-to-Job Rate by Job Type (With and Without Wage Subsidies)*: Figure A.46 reports ATT estimates with 95% confidence intervals from IFE models for exit-to-job rates, split into jobs with wage subsidies (top) and without wage subsidies (middle); the bottom panel shows the share of exits that are subsidized. The figure uses unemployed Germans as the alternative control group. Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right). Results are similar to those using unemployed other immigrants as the main control group, with one notable difference: we find a small but statistically significant increase in the share of subsidized exits for other refugees.

- *Sanctions as a Mechanism*: Figure A.47 shows the distribution of sanction rates across the 300 BA-operated job centers, by group and period, for the six months before and after the onset of the Job-Turbo program. The sanction rate is calculated as the stock of individuals with active sanctions divided by the total number of unemployed individuals receiving benefits. Notably, the sanction rate for Ukrainian refugees is extremely low and remains nearly unchanged before and after the program's introduction. For example, in the pre-treatment period, the 75th percentile of the sanction rate is zero, indicating that in 75% of job center-months, not a single benefit-receiving Ukrainian refugee received a sanction. In the post-treatment period, the 75th percentile increases only slightly to 0.0015, meaning that in 75% of job center-months, fewer than 0.15% of benefit-receiving Ukrainian refugees were sanctioned. Sanction rates for other groups are somewhat higher but remain very low overall, and similarly show little change across the pre- and post-treatment periods. These patterns suggest that increased use of sanctions is unlikely to explain the observed increases in exits to employment.

- *Effect Estimates by Client-to-Staff FTE Ratio*: Figures A.48, A.49, A.50, and A.51 present ATT estimates from IFE models for the contact rate and the exit-to-job rate, disaggregated by the client-to-staff FTE ratio. Job centers are grouped into terciles by their pre-treatment client-to-staff FTE ratio (clients per full-time equivalent), averaged over January–September 2023. Mean ratios in the low, middle, and high terciles are 43.5, 50.7, and 58.0, respectively. The overall mean is 50.7 (SD 6.6), indicating limited heterogeneity in staffing relative to client volume.

- *Effect Estimates by Refugee- and Employer-Specific Teams*: Figures A.52, A.53, A.54, and A.55 present ATT estimates from IFE models for the contact rate and the exit-to-job rate, stratified by whether a job center had a refugee-specific team for caseworkers and/or an employer-specific team. Team data are measured as of June 2024. Of the 300 BA-operated job centers, 79 had an employer-specific team, 141 a refugee-specific team, 48 both, and 118 neither.

- *Effects of Contacts on the Exit-to-Job Rate.* We estimate the return to counseling contacts for exits to jobs using an instrumental-variables design. Specifically, we run two-way fixed-effects regressions of the exit-to-job rate on the contact rate and instrument the contact rate with the treatment indicator for the rollout of the *Job-Turbo* among the treated nationalities (Ukrainians and other refugees). All specifications include job-center-by-group and month fixed effects, and standard errors are clustered at the job-center level. Table A.6 reports the ITT, first-stage, IV second-stage (LATE), and OLS estimates for the overall sample; Tables A.7 and A.8 repeat the analysis separately for women and men.

  For Ukrainian refugees (overall), the first stage is large: the Job-Turbo increases the contact rate by about 10.8 percentage points, and the reduced form (ITT) on exits is about 1.7 percentage points. Under the exclusion restriction that the Job-Turbo affects

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exits only through counseling contacts, the IV second stage (LATE) implies that a 1-percentage point increase in the contact rate raises the exit-to-job rate by roughly 0.17 percentage points. The instrument is very strong (Kleibergen–Paap first-stage $F \approx 2{,}503$).

For other refugees, the Job-Turbo also increased contacts and exits, although the first stage is smaller (about 2.4 percentage points) and the ITT on exits is about 1.0 percentage points. The corresponding LATE is therefore about two times larger than for Ukrainians—about 0.4 percentage points in the exit-to-job rate for each 1-percentage points increase in the contact rate—with a strong first stage ($F \approx 207$). Economically, a given increase in contacts translates into a substantially larger exit response for other refugees than for Ukrainians. The sizable gaps between the IV and OLS coefficients (IV $\gg$ OLS) are consistent with endogeneity in contact assignment—e.g., caseworkers allocating more counseling to harder-to-place clients—which would attenuate OLS toward zero.

Disaggregating by gender reveals strong heterogeneity. Among Ukrainians, LATEs are similar across genders—about 0.15 percentage points for women and 0.18 percentage points for men per 1-percentage point increase in contacts—with very strong first stages (Kleibergen–Paap $F \approx 2{,}956$ for women and $F \approx 1{,}473$ for men). Among other refugees, returns differ strongly by gender: about 0.10 percentage points for women versus roughly 0.62 percentage points for men, again with strong first stages ($F \approx 155$ and $F \approx 126$, respectively).

Two interpretive notes are important. First, the IV coefficients identify *local* average treatment effects (LATEs) for compliers—job-center–by–group observations whose contact intensity shifted with the Job–Turbo—so external validity beyond those compliers is limited. Second, the exclusion restriction requires that, conditional on two-way fixed effects and the timing structure, the Job–Turbo affects exits only through contacts. Our fixed effects absorb stable group differences and common shocks, but they cannot rule out direct effects. If the program also raised exits via non-counseling channels (e.g., subsidies, employer outreach, faster processing, or sanctions), the reduced form would capture those gains as well, biasing the LATE upward. Under the plausible assumption that any such channels if anything increase exits, our LATEs should be interpreted as an *upper bound* on the causal effect of increased counseling intensity on exits. Figure A.56 summarizes these patterns by placing the overall LATEs next to the female- and male-specific estimates for both Ukrainian and other refugees.

- *Effects of the Job–Turbo by Gender and Job-Skill Level*: Figure A.57 reports ATT estimates with 95% confidence intervals from IFE models for exit-to-job rates, disaggregated by gender and job-skill level. Treatment groups are unemployed Ukrainian refugees (left column) and unemployed other refugees (right column); the control group is unemployed other immigrants. For Ukrainian refugees, effects are fairly uniform across genders and positive at all skill levels. For other refugees, impacts are concentrated among men and in low-skilled jobs. Figure A.58 replicates the specification

using unemployed Germans as the alternative control group.

- *Results for Optionskommunen*: This section presents effect estimates for the 104 job centers operated independently by local municipalities, known as *Optionskommunen*. It is important to note that there is no reliable information regarding which and how many of these centers participated in the Job-Turbo program. A report indicates that 24% of *Optionskommunen* did not participate, but it does not identify specific centers by name [70]. Moreover, data on counseling contacts is not available for these centers. Summary statistics for the 104 *Optionskommunen* are shown in Table A.10.

  In our analysis, we treat all 104 *Optionskommunen* as treated for the relevant treatment groups. Accordingly, the resulting estimates should be interpreted as intention-to-treat (ITT) effects for the treated.

  Figure A.59 displays the ITT effects from the IFE models for the exit-to-job rate, for both Ukrainian refugees and other refugees. Estimates are shown using other immigrants and Germans as respective control groups. We find that the Job-Turbo program had positive effects on the exit-to-job rate in *Optionskommunen* for both Ukrainian and other refugees. However, the magnitudes of these effects are considerably smaller than those observed for BA-operated job centers.

  For Ukrainian refugees compared to other immigrants, the Job-Turbo increased the exit-to-job rate by 0.77 percentage points per month (95% CI: [0.62, 0.91]) in *Optionskommunen*. This effect is roughly 43 percent the size of the 1.8 percentage point effect estimated for BA-operated job centers. In relative terms, this corresponds to a 60% increase over the pre-treatment mean in *Optionskommunen*, compared to a 113% increase in BA-operated centers.

  Turning to the group of other refugees, the Job-Turbo increased the exit-to-job rate by 0.5 percentage points per month (95% CI: [0.36, 0.62]), equivalent to an 17% increase over the pre-treatment mean. Again, this is about half than the 1 percentage point effect (or 28% increase) found among BA-operated centers. These patterns are consistent with the possibility that not all *Optionskommunen* participated in the program—or that those who did participated with lower intensity.

  Figures A.60 and A.61 show the program's effects on non-job exits in *Optionskommunen*. Among Ukrainian refugees, Job-Turbo led to modest reductions in labor force exits and in exits to other non-employment statuses. However, there is no discernible impact on exits to training programs, and no significant effects are observed for other refugees across any non-job exit categories.

  Finally, Figures A.62 and A.63 present the effects of Job-Turbo on exits to subsidized and unsubsidized employment in *Optionskommunen*. Consistent with patterns observed in BA-operated centers, we find positive effects on both types of employment, as well as an increase in the share of exits into subsidized jobs for Ukrainian refugees. That said, the magnitudes of these effects are again smaller than those estimated for BA-operated job centers.

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G   Cost-Benefit Analysis

For the marginal cost–benefit analysis, we quantify program costs and fiscal benefits over a 12-month horizon. The results are summarized in Table A.11.

Because job-center staffing did not increase during the rollout, direct costs primarily reflect additional spending on training measures and on subsidized employment for the extra placements induced by the Job–Turbo. Benefits arise from additional exits to employment and include lower welfare outlays, savings in unemployment-insurance contributions, and higher income-tax revenues.

To measure unit costs for wage subsidies and training, we use the 2023 edition of the statistical yearbook *Arbeitsmarktpolitische Instrumente SGB II – Ausgaben und Teilnehmende 2023*, which reports average per-participant expenditures by instrument for job centers.

For training, we draw on the category covering labor-market skill measures (*Aktivierung und berufliche Eingliederung*). In 2023, job centers spent on average €1,924 per participant month, with an average duration of 2.9 months, implying a total cost of approximately €5,580 per participant placed into training.

For wage subsidies, we use the expenditure category *Aufnahme einer Erwerbstätigkeit*, which includes employer subsidies (*Eingliederungszuschüsse*) and job-seeker subsidies (*Einstiegsgeld*). Average spending amounted to €757 per participant month, with an average subsidy duration of 5.9 months, implying a total cost of approximately €4,466 per participant placed into subsidized employment.

To estimate 12-month benefits, we consider three components: (i) savings in welfare expenditures, (ii) savings in statutory health and long-term care insurance contributions (*Kranken- und Pflegeversicherung*), and (iii) additional income-tax revenue (*Einkommensteuer*).

For tax gains, we use 2023 median monthly earnings reported by the *Bundesagentur für Arbeit*: €2,591 for Ukrainian refugees and €2,671 for other refugee groups (social-insurance subject, full-time employment in the core labor force). Based on these figures, we estimate monthly income-tax gains of €217 per newly employed Ukrainian and €229 per newly employed person from other refugee groups.

For welfare and insurance savings, we use average monthly *Bürgergeld* payments under SGB II in 2023, also from the *Bundesagentur für Arbeit*. These amounts reflect benefits granted after accounting for employment income: €577 for Ukrainians and €487 for other refugees. In addition, we assume monthly savings of €119 per person in health and long-term care insurance contributions for both groups, based on the federal government's response to a parliamentary inquiry on the financial situation of statutory health insurance.[1]

To compare costs and benefits over 12 months, we multiply the per-person costs for training (€5,580) and wage subsidies (€4,466) by the number of individuals induced into each instrument by the program, separately for Ukrainians and other refugees. Total benefits are

Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten René Springer, Jürgen Pohl, Ulrike Schielke-Ziesing, weiterer Abgeordneter und der Fraktion der AfD. Finanzielle Situation der gesetzlichen Krankenkassen. Drucksache 20/10575).

obtained by multiplying the estimated monthly benefit per newly employed person (Ukrainians: €913; other refugees: €836) by the number of program-induced job entrants across all 404 job centers (30,663 Ukrainians; 18,523 other refugees).

For comparability, we scale totals by the number of newly employed individuals in each group. For Ukrainians, estimated 12-month benefits average €10,959 per person versus costs of €10,077, yielding a net balance of €882. For other refugees, benefits average €10,032 and costs €6,366 per person, for a net return of €3,666. Overall, these estimates suggest that the program pays for itself within 12 months and generates accumulating benefits thereafter.

These marginal cost–benefit estimates rest on several assumptions. First, average earnings among program-induced hires are assumed comparable to earnings of refugees employed before the program; this may not hold if job types differ systematically. Second, we assume continued employment over the full 12-month horizon. Third, due to missing data on the cost of additional counseling time (e.g., hours and wages of job-center staff), these administrative costs are not included.

Appendix Figures
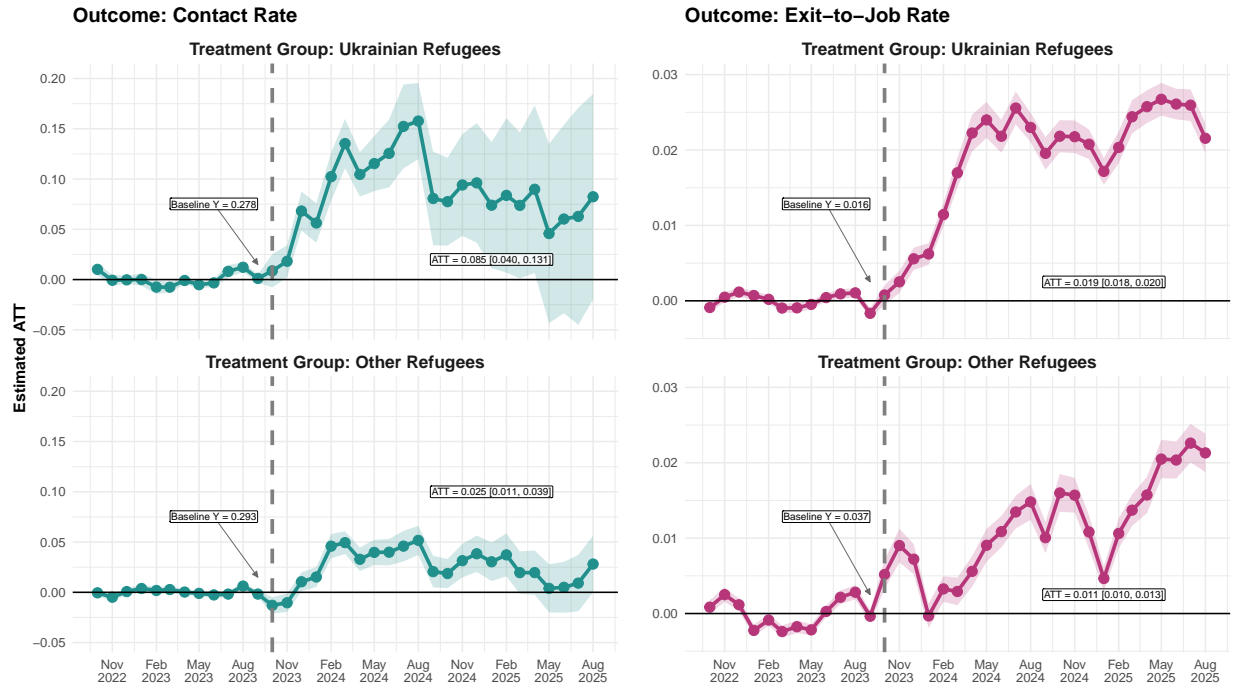
Figure A.1: Map of Job Centers in Germany
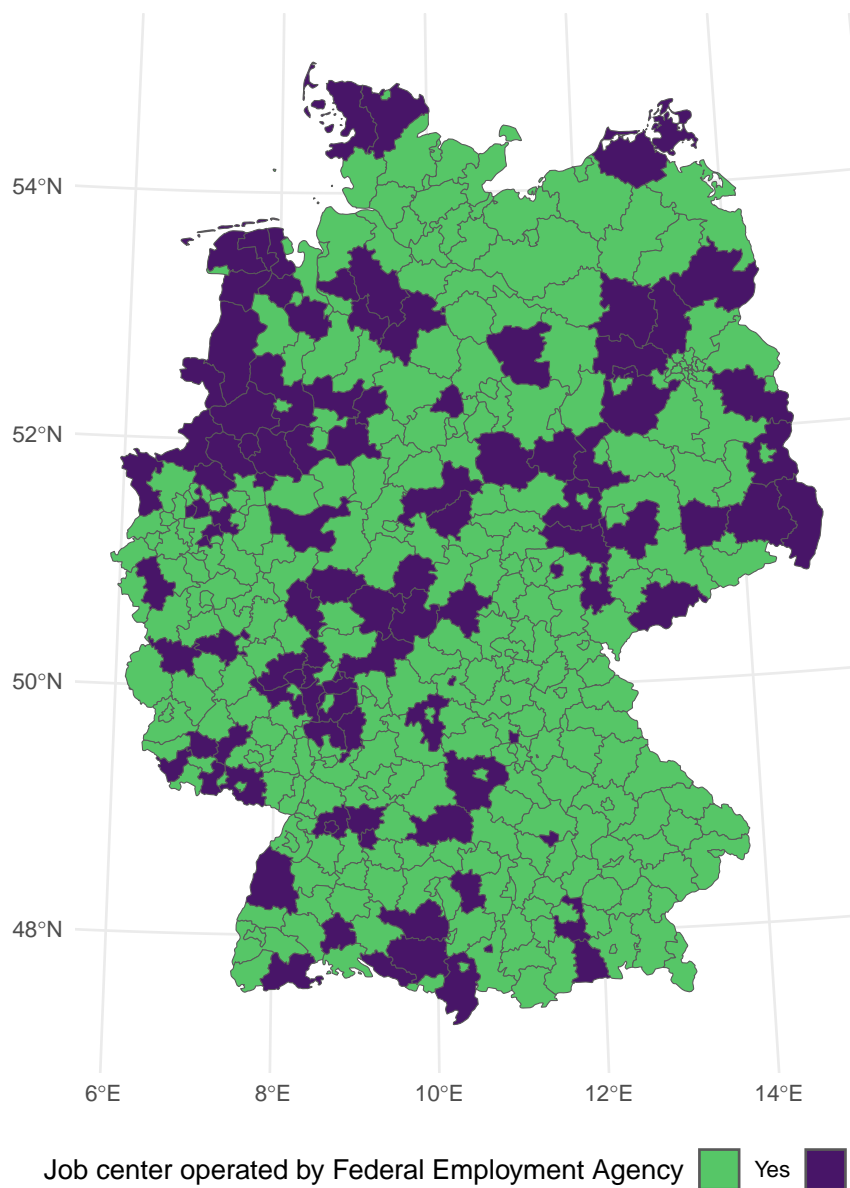
Germany has 404 job-center districts. Of these, 300 are joint institutions co-managed by the BA and local governments; the remaining 104 are independently managed by municipalities (*Optionskommunen*).

Figure A.2: Trends in Unemployed, Contact Rate, and Exit-to-Job Rate
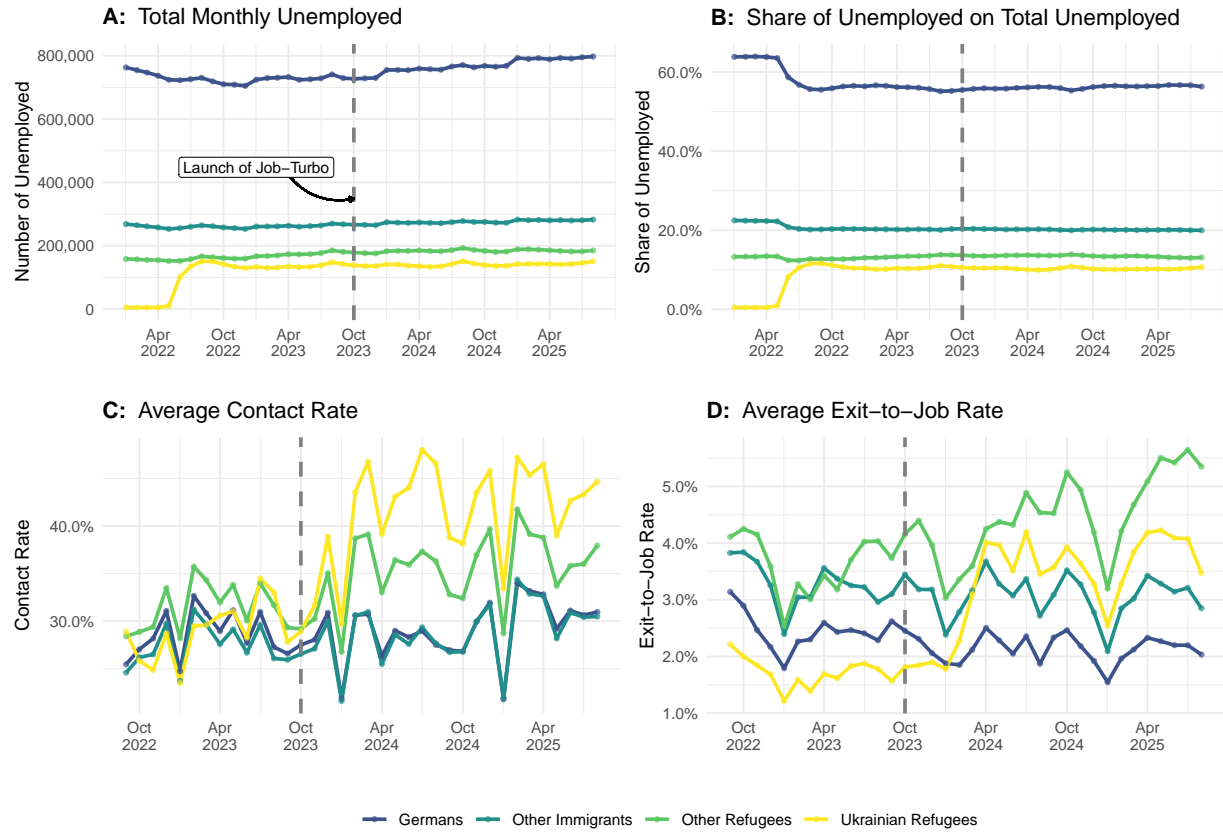
Panel A shows the trends in the number of unemployed by month across all 300 BA operated job centers in Germany before and after the Job-Turbo began in October 2023. Panel B displays the share of unemployed from each nationality group. Panel C presents the average contact rate, while Panel D illustrates the average exit-to-job rate across job centers.

Figure A.3: Effects of the Job–Turbo on Contact and Exit-to-Job Rates for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE models. Left: contact rate; right: exit-to-job rate. Treatment groups are unemployed Ukrainian refugees (top) and unemployed other refugees (bottom); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers. Cross-validated optimal factor counts for the IFE models (top-left to bottom-right) are $r^* = 1$, $r^* = 1$, $r^* = 0$, and $r^* = 0$.

Figure A.4: Effects of the Job–Turbo on Contact and Exit-to-Job Rates for Ukrainian and Other Refugees Using the TWFE Imputation Estimator
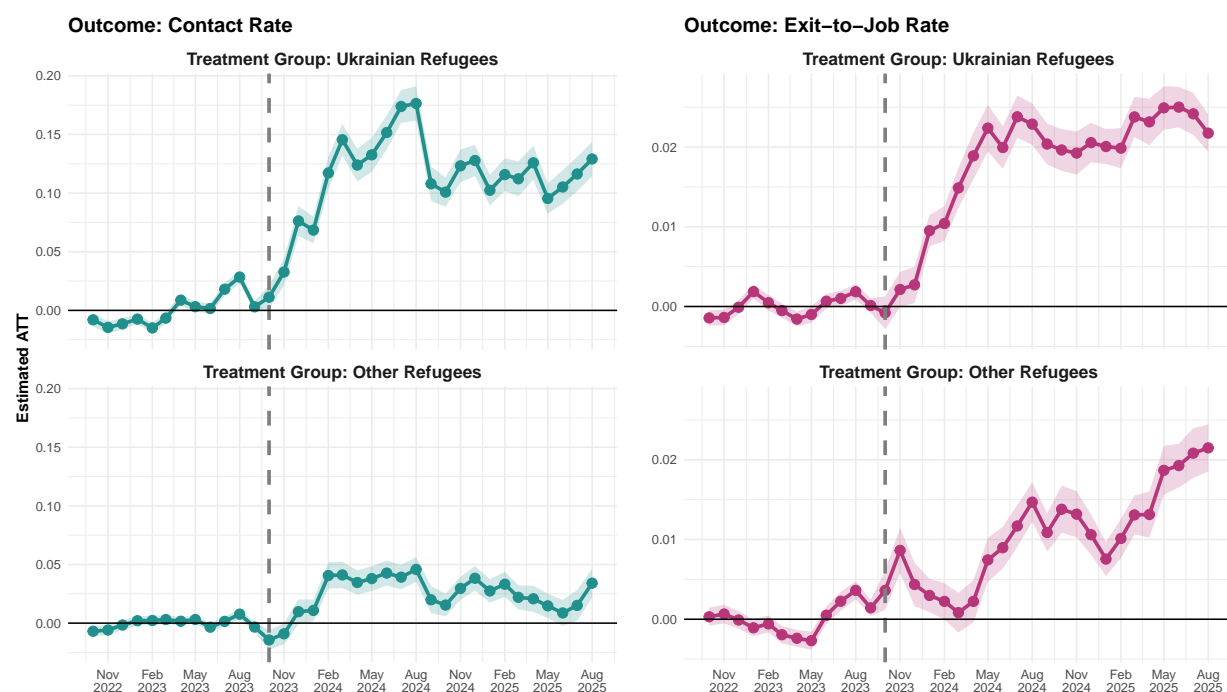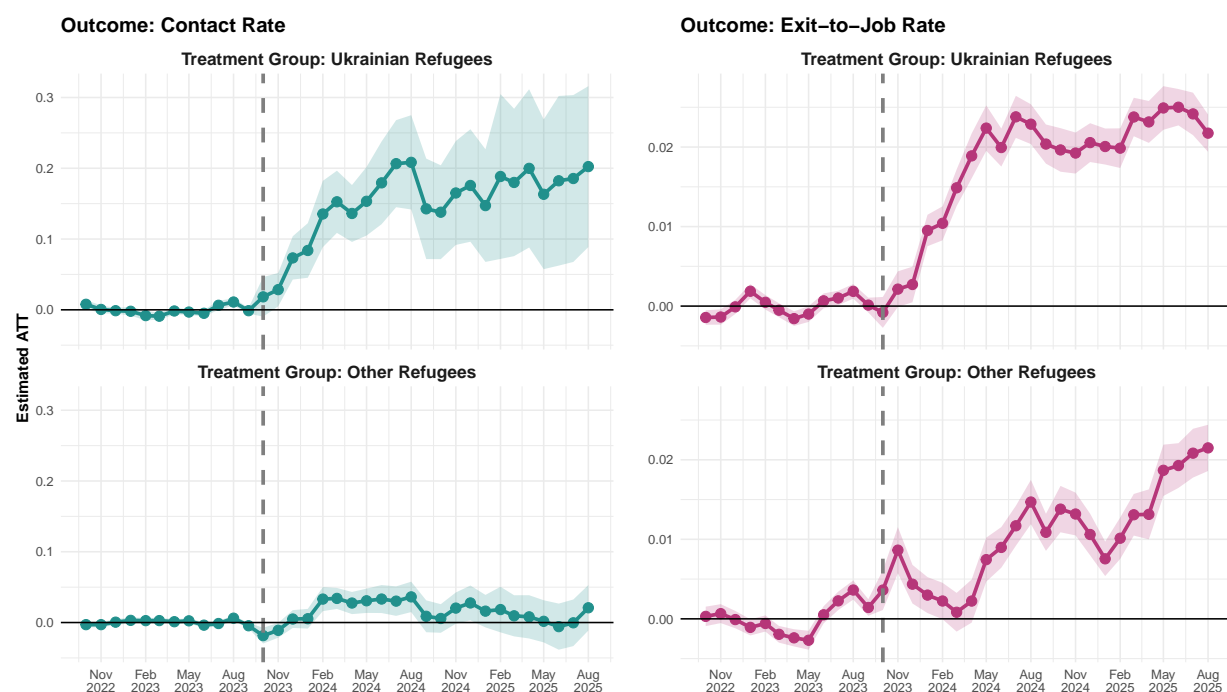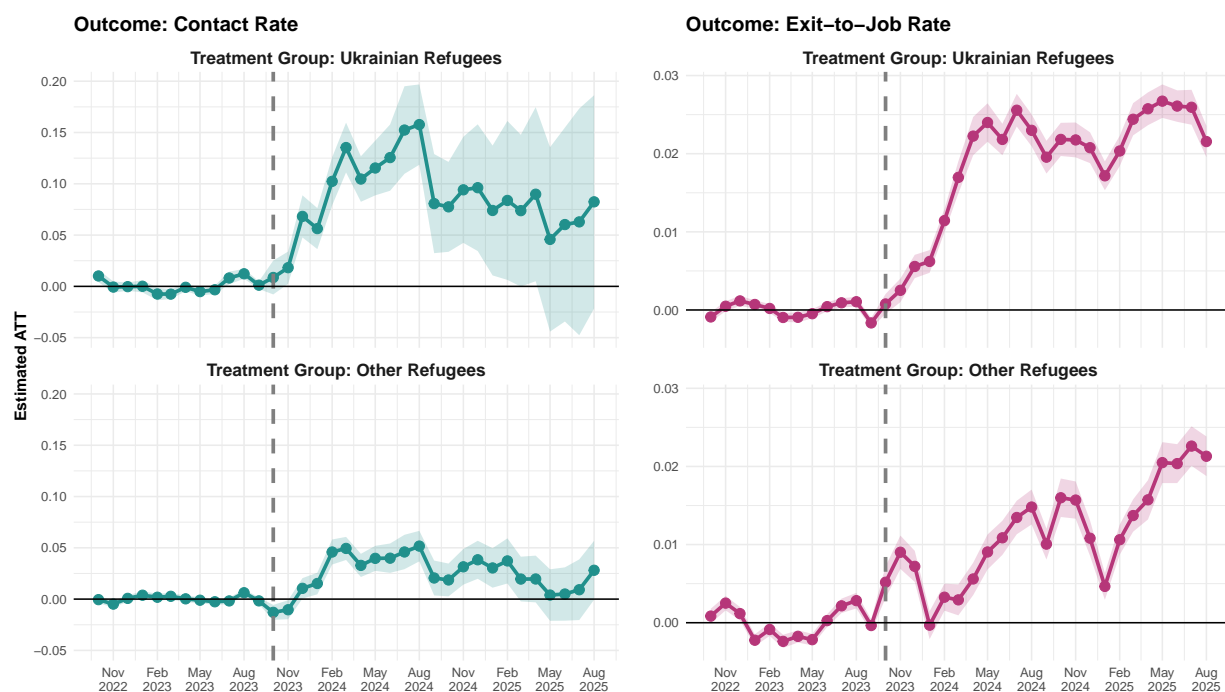

Panels report ATT estimates with 95% confidence intervals from the two-way fixed-effects (TWFE) imputation estimator. Left: contact rate; right: exit-to-job rate. Treatment groups are unemployed Ukrainian refugees (top) and unemployed other refugees (bottom); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.5: Effects of the Job–Turbo on Contact and Exit-to-Job Rates for Ukrainian and Other Refugees Using the TWFE Imputation Estimator (Germans as Alternative Control Group)
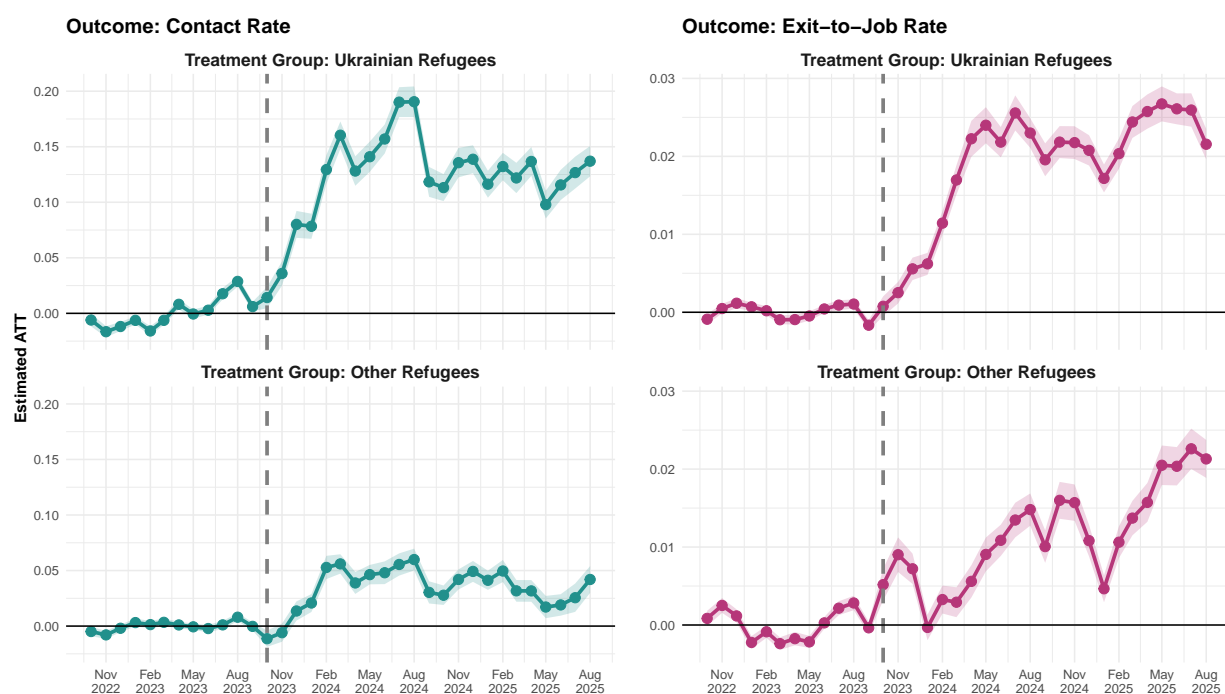
Panels report ATT estimates with 95% confidence intervals from the two-way fixed-effects (TWFE) imputation estimator. Left: contact rate; right: exit-to-job rate. Treatment groups are unemployed Ukrainian refugees (top) and unemployed other refugees (bottom); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.6: Effects of the Job–Turbo on Contact and Exit-to-Job Rates for Ukrainian and Other Refugees Using the Matrix Completion Estimator

Panels report ATT estimates with 95% confidence intervals from the matrix completion (MC) estimator. Left: contact rate; right: exit-to-job rate. Treatment groups are unemployed Ukrainian refugees (top) and unemployed other refugees (bottom); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.7: Effects of the Job–Turbo on Contact and Exit-to-Job Rates for Ukrainian and Other Refugees Using the Matrix Completion Estimator (Germans as Alternative Control Group)
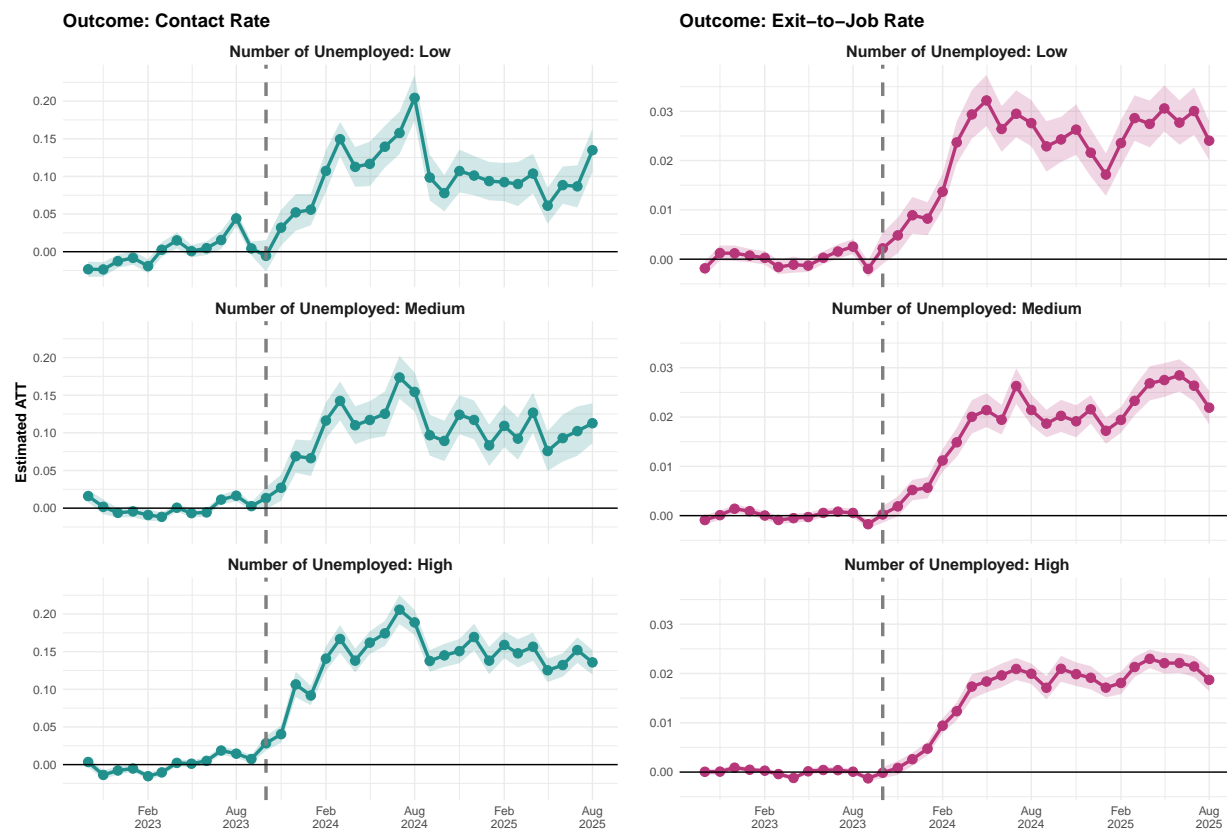

Panels report ATT estimates with 95% confidence intervals from matrix completion (MC) models. Left: contact rate; right: exit-to-job rate. Treatment groups are unemployed Ukrainian refugees (top) and unemployed other refugees (bottom); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.8: Effects of the Job–Turbo by Job-Center Size for Ukrainian Refugees
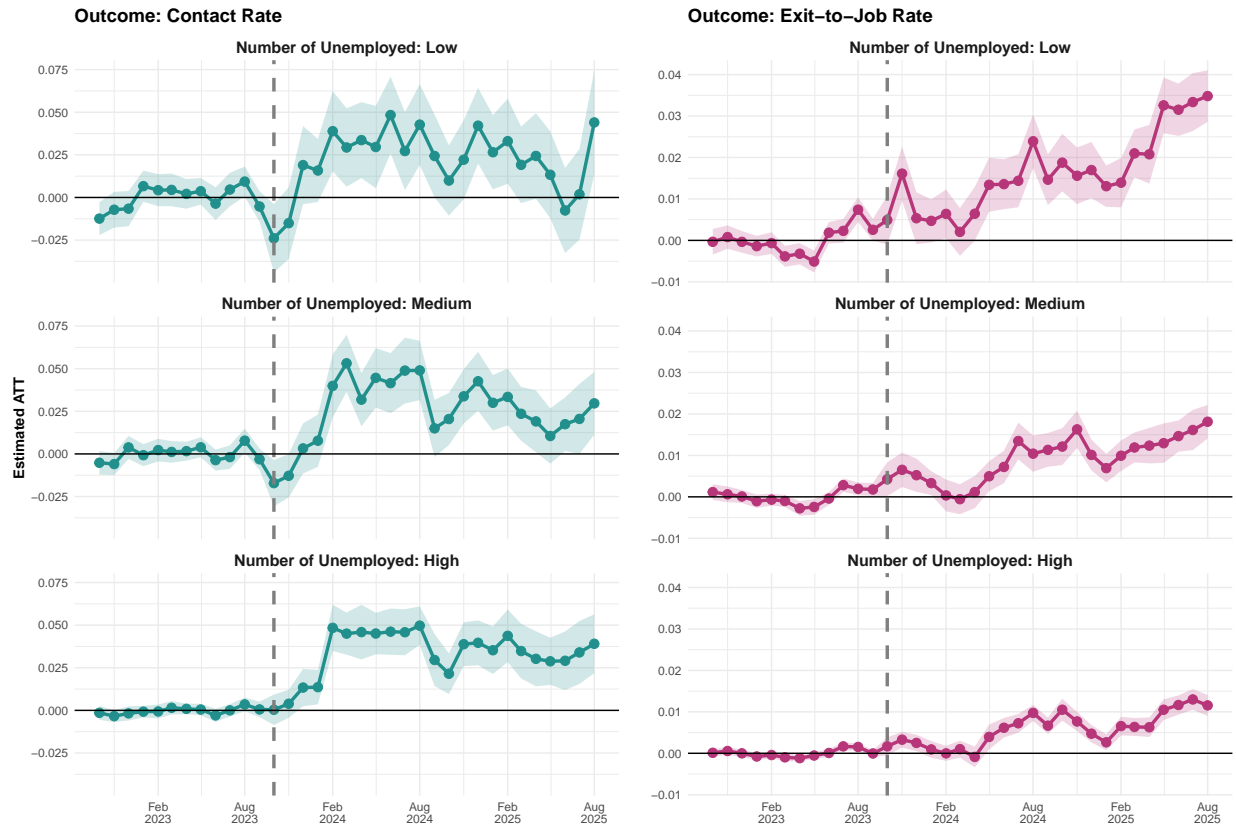
Panels report ATT estimates with 95% confidence intervals from IFE models. Left: contact rate; right: exit-to-job rate. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Job centers are grouped into terciles by their pre-treatment total number of unemployed (see text for details). Estimates use data from 300 BA-operated job centers.

Figure A.9: Effects of the Job–Turbo by Job-Center Size for Ukrainian Refugees (Germans as Alternative Control Group)
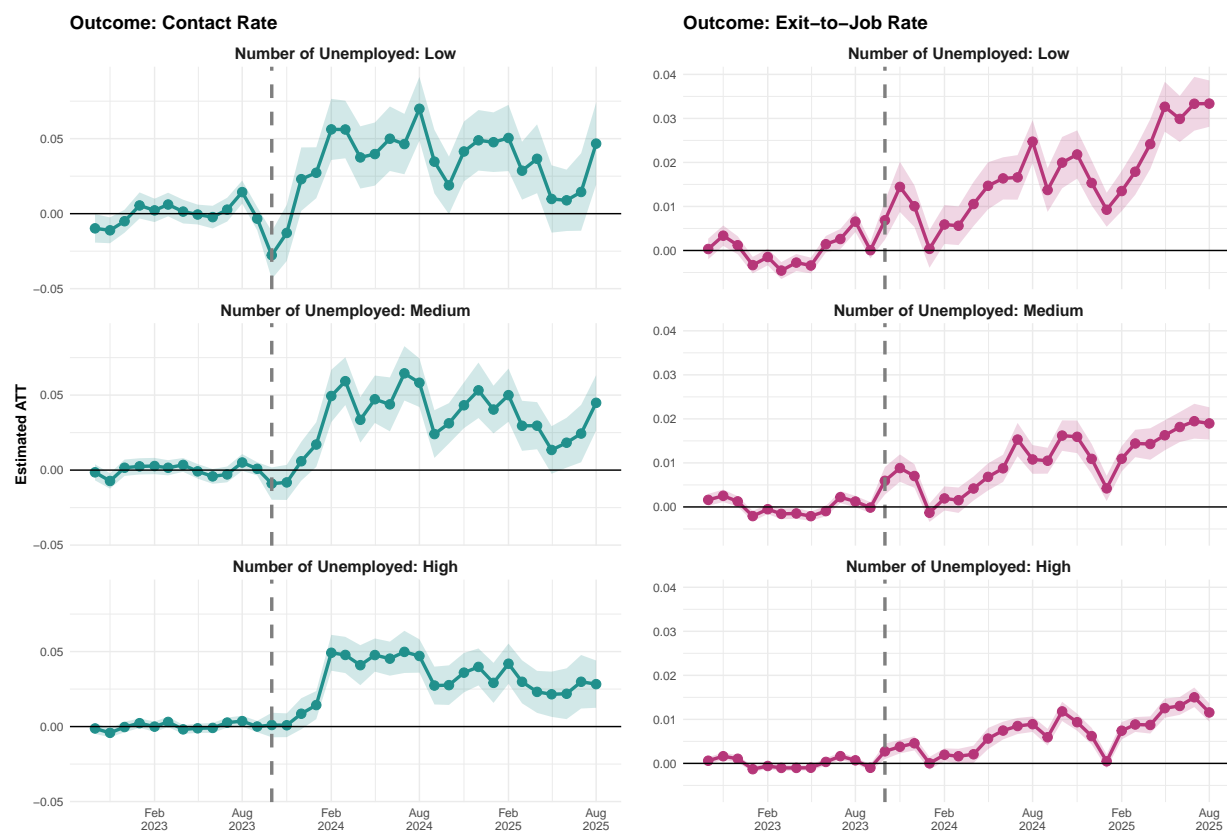

Panels report ATT estimates with 95% confidence intervals from IFE models. Left: contact rate; right: exit-to-job rate. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Job centers are grouped into terciles by their pre-treatment total number of unemployed (see text for details). Estimates use data from 300 BA-operated job centers.

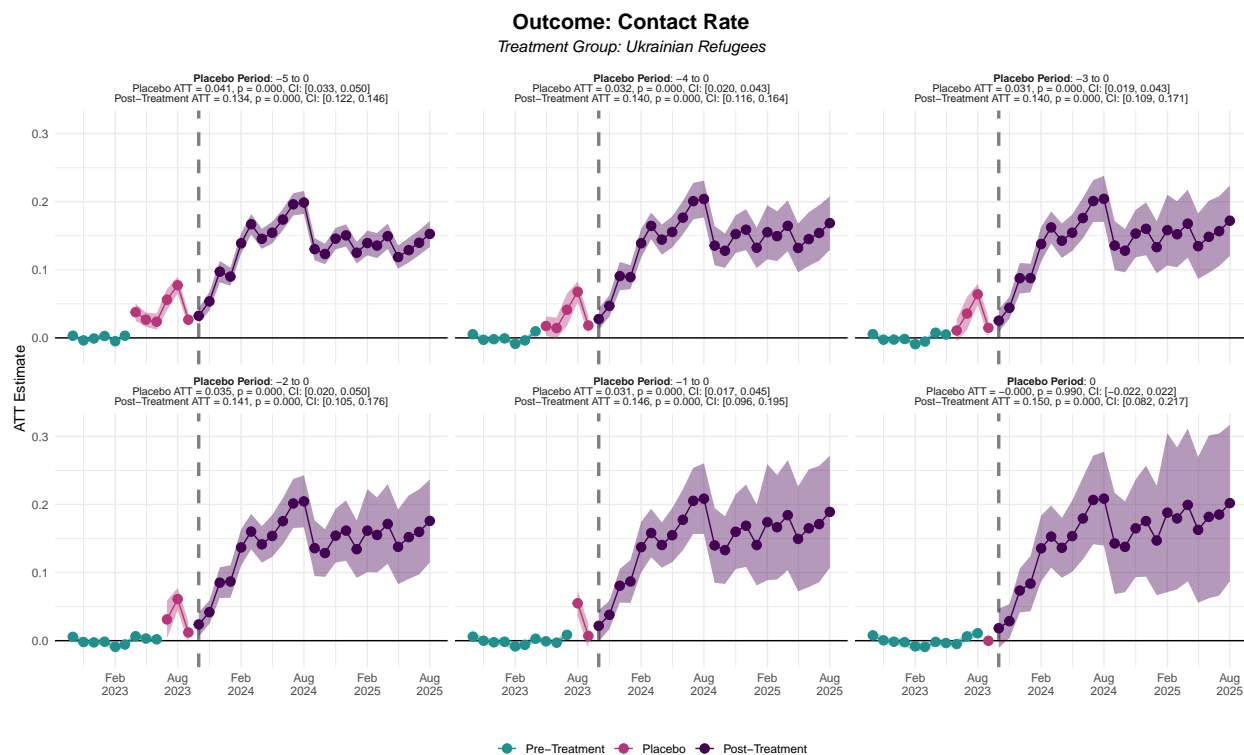Figure A.10: Effects of the Job–Turbo by Job-Center Size for Other Refugees

Panels report ATT estimates with 95% confidence intervals from IFE models. Left: contact rate; right: exit-to-job rate. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Job centers are grouped into terciles by their pre-treatment total number of unemployed (see text for details). Estimates use data from 300 BA-operated job centers.

Figure A.11: Effects of the Job–Turbo by Job-Center Size for Other Refugees (Germans as Alternative Control Group)
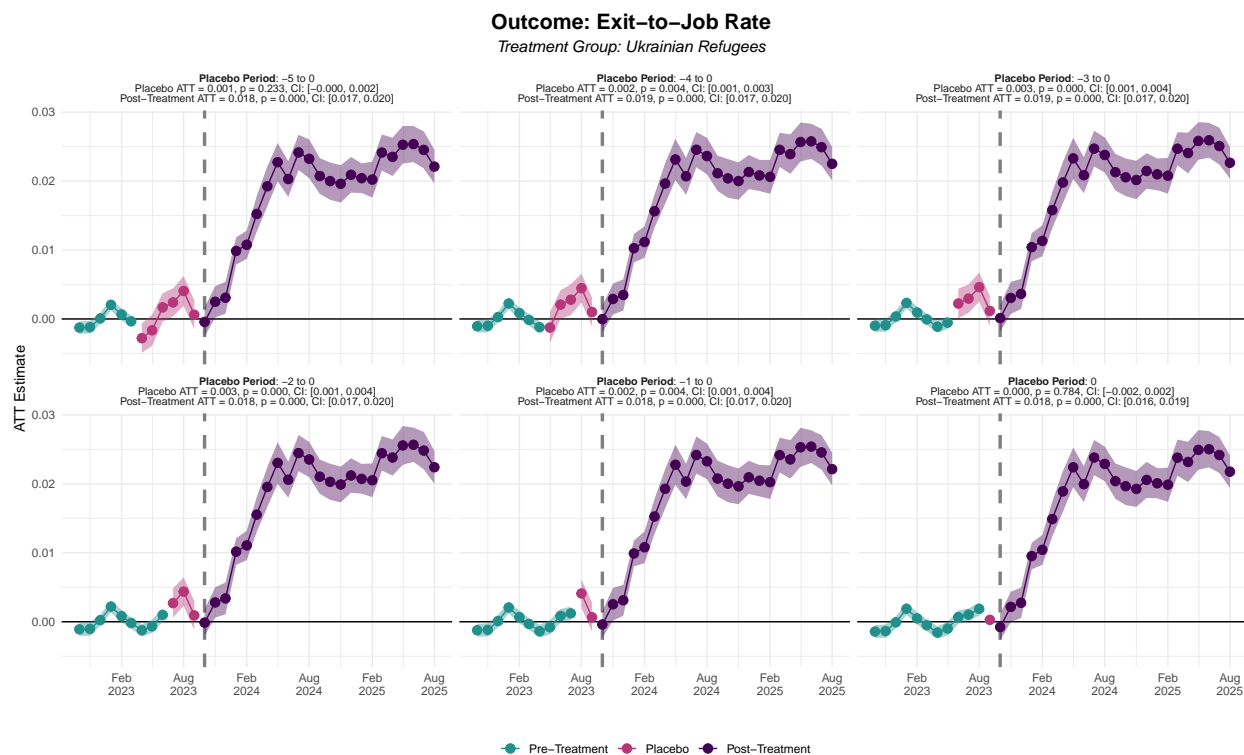

Panels report ATT estimates with 95% confidence intervals from IFE models. Left: contact rate; right: exit-to-job rate. The treatment group is unemployed other refugees; the control group is unemployed Germans. Job centers are grouped into terciles by their pre-treatment total number of unemployed (see text for details). Estimates use data from 300 BA-operated job centers.

Figure A.12: Placebo Tests: Effects of the Job–Turbo on Contact Rates for Ukrainian Refugees
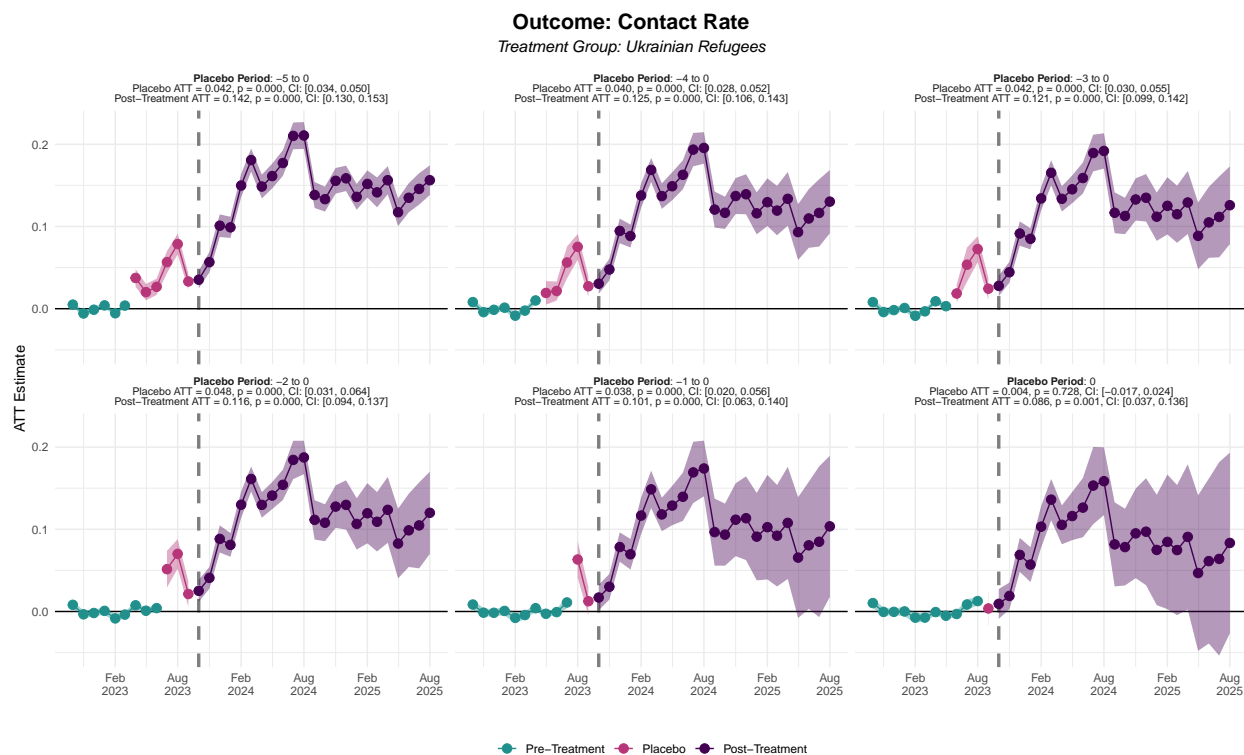

Panels report ATT estimates with 95% confidence intervals from IFE for the contact rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.13: Placebo Tests: Effects of the Job–Turbo on Exit-to-Job Rates for Ukrainian Refugees

Outcome: Exit–to–Job Rate
Treatment Group: Ukrainian Refugees

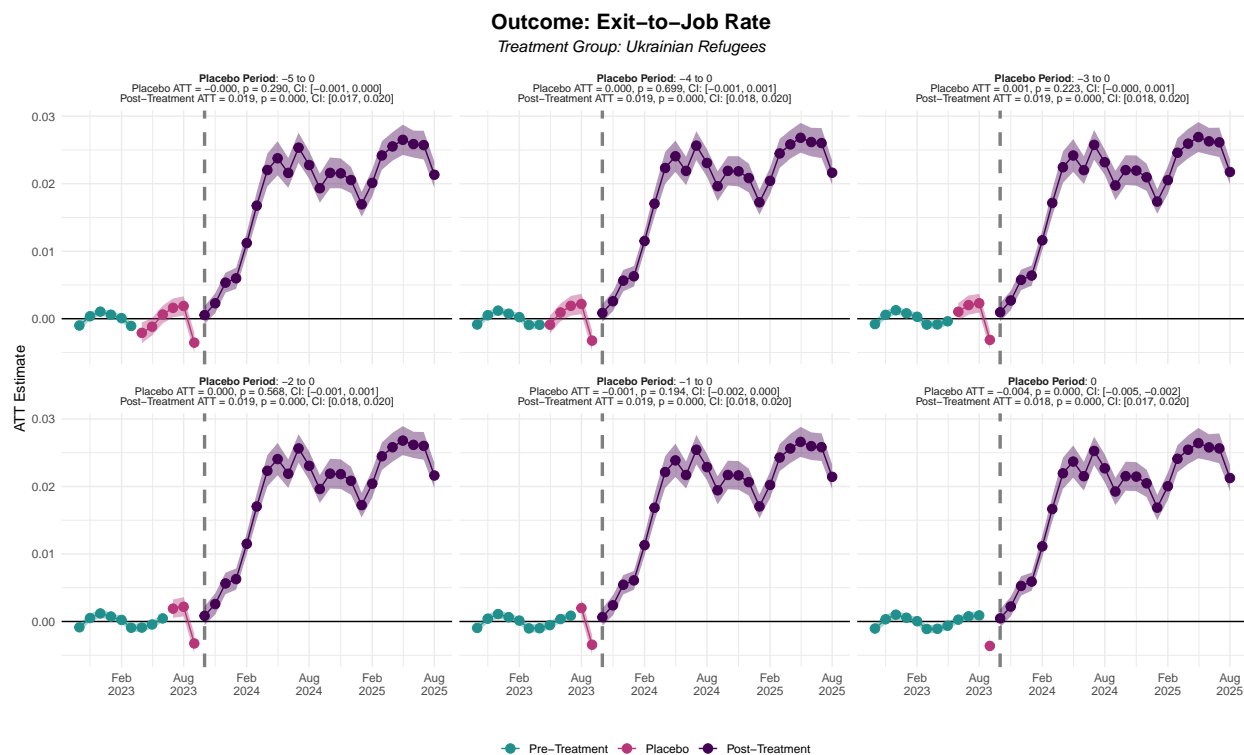Panels report ATT estimates with 95% confidence intervals from IFE for the exit-to-job rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.14: Placebo Tests: Effects of the Job–Turbo on Contact Rates for Ukrainian Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE for the contact rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.15: Placebo Tests: Effects of the Job–Turbo on Exit-to-Job Rates for Ukrainian Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE for the exit-to-job rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.16: Placebo Tests: Effects of the Job–Turbo on Contact Rates for Other Refugees
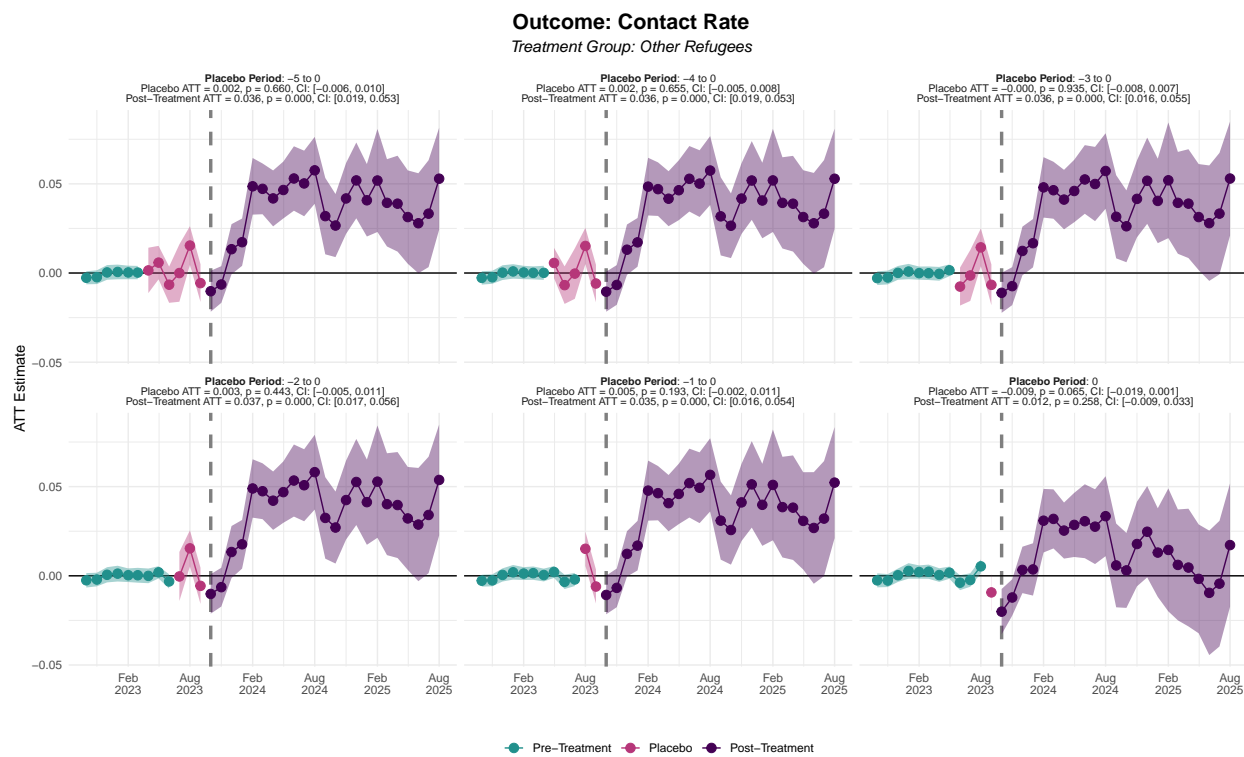

Panels report ATT estimates with 95% confidence intervals from IFE for the contact rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.17: Placebo Tests: Effects of the Job–Turbo on Exit-to-Job Rates for Other Refugees

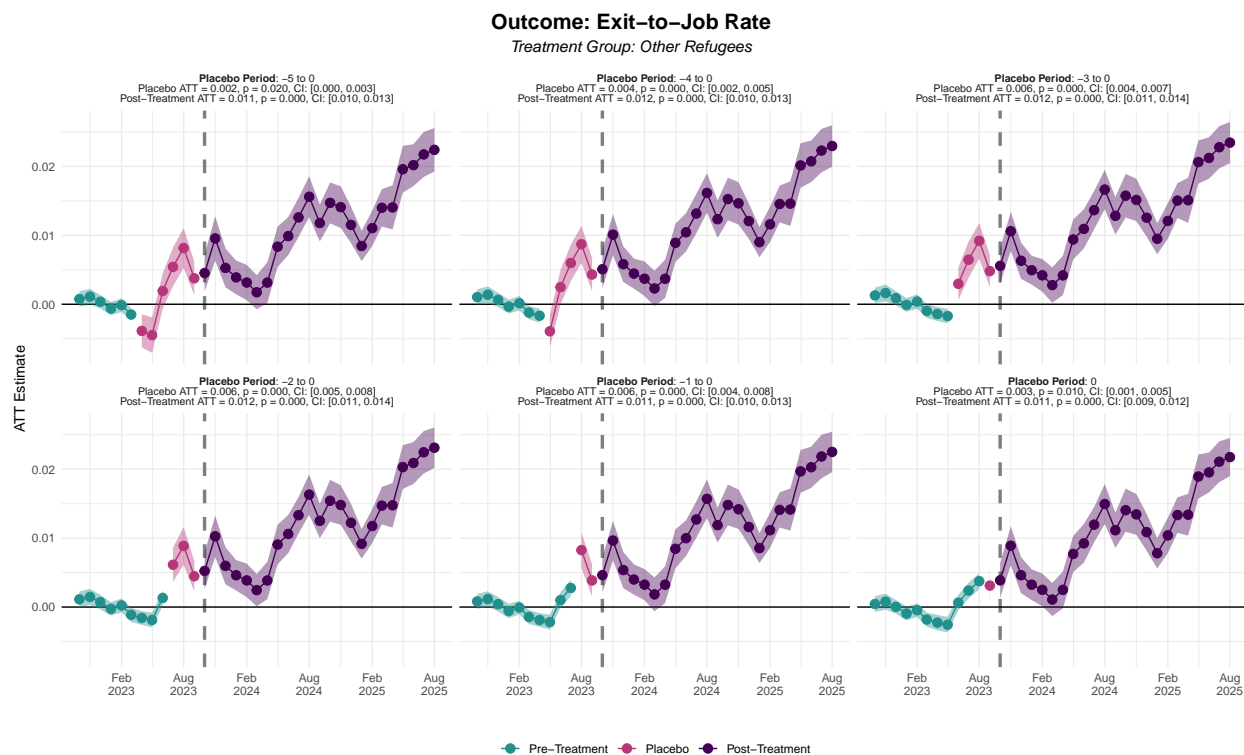**Outcome: Exit–to–Job Rate**
Treatment Group: Other Refugees

Panels report ATT estimates with 95% confidence intervals from IFE for the exit-to-job rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.18: Placebo Tests: Effects of the Job–Turbo on Contact Rates for Other Refugees (Germans as Alternative Control Group)
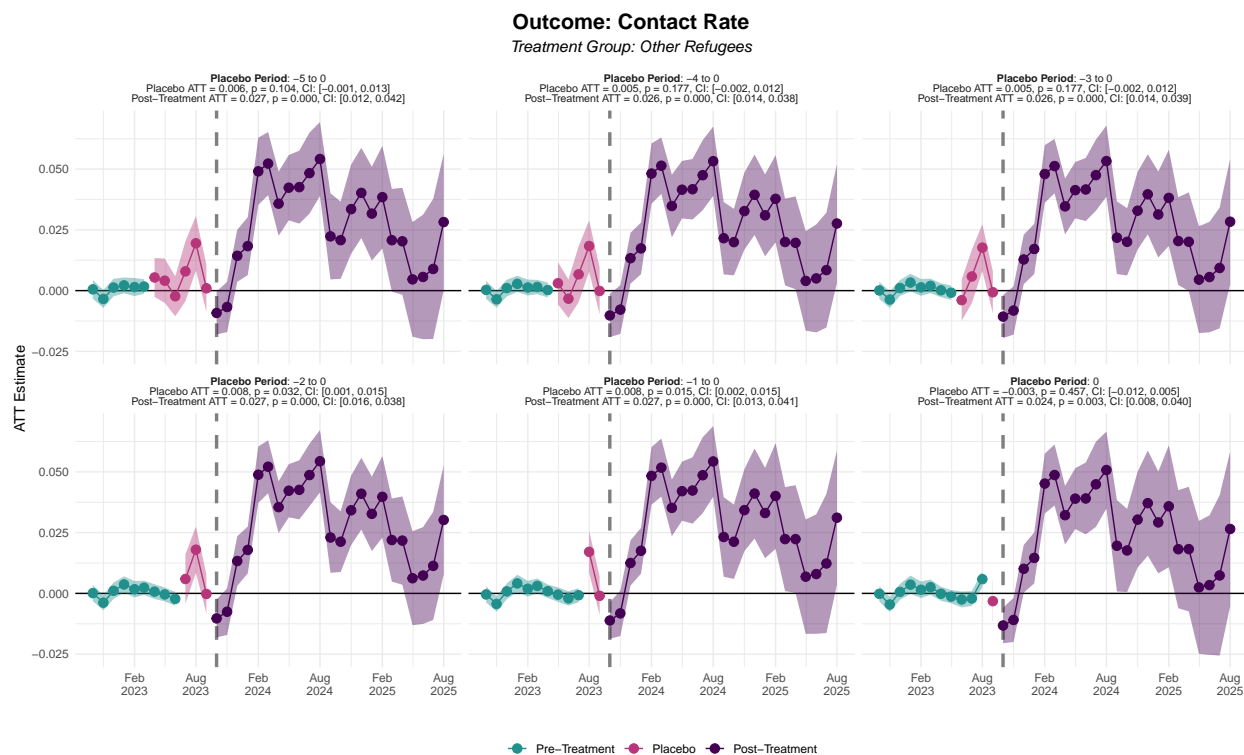

Panels report ATT estimates with 95% confidence intervals from IFE for the contact rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed other refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.19: Placebo Tests: Effects of the Job–Turbo on Exit-to-Job Rates for Other Refugees (Germans as Alternative Control Group)
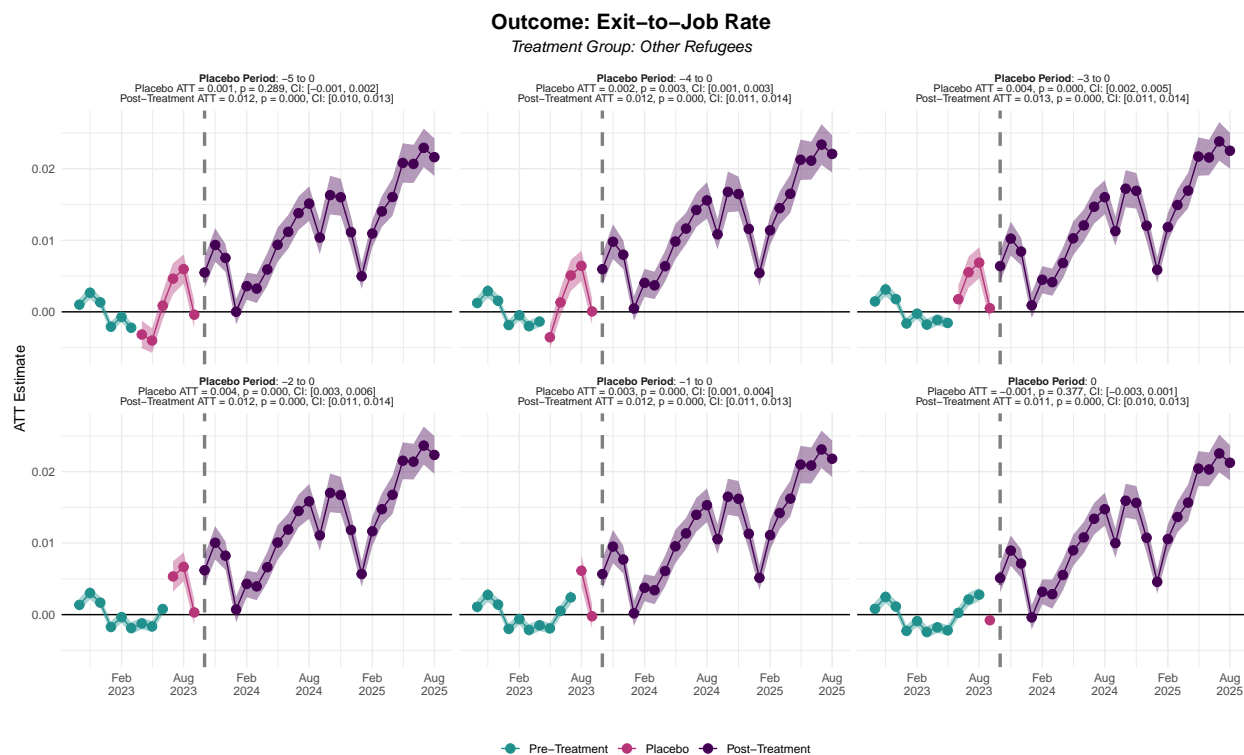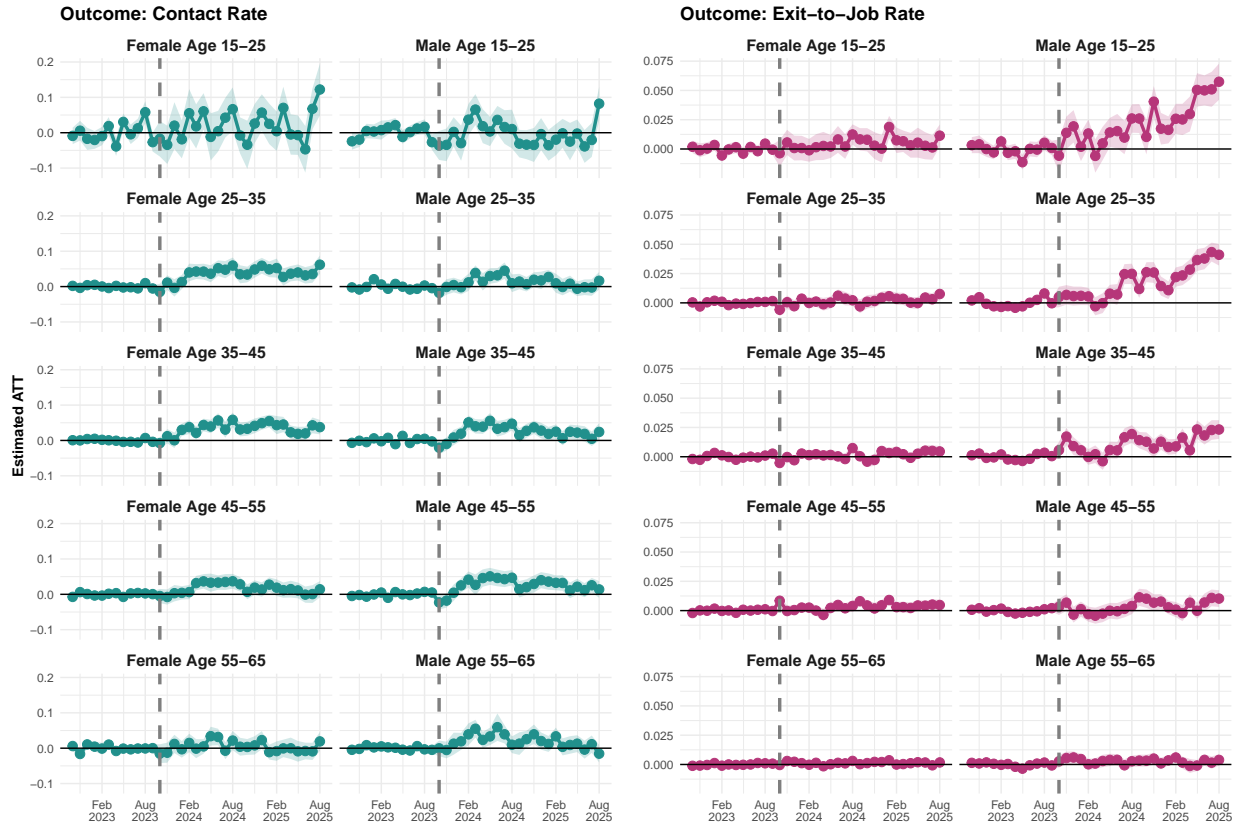

Panels report ATT estimates with 95% confidence intervals from IFE for the exit-to-job rate. Each panel applies a placebo window 1–5 months prior to program launch. Panel headers list the placebo ATT for that window and the post-treatment ATT. The treatment group is unemployed other refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.20: Effects of the Job–Turbo by Gender and Age for Other Refugees

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by age and gender. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.21: Effects of the Job–Turbo by Gender and Age for Ukrainian Refugees (Germans as Alternative Control Group)
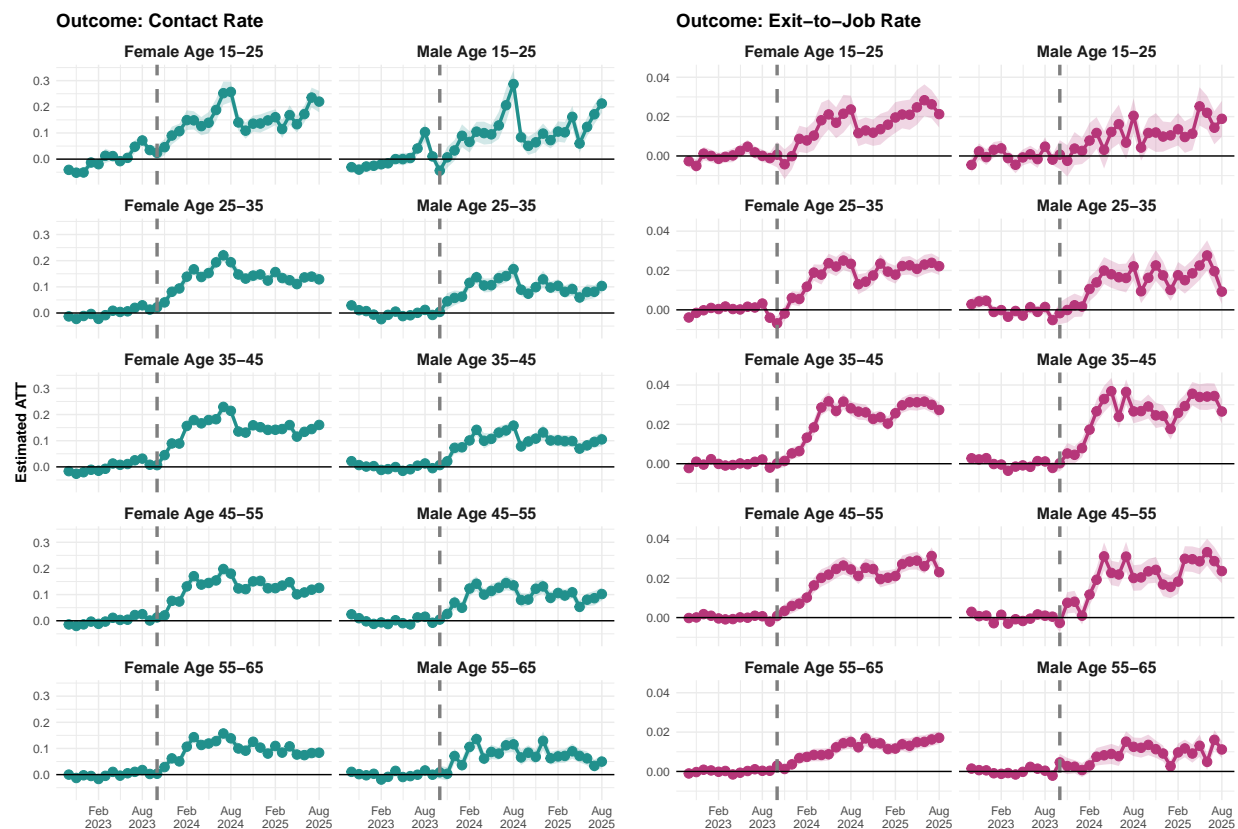
Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by age and gender. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.22: Effects of the Job–Turbo by Gender and Age for Other Refugees (Germans as Alternative Control Group)
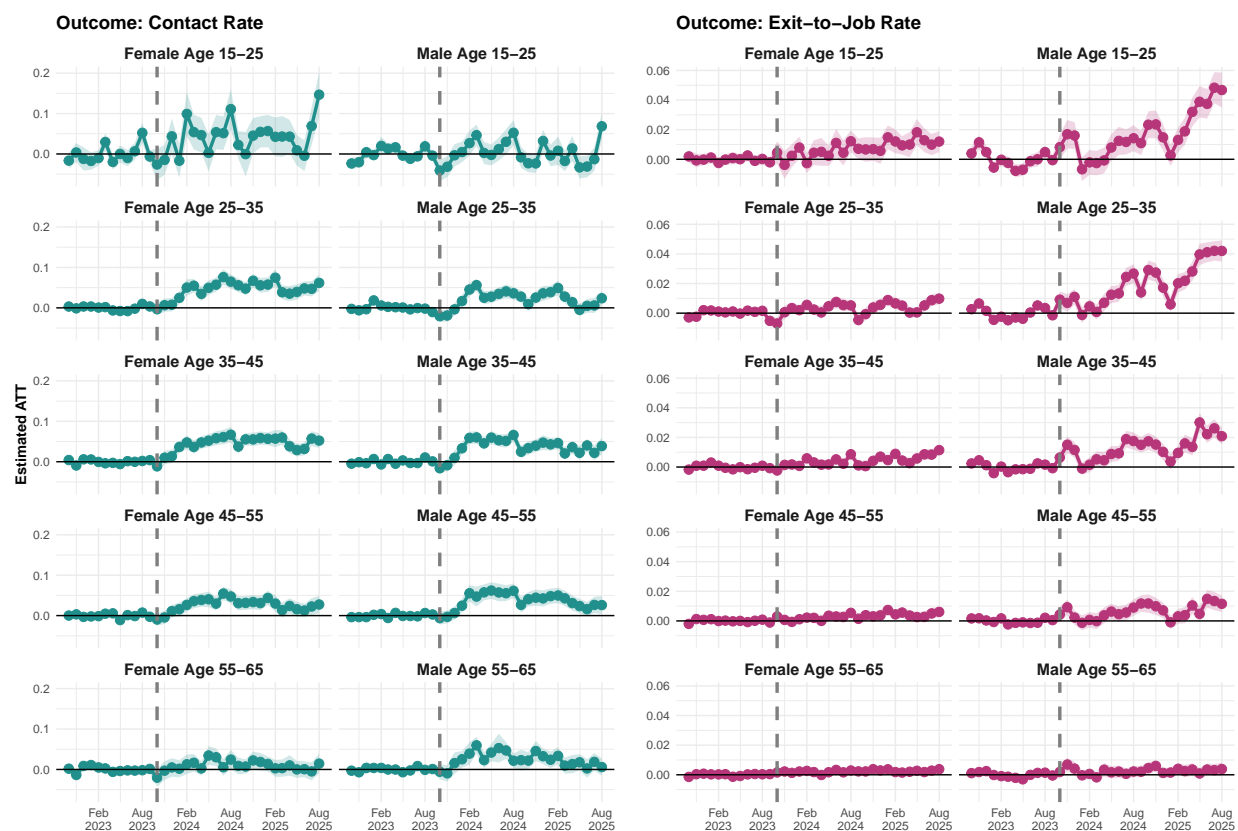

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by age and gender. The treatment group is unemployed other refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.23: Effects of the Job–Turbo by Region for Ukrainian Refugees

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by region. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers; the number of centers varies by region (see text for details).

Figure A.24: Effects of the Job–Turbo by Region for Ukrainian Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by region. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers; the number of centers varies by region (see text for details).

Figure A.25: Effects of the Job–Turbo by Region for Other Refugees

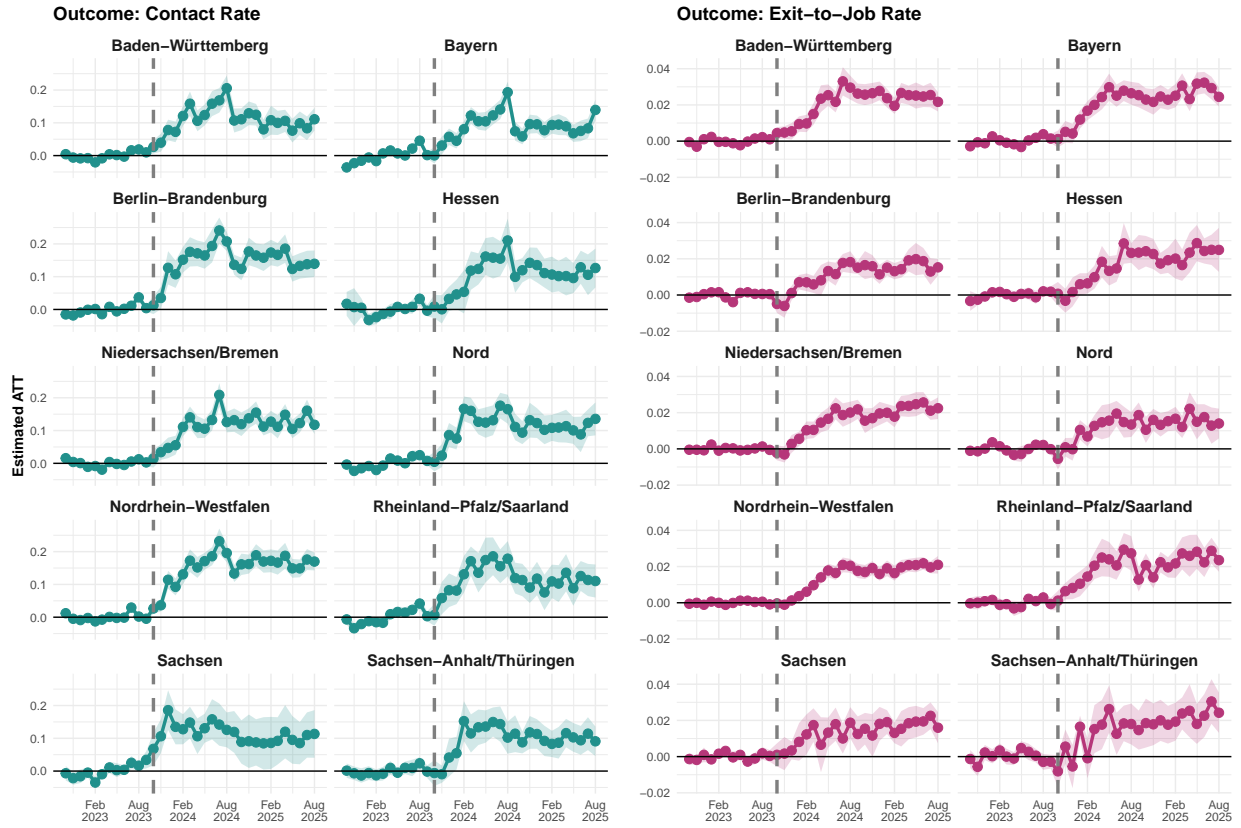Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by region. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers; the number of centers varies by region (see text for details).

Figure A.26: Effects of the Job–Turbo by Region for Other Refugees (Germans as Alternative Control Group)
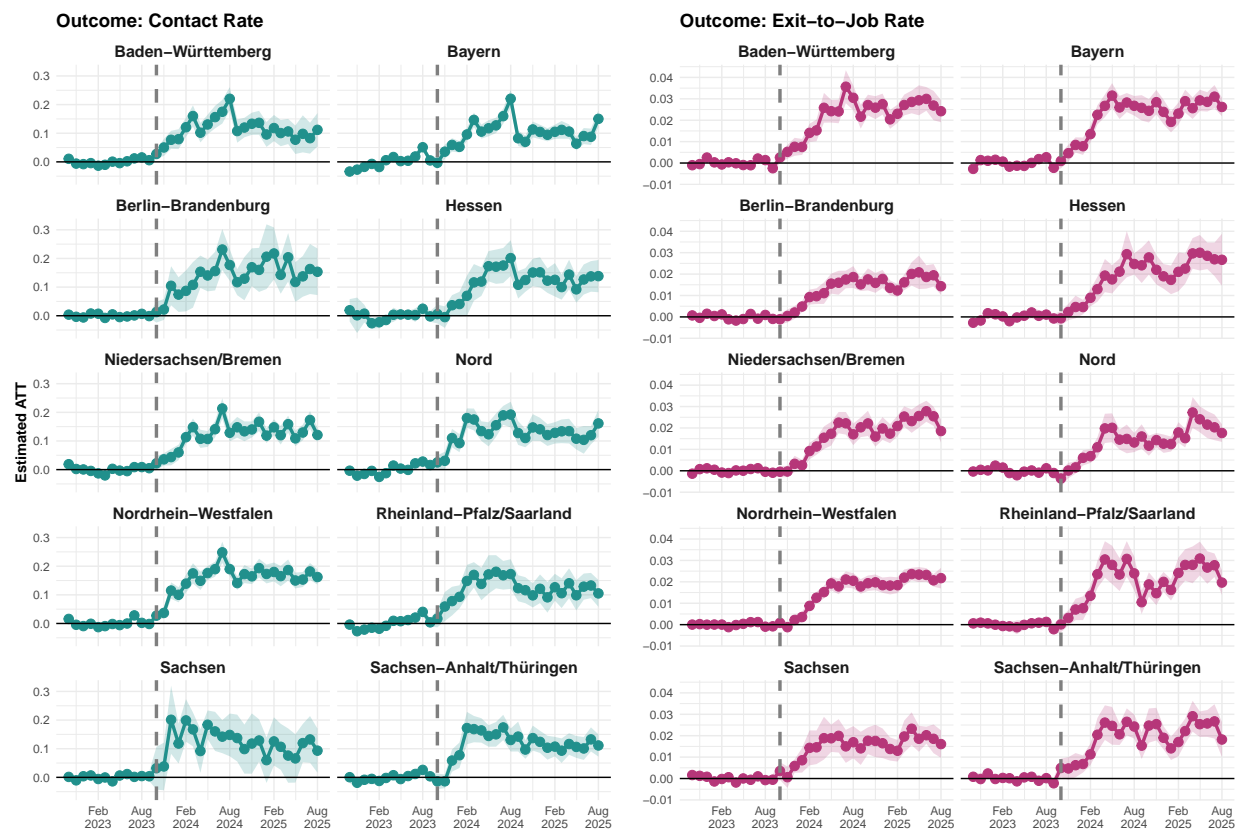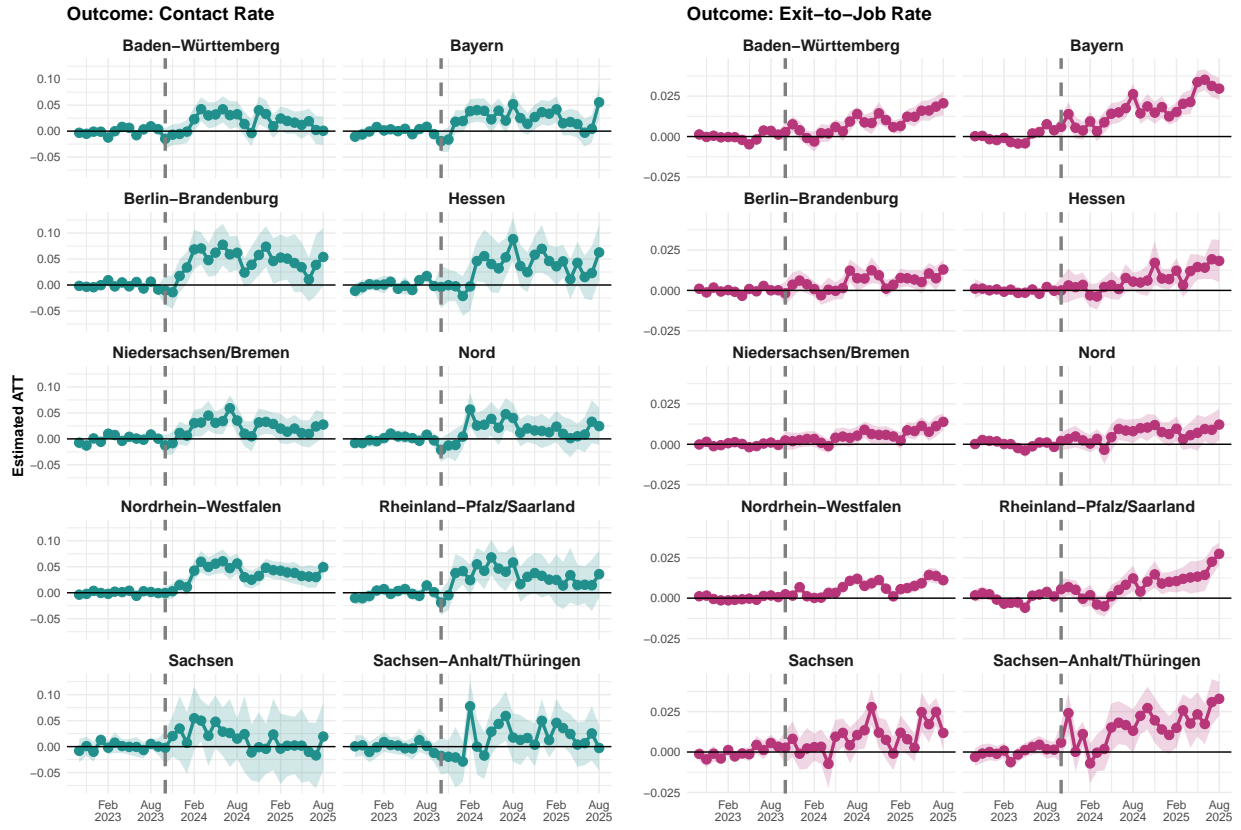

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by region. The treatment group is unemployed other refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers; the number of centers varies by region (see text for details).

Figure A.27: Effects of the Job–Turbo by Labor-Market Tightness for Ukrainian Refugees

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by labor-market tightness. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Job centers are grouped into terciles by their pre-treatment vacancy-to-unemployment ratio (see text for details). Estimates use data from 300 BA-operated job centers.

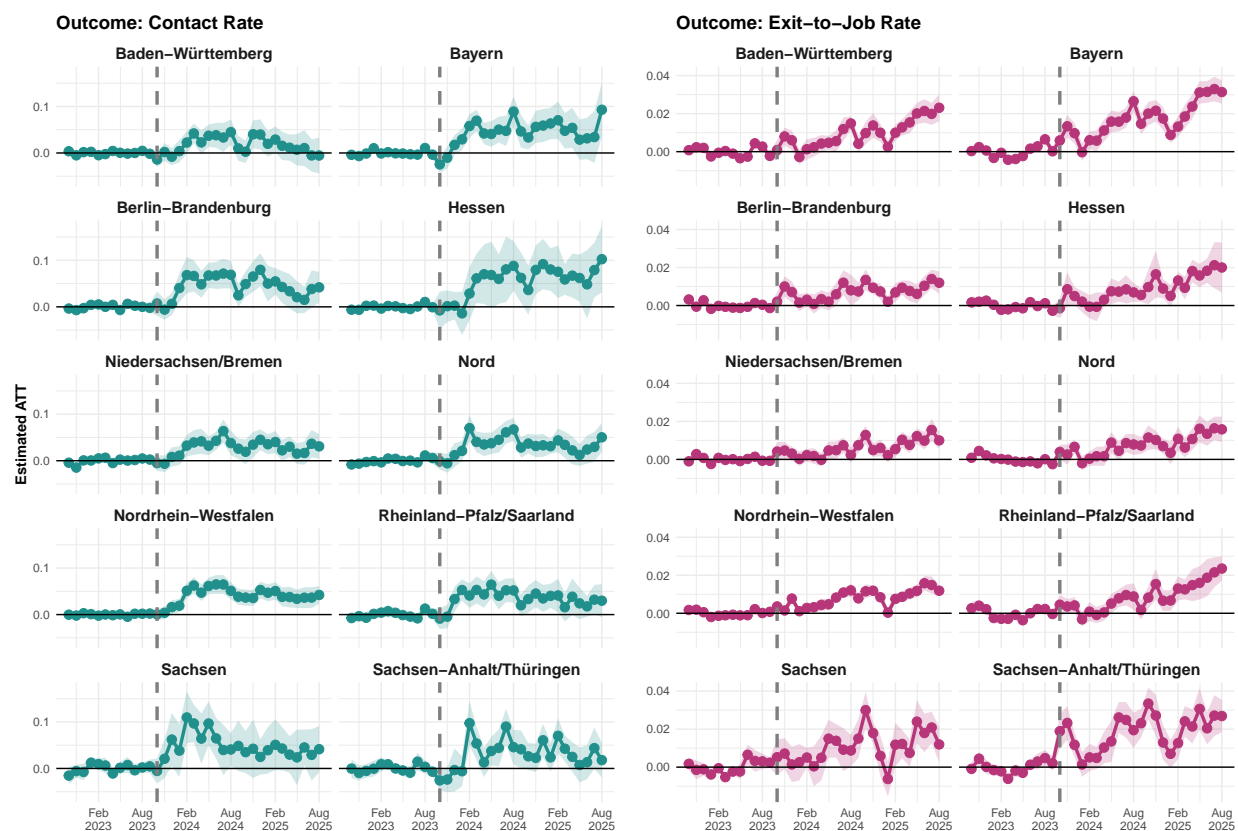Figure A.28: Effects of the Job–Turbo by Labor-Market Tightness for Ukrainian Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by labor-market tightness. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Job centers are grouped into terciles by their pre-treatment vacancy-to-unemployment ratio (see text for details). Estimates use data from 300 BA-operated job centers.

Figure A.29: Effects of the Job–Turbo by Labor-Market Tightness for Other Refugees

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by labor-market tightness. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Job centers are grouped into terciles by their pre-treatment vacancy-to-unemployment ratio (see text for details). Estimates use data from 300 BA-operated job centers.

Figure A.30: Effects of the Job–Turbo by Labor-Market Tightness for Other Refugees (Germans as Alternative Control Group)

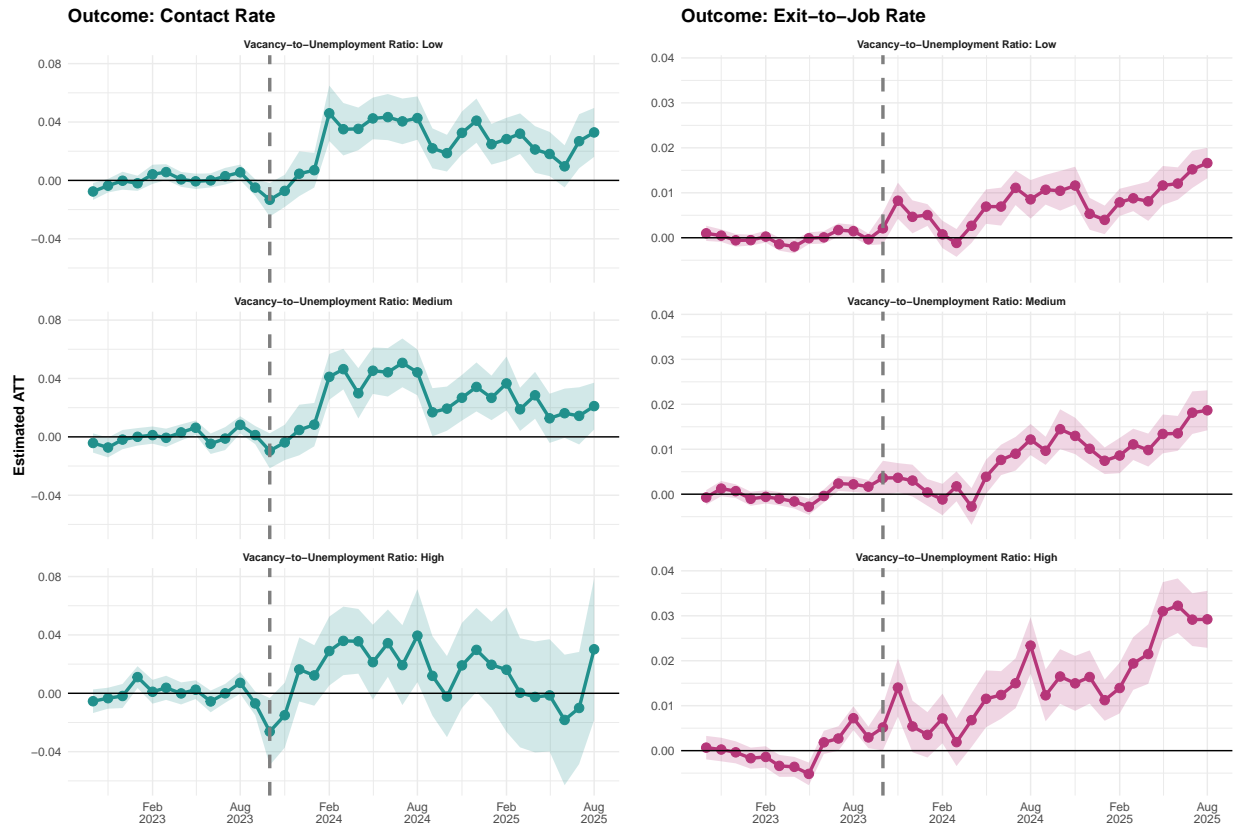Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by labor-market tightness. The treatment group is unemployed other refugees; the control group is unemployed Germans. Job centers are grouped into terciles by their pre-treatment vacancy-to-unemployment ratio (see text for details). Estimates use data from 300 BA-operated job centers.

Figure A.31: Effects of the Job–Turbo by Job-Skill Level for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Outcome: Exit–to–Job Rate by Skill Level
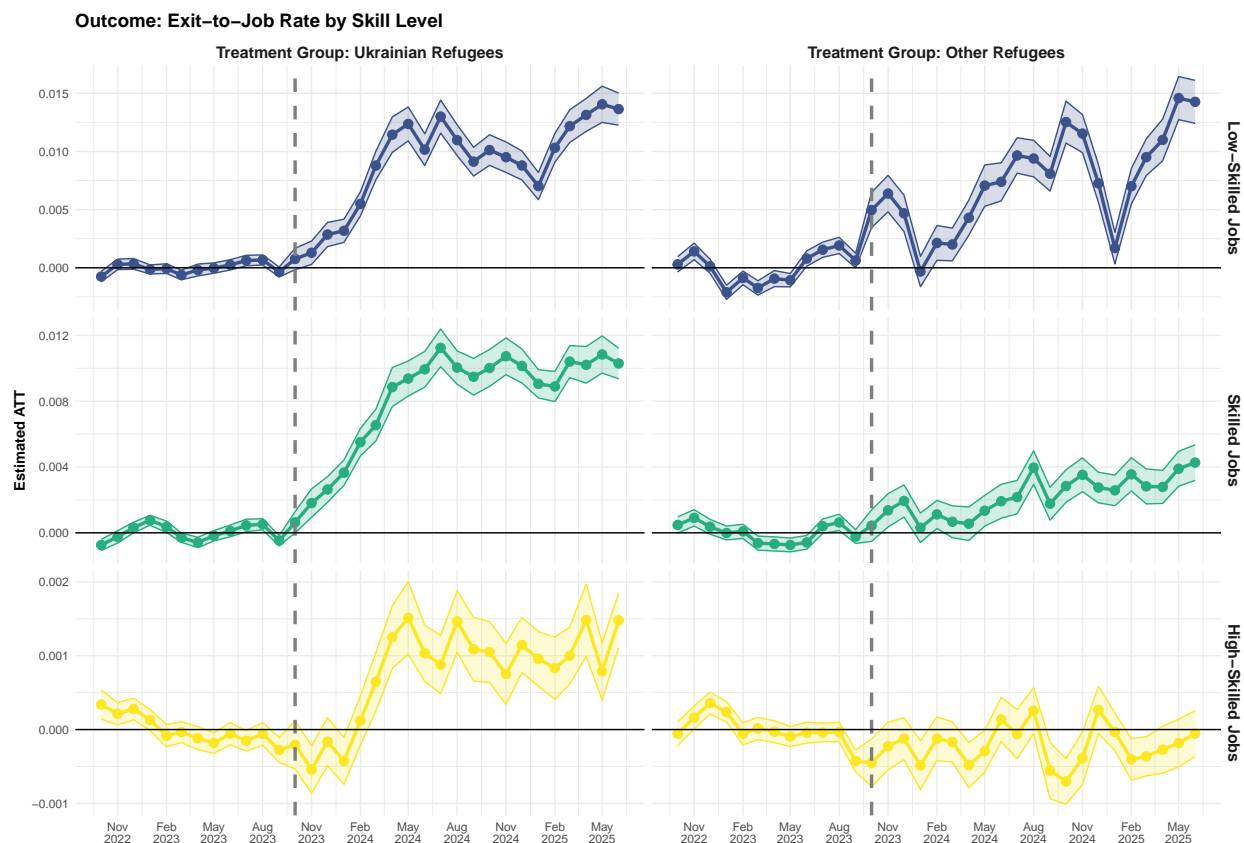
Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, disaggregated by job-skill level: low-skilled (top), skilled (middle), and high-skilled (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.32: Effects of the Job–Turbo by Employment Type for Ukrainian and Other Refugees

Outcome: Exit–to–Job Rate by Employment Type

Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, disaggregated by employment type: regular employment (top) and marginal employment (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.33: Effects of the Job–Turbo by Employment Type for Ukrainian and Other Refugees (Germans as Alternative Control Group)
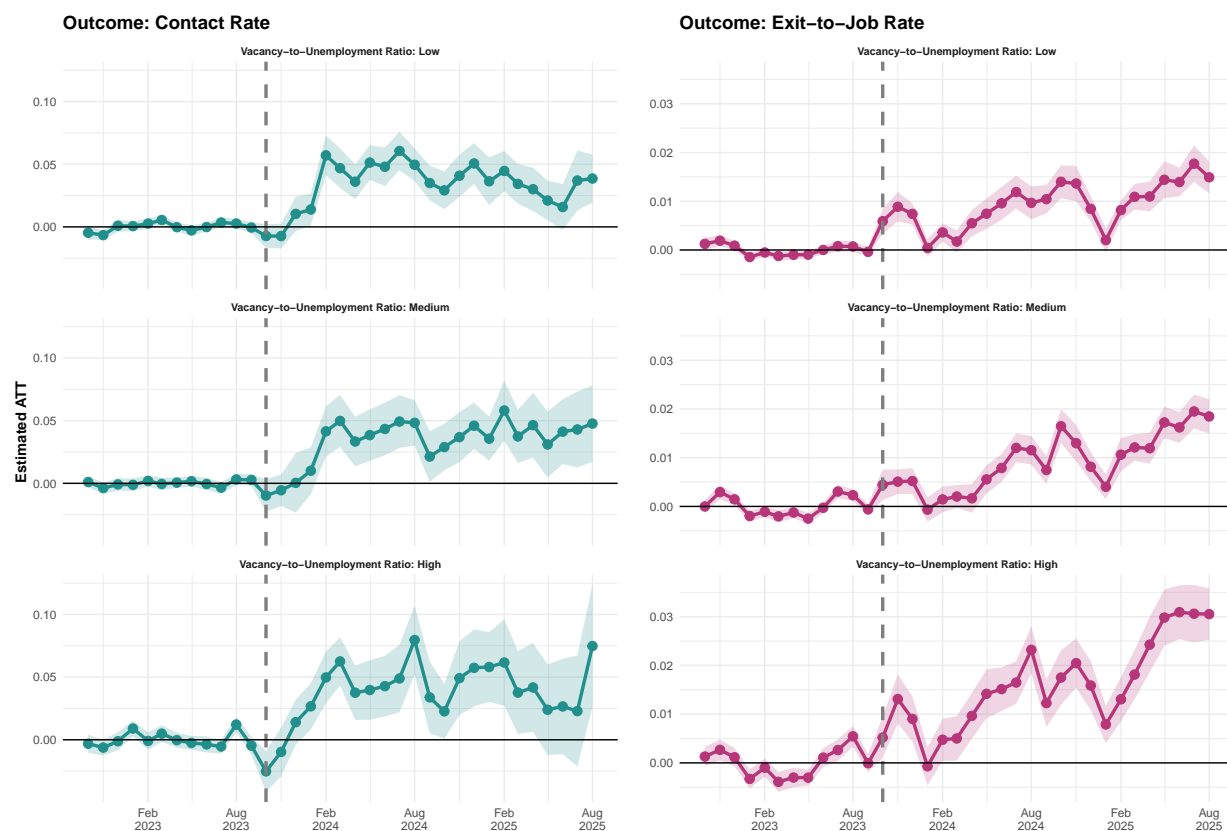

Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, disaggregated by employment type: regular employment (top) and marginal employment (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.34: Effects of the Job–Turbo on Exit Rates to Non-Job Outcomes for Ukrainian and Other Refugees

Outcome: Exit Rate to Non–Job Outcomes

Panels report ATT estimates with 95% confidence intervals from IFE for exits from unemployment to non-job outcomes—leaving the labor force (top), apprenticeship (second), training (third), and other status (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.35: Effects of the Job–Turbo on Exit Rates to Non-Job Outcomes for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE for exits from unemployment to non-job outcomes—leaving the labor force (top), apprenticeship (second), training (third), and other status (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.36: Effects of the Job–Turbo by Job Retention for Ukrainian and Other Refugees (Germans as Alternative Control Group)
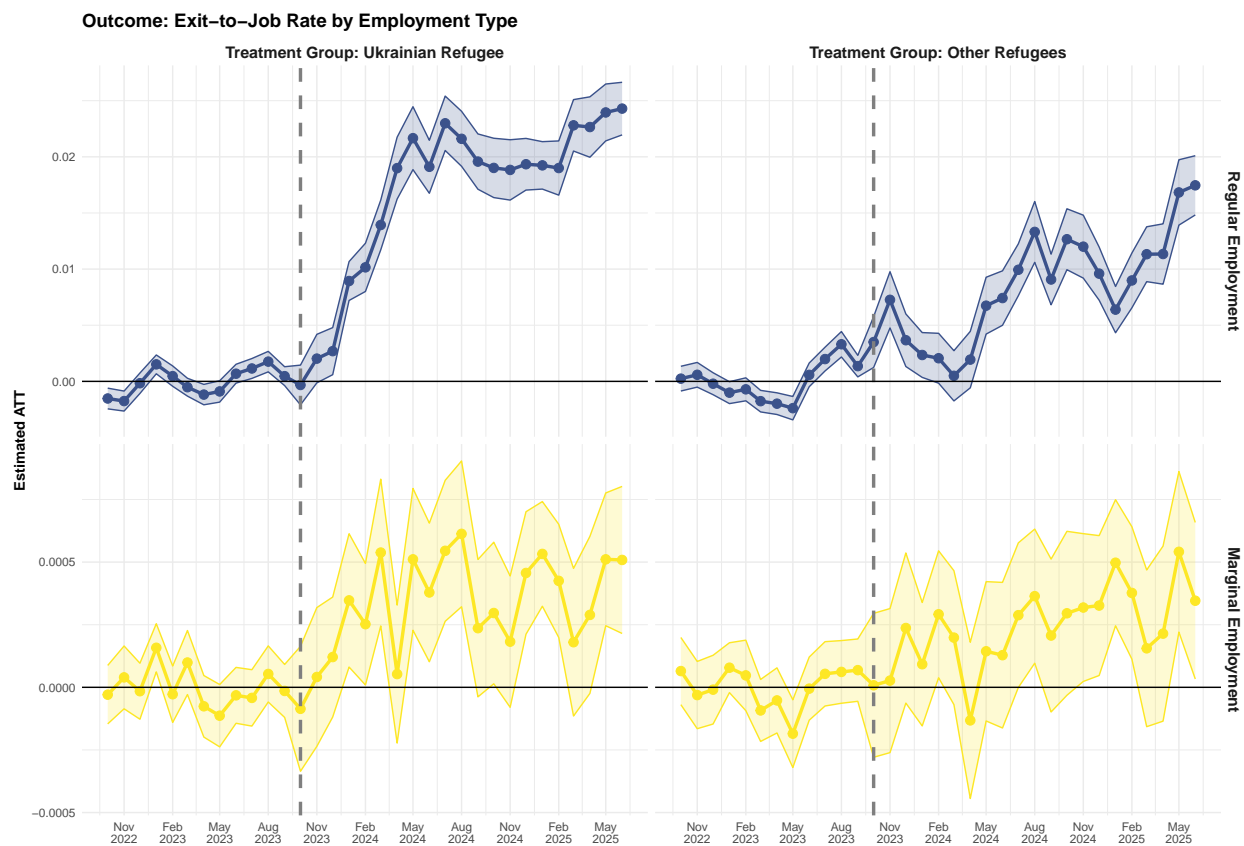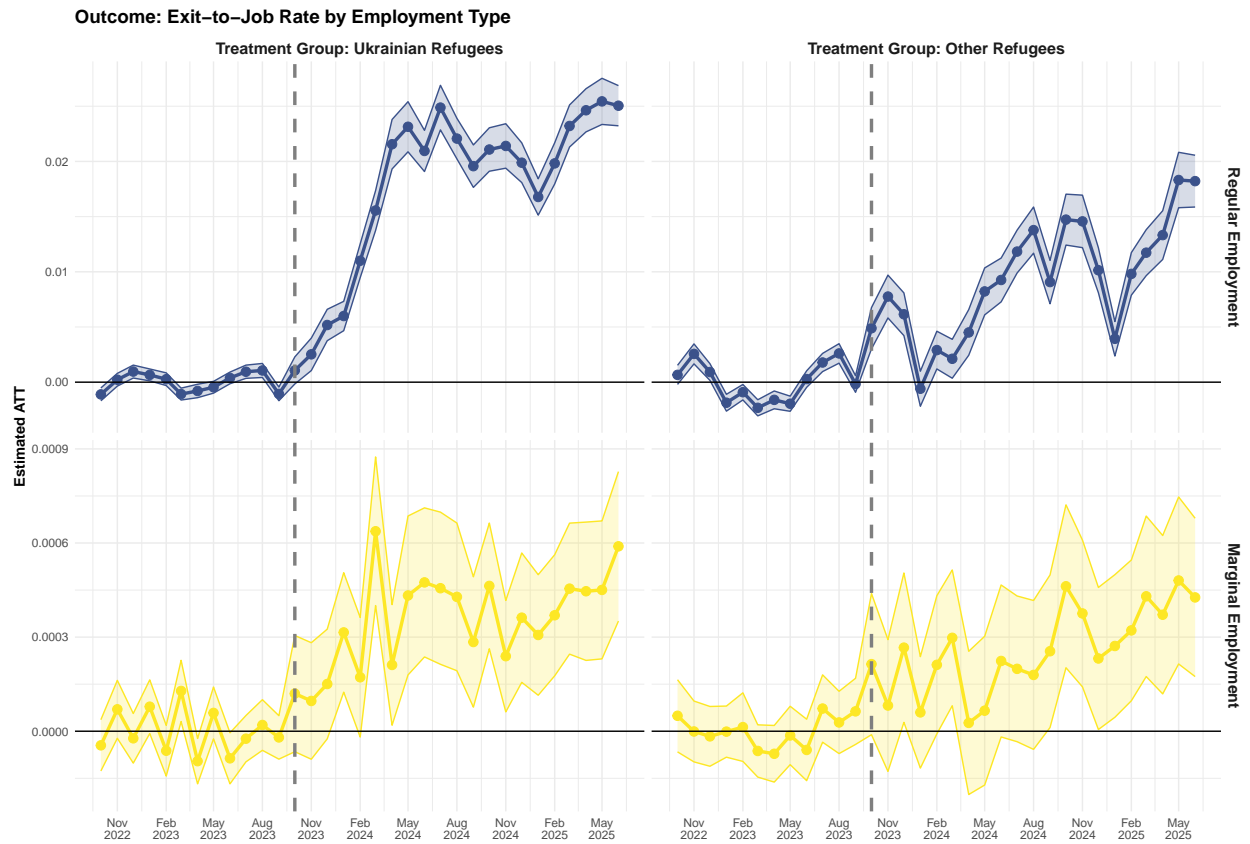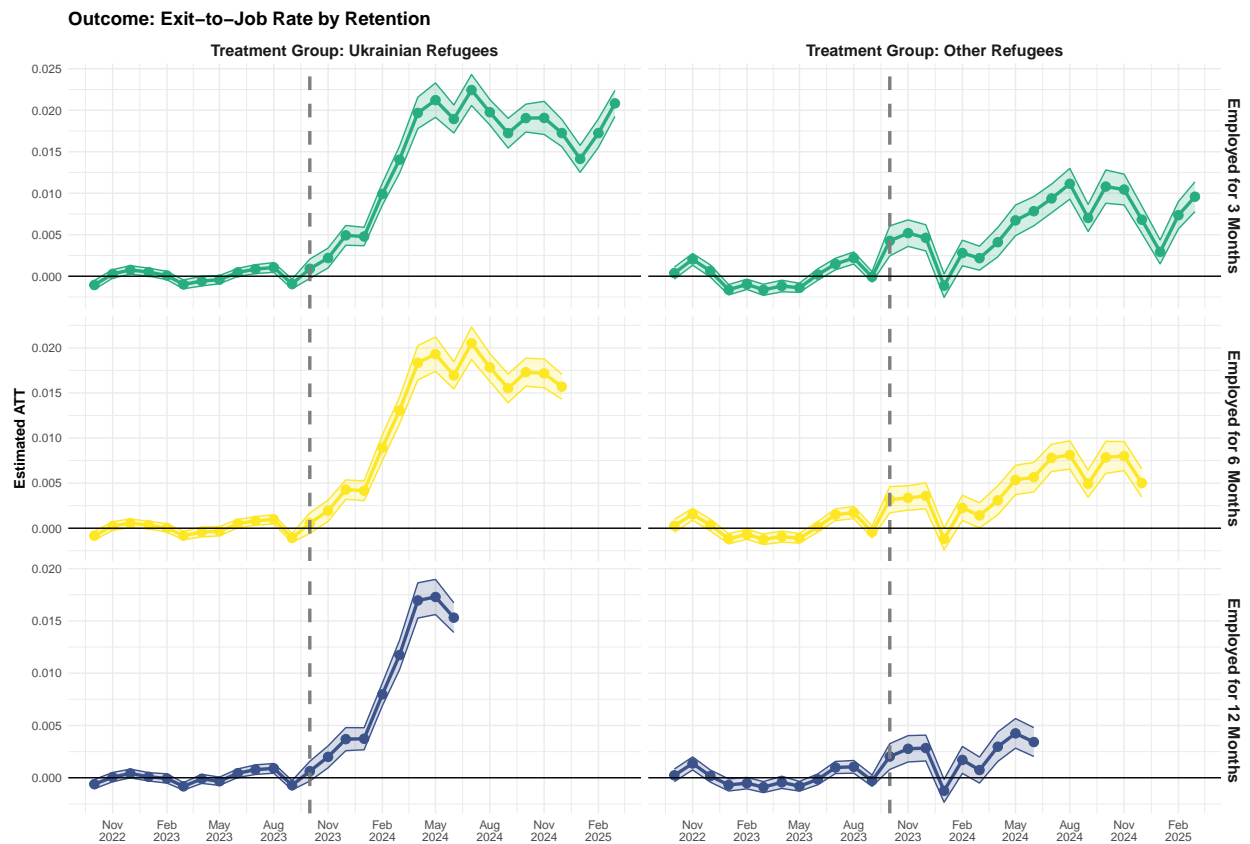

Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates conditional on job retention. Top: retained at least 3 months; middle: at least 6 months; bottom: at least 12 months. Results are presented separately for unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.37: Effects of the Job–Turbo on the Share of Exits to Jobs with Retention for Ukrainian and Other Refugees

Panels report ATT estimates with 95% confidence intervals from IFE for the share of exits to jobs that are retained. Top: retained at least 3 months; middle: at least 6 months; bottom: at least 12 months (shown only where follow-up permits). Results are presented separately for unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.38: Effects of the Job–Turbo on the Share of Exits to Jobs with Retention for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE for the share of exits to jobs that are retained. Top: retained at least 3 months; middle: at least 6 months; bottom: at least 12 months (shown only where follow-up permits). Results are presented separately for unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.39: Effects of the Job–Turbo by Duration of Unemployment for Ukrainian and Other Refugees (Germans as Alternative Control Group)
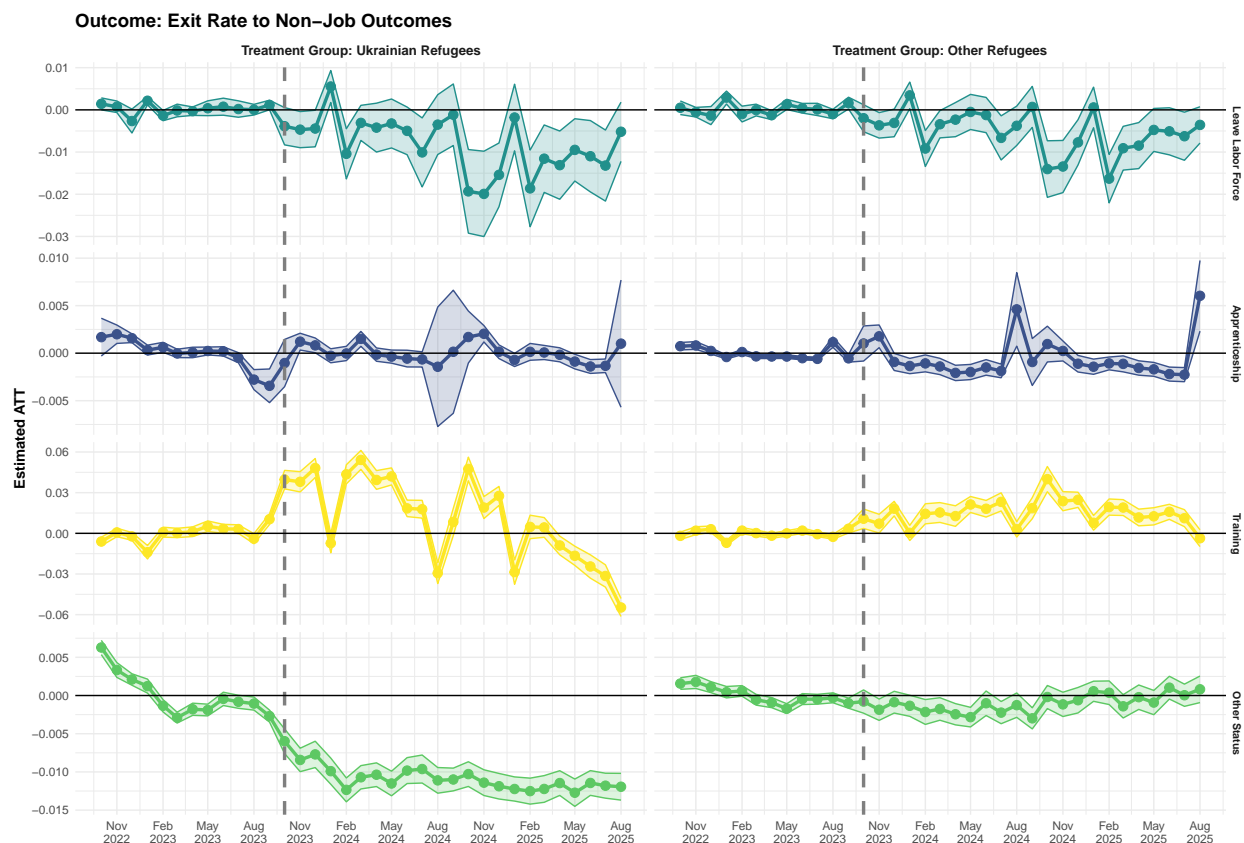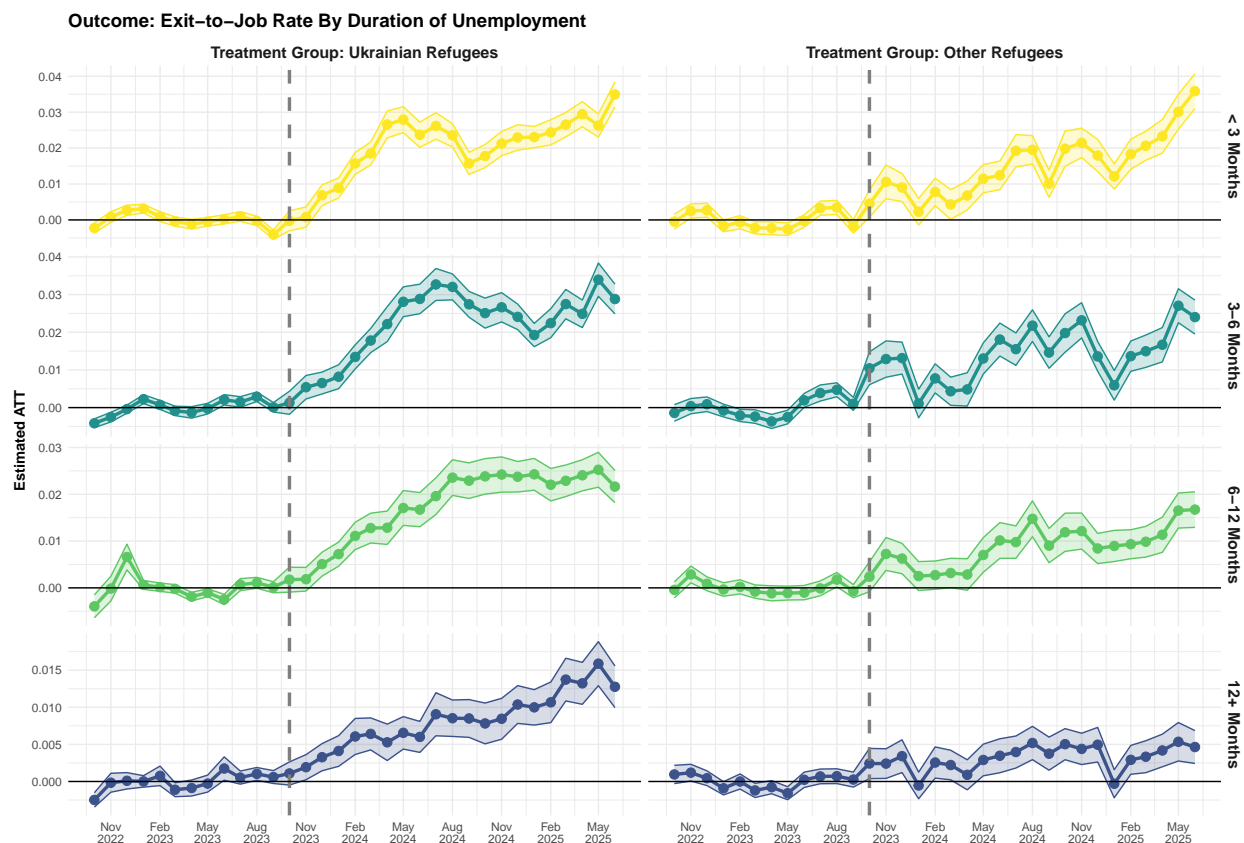
Outcome: Exit–to–Job Rate By Duration of Unemployment

Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, disaggregated by unemployment duration. From top to bottom: under 3 months; 3 to under 6 months; 6 to under 12 months; and 12 months or more. Results are presented separately for unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.40: Resource Allocation Test: Change in Contact Rates for Non-Refugee Un-employed Job Seekers After the Job–Turbo by Pre–Job–Turbo Refugee Client Share and Client-to-Staff FTE Ratio (Binned Scatterplot)
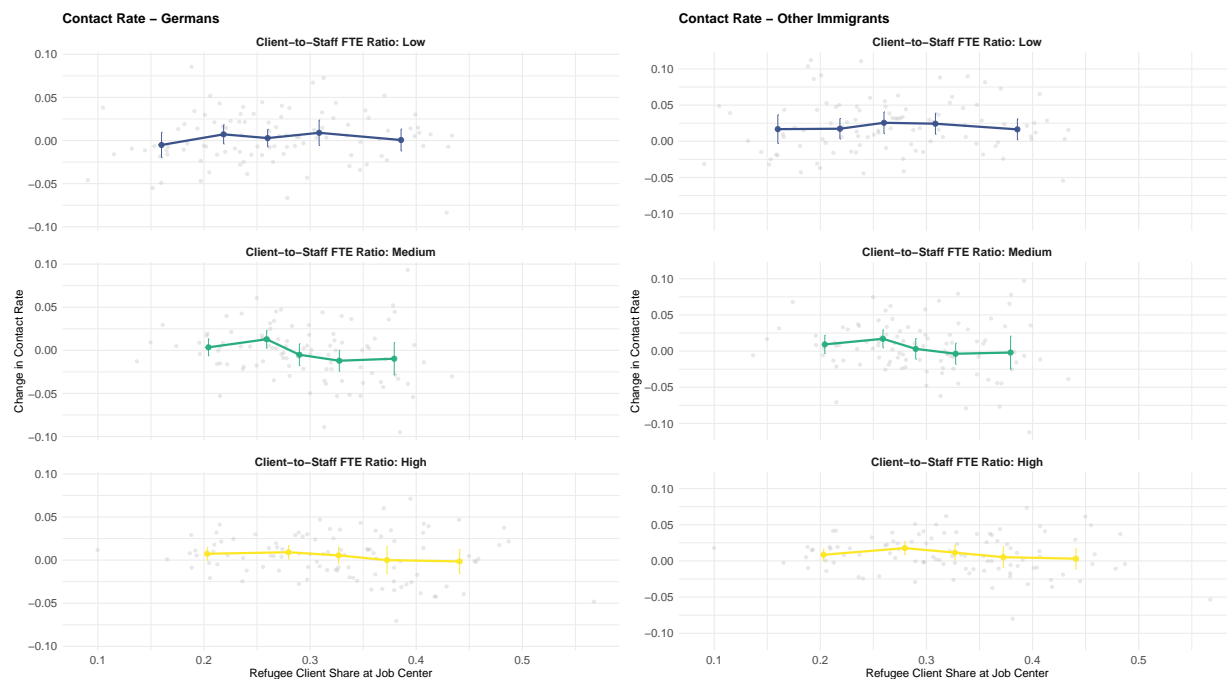
Binned scatterplots show the change in contact rates for unemployed German job seekers (left) and unemployed other-immigrant job seekers (right) following the launch of the Job–Turbo, plotted against the pre–Job–Turbo refugee client share (x-axis) and conditional on terciles of the client-to-staff FTE ratio (top, middle, bottom). Colored points indicate bin averages with 95% confidence intervals; gray points show underlying job-center data. Estimates use data from 300 BA-operated job centers.

Figure A.41: Resource Allocation Test: Change in Contact Rates for Non-Refugee Un-
employed Job Seekers After the Job–Turbo by Pre–Job–Turbo Refugee Client Share and
Client-to-Staff FTE Ratio (Tile Plot)
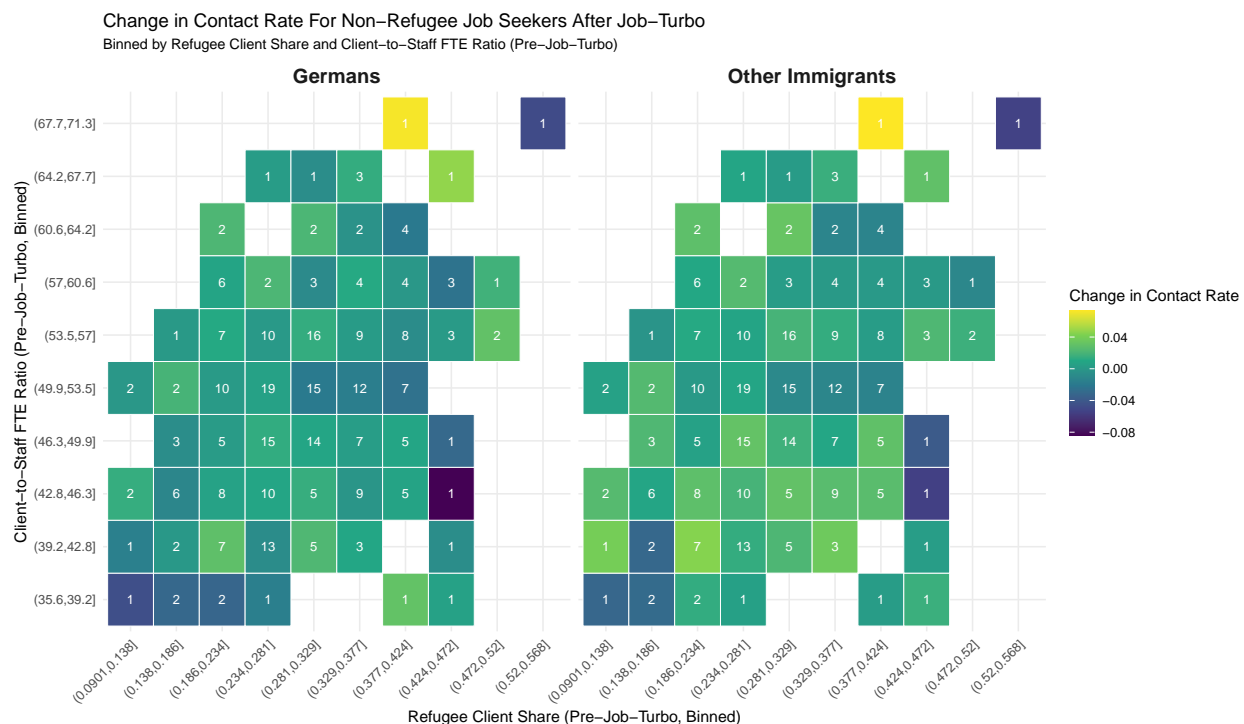
Tiles visualize the change in contact rates for unemployed German job seekers (left) and unemployed
other-immigrant job seekers (right) after the launch of the Job–Turbo, as a function of the pre–
Job–Turbo refugee client share (x-axis) and the client-to-staff FTE ratio (y-axis). Moderators are
grouped into deciles. Numbers in each tile indicate the number of job centers in that cell. Estimates
use data from 300 BA-operated job centers.

Figure A.42: Displacement Test: Change in Exit-to-Job Rates for Unemployed German Job Seekers After the Job–Turbo by Pre–Job–Turbo Refugee Client Share and Vacancy-to-Unemployment Ratio (Binned Scatterplot)

Binned scatterplots show the change in exit-to-job rates for unemployed German job seekers (left) and unemployed other-immigrant job seekers (right) following the launch of the Job–Turbo, plotted against the pre–Job–Turbo refugee client share (x-axis) and conditional on terciles of the vacancy-to-unemployment ratio (top, middle, bottom). Colored points indicate bin averages with 95% confidence intervals; gray points show underlying job-center data. Estimates use data from 300 BA-operated job centers.

Figure A.43: Displacement Test: Change in Exit-to-Job Rates for Unemployed Other-Immigrant Job Seekers After the Job–Turbo by Pre–Job–Turbo Refugee Client Share and Vacancy-to-Unemployment Ratio (Binned Scatterplot)

Binned scatterplots show the change in exit-to-job rates for unemployed German job seekers (left) and unemployed other-immigrant job seekers (right) following the launch of the Job–Turbo, plotted against the pre–Job–Turbo refugee client share (x-axis) and conditional on terciles of the vacancy-to-unemployment ratio (top, middle, bottom). Colored points indicate bin averages with 95% confidence intervals; gray points show underlying job-center data. Estimates use data from 300 BA-operated job centers.

Figure A.44: Displacement Test: Change in Exit-to-Job Rates for Non-Refugee Unemployed Job Seekers After the Job–Turbo by Pre–Job–Turbo Refugee Client Share and Vacancy-to-Unemployment Ratio (Tile Plot)

Change in Exit–to–Job Rates After Job–Turbo: Germans
Binned by Refugee Share and Vacancy–to–Unemployed Rate (Pre–Job–Turbo)

Tiles visualize the change in exit-to-job rates for unemployed German job seekers after the launch of the Job–Turbo, by binned values of the pre–Job–Turbo refugee client share (x-axis) and the vacancy-to-unemployment ratio (y-axis). Panels show changes in the exit-to-job rate by job type: overall (top left), low-skilled (top right), skilled (bottom left), and high-skilled (bottom right). Moderators are grouped into deciles. Numbers in each tile indicate the number of job centers in that bin. Estimates use data from 300 BA-operated job centers.

Figure A.45: Displacement Test: Change in Exit-to-Job Rates for Unemployed Other-Immigrant Job Seekers After the Job–Turbo by Pre–Job–Turbo Refugee Client Share and Vacancy-to-Unemployment Ratio (Tile Plot)

Tiles visualize the change in exit-to-job rates for unemployed other-immigrant job seekers after the launch of the Job–Turbo, by binned values of the pre–Job–Turbo refugee client share (x-axis) and the vacancy-to-unemployment ratio (y-axis). Panels show changes in the exit-to-job rate by job type: overall (top left), low-skilled (top right), skilled (bottom left), and high-skilled (bottom right). Moderators are grouped into deciles. Numbers in each tile indicate the number of job centers in that bin. Estimates use data from 300 BA-operated job centers.

Figure A.46: Effects of the Job–Turbo by Job Type With and Without Wage Subsidies for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Outcome: Exit–to–Job Rate by Wage Subsidy
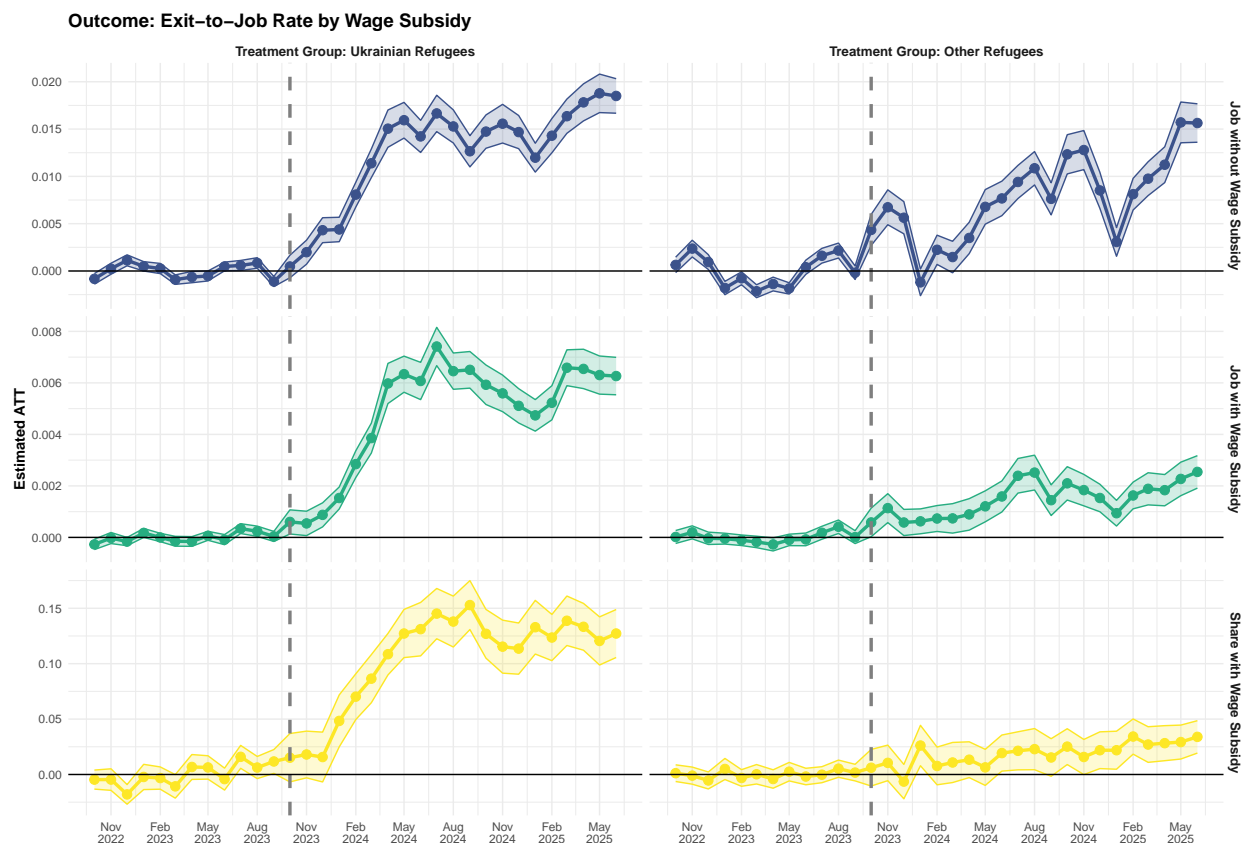
Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, disaggregated by job type: without wage subsidies (top), with wage subsidies (middle), and the share of exits involving a wage subsidy (bottom). Treatment groups are unemployed Ukrainian refugees (left) and unemployed other refugees (right); the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.47: Sanction Rates by Group
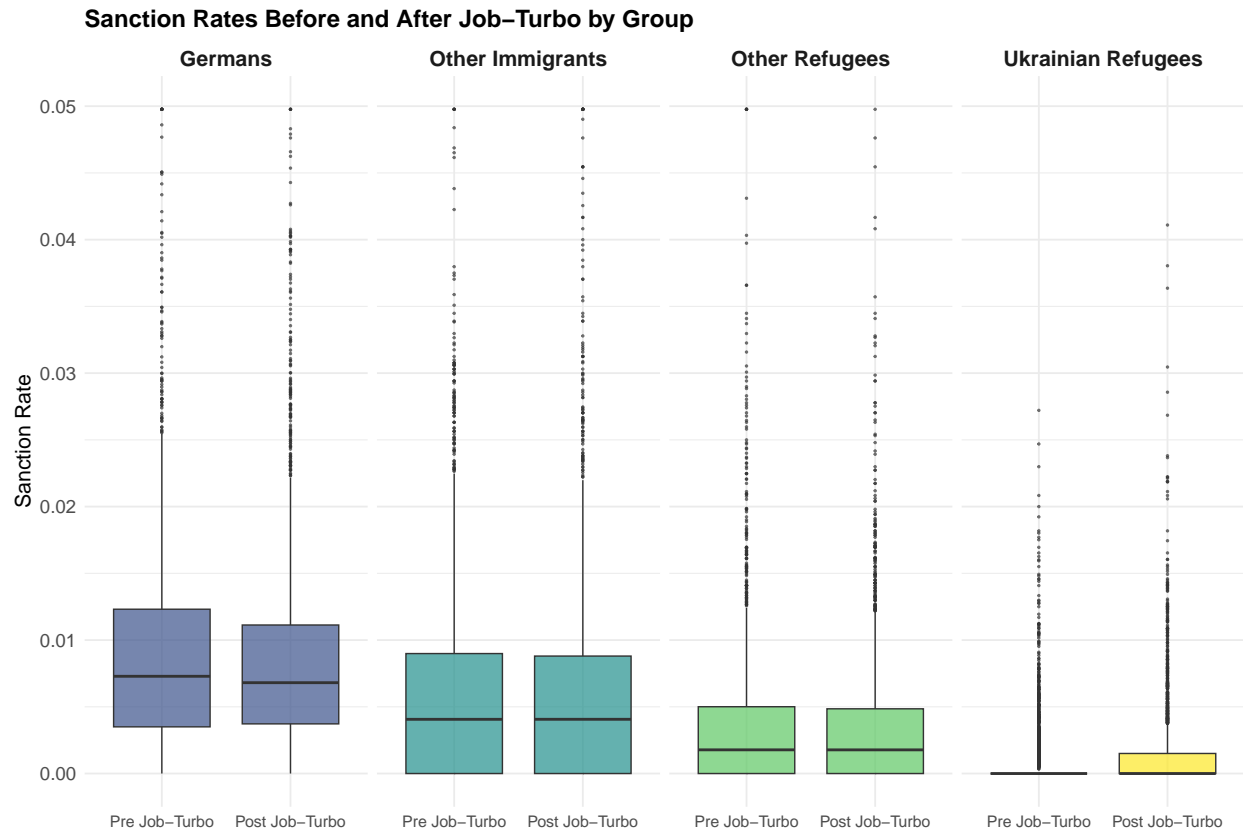
Box plots show the distribution of sanction rates across the 300 BA-operated job centers, by group and period, before and after the onset of the Job-Turbo program.

Figure A.48: Effects of the Job–Turbo by Client-to-Staff FTE Ratio for Ukrainian Refugees
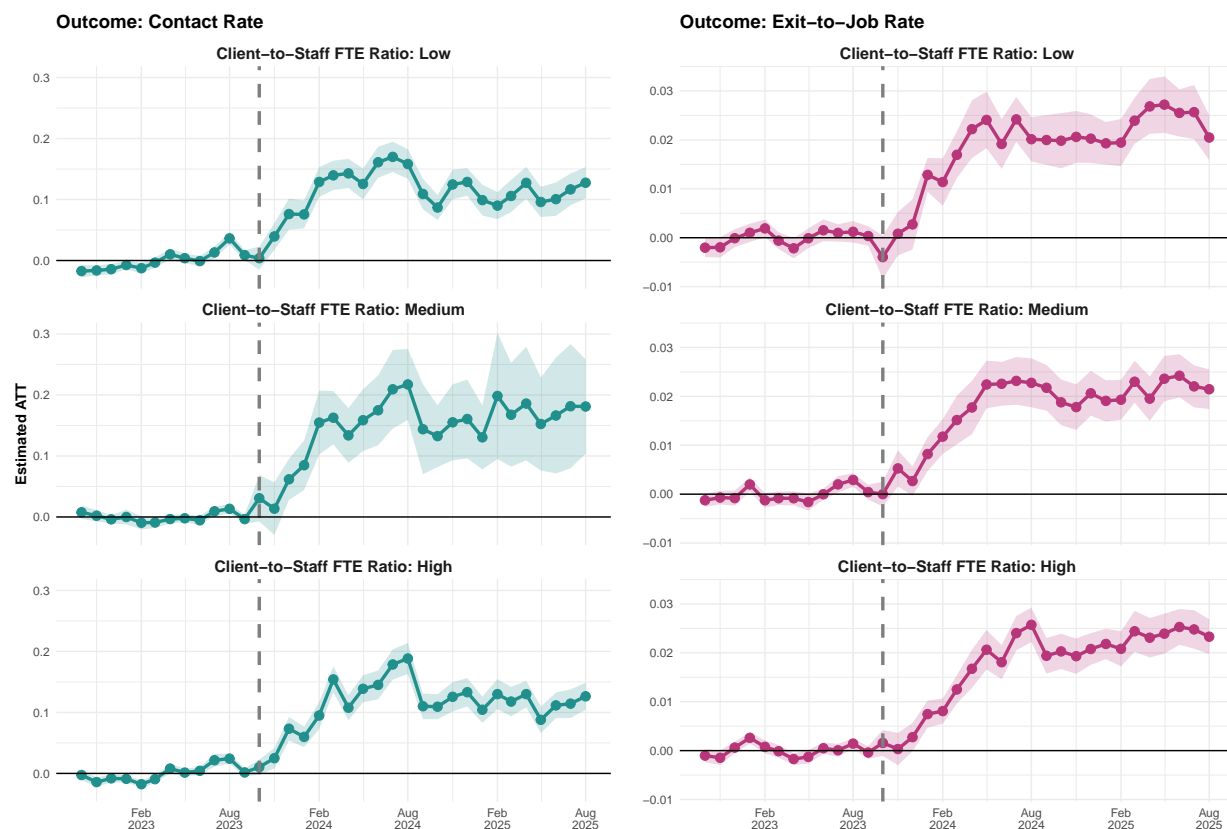
Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by the client-to-staff FTE ratio (clients per FTE staff member, averaged over the pre-treatment period). The treatment group is unemployed Ukrainian refugee job seekers; the control group is unemployed other-immigrant job seekers. Estimates use data from 300 BA-operated job centers.

Figure A.49: Effects of the Job–Turbo by Client-to-Staff FTE Ratio for Ukrainian Refugees (Germans as Alternative Control Group)

Outcome: Contact Rate

Outcome: Exit–to–Job Rate

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by the client-to-staff FTE ratio (clients per FTE staff member, averaged over the pre-treatment period). The treatment group is unemployed Ukrainian refugee job seekers; the control group is unemployed German job seekers. Estimates use data from 300 BA-operated job centers.

Figure A.50: Effects of the Job–Turbo by Client-to-Staff FTE Ratio for Other Refugees
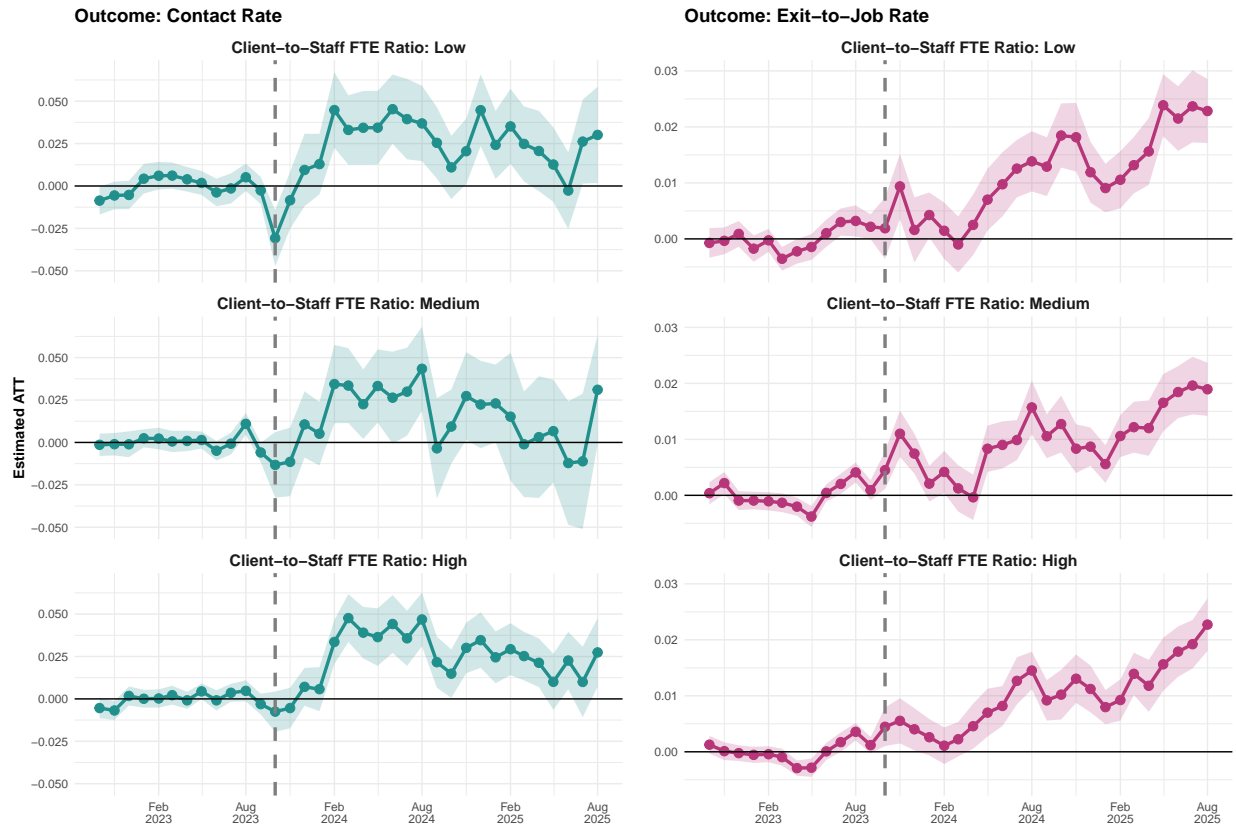
Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by the client-to-staff FTE ratio (clients per FTE staff member, averaged over the pre-treatment period). The treatment group is unemployed other-refugee job seekers; the control group is unemployed other-immigrant job seekers. Estimates use data from 300 BA-operated job centers.

Figure A.51: Effects of the Job–Turbo by Client-to-Staff FTE Ratio for Other Refugees (Germans as Alternative Control Group)

Outcome: Contact Rate

Client–to–Staff FTE Ratio: Low

Client–to–Staff FTE Ratio: Medium

Client–to–Staff FTE Ratio: High

Outcome: Exit–to–Job Rate

Client–to–Staff FTE Ratio: Low

Client–to–Staff FTE Ratio: Medium

Client–to–Staff FTE Ratio: High

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by the client-to-staff FTE ratio (clients per FTE staff member, averaged over the pre-treatment period). The treatment group is unemployed other-refugee job seekers; the control group is unemployed German job seekers. Estimates use data from 300 BA-operated job centers.

Figure A.52: Effects of the Job–Turbo by Refugee- and Employer-Specific Teams for Ukrainian Refugees
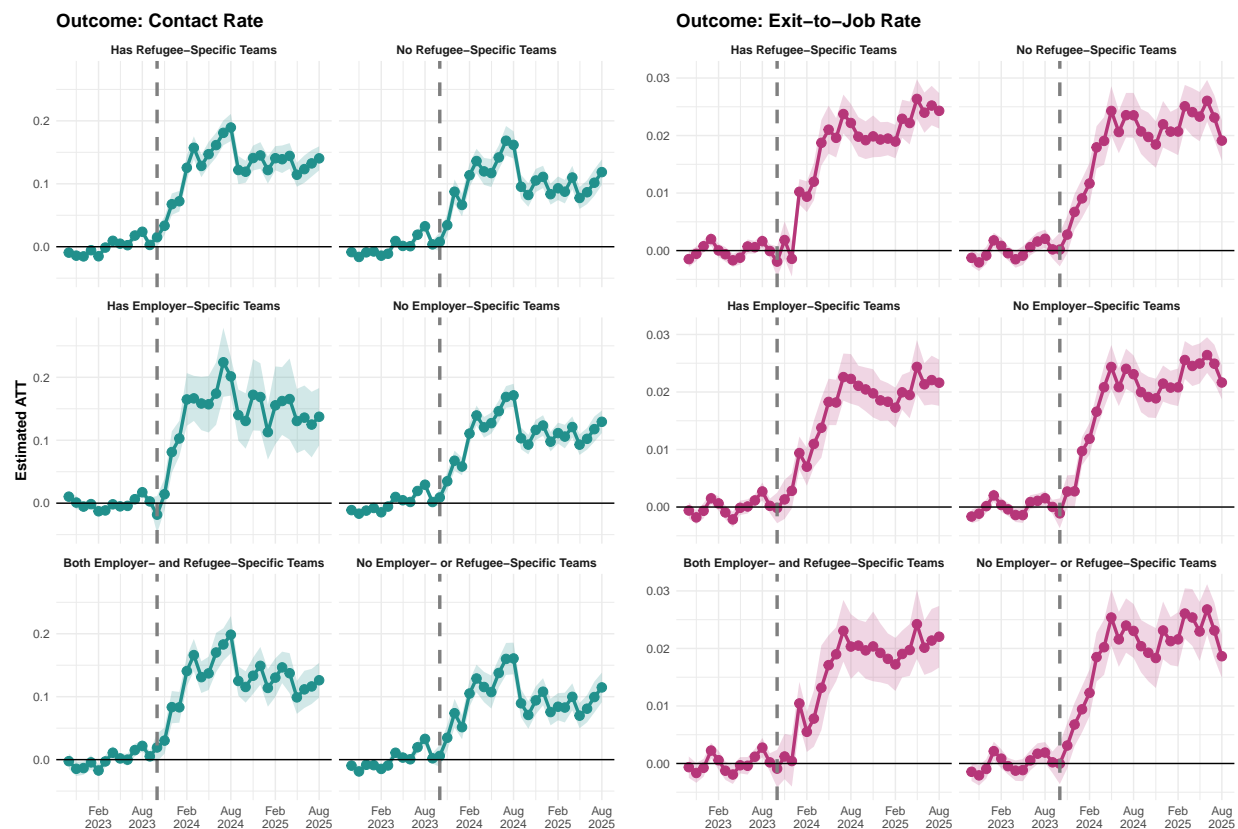
Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by whether job centers had refugee-specific and/or employer-specific teams. The treatment group is unemployed Ukrainian refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers; team status measured as of June 2024 (see text).

Figure A.53: Effects of the Job–Turbo by Refugee- and Employer-Specific Teams for Ukrainian Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by whether job centers had refugee-specific and/or employer-specific teams. The treatment group is unemployed Ukrainian refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers; team status measured as of June 2024 (see text).

Figure A.54: Effects of the Job–Turbo by Refugee- and Employer-Specific Teams for Other Refugees
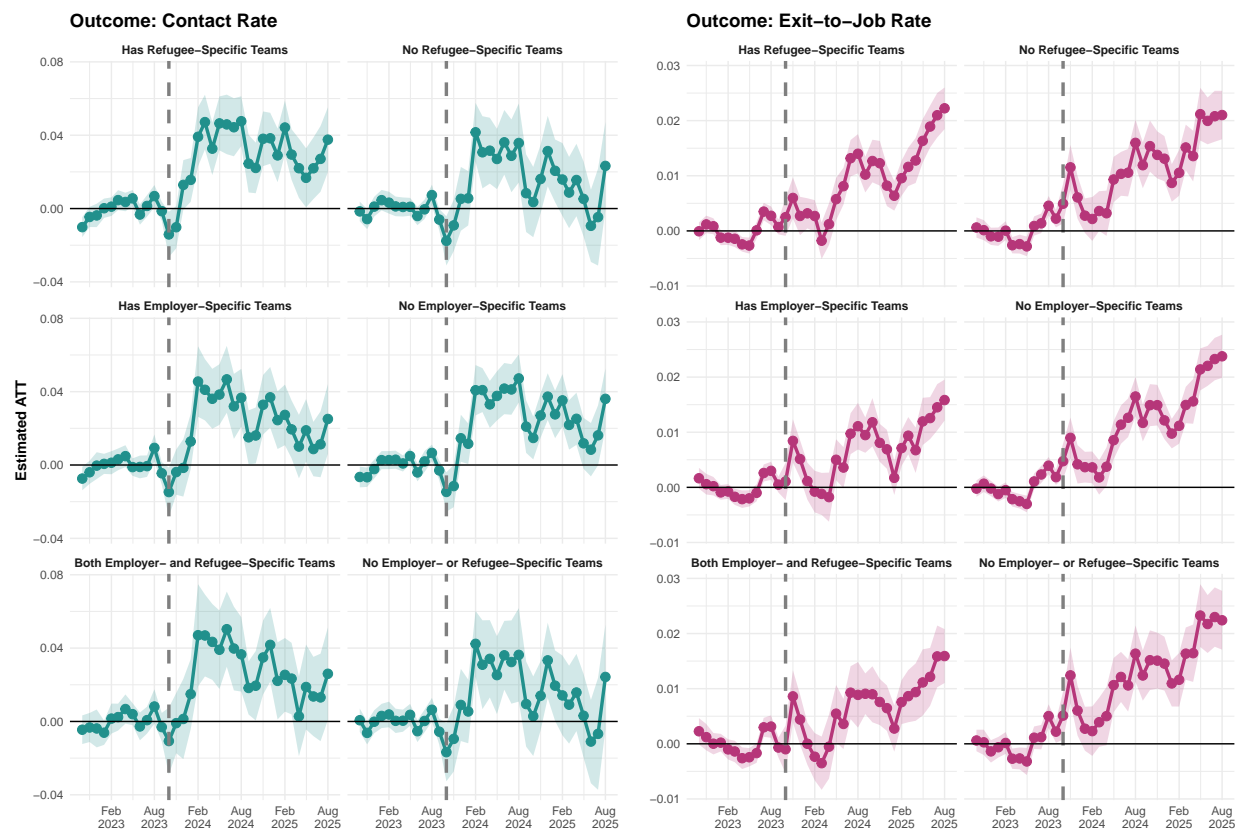
Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by whether job centers had refugee-specific and/or employer-specific teams. The treatment group is unemployed other refugees; the control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers; team status measured as of June 2024 (see text).

Figure A.55: Effects of the Job–Turbo by Refugee- and Employer-Specific Teams for Other Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE. Left: contact rate; right: exit-to-job rate; disaggregated by whether job centers had refugee-specific and/or employer-specific teams. The treatment group is unemployed other refugees; the control group is unemployed Germans. Estimates use data from 300 BA-operated job centers; team status measured as of June 2024 (see text).

Figure A.56: LATE: Effect of the Contact Rate on the Exit-to-Job Rate (Overall and by Gender)
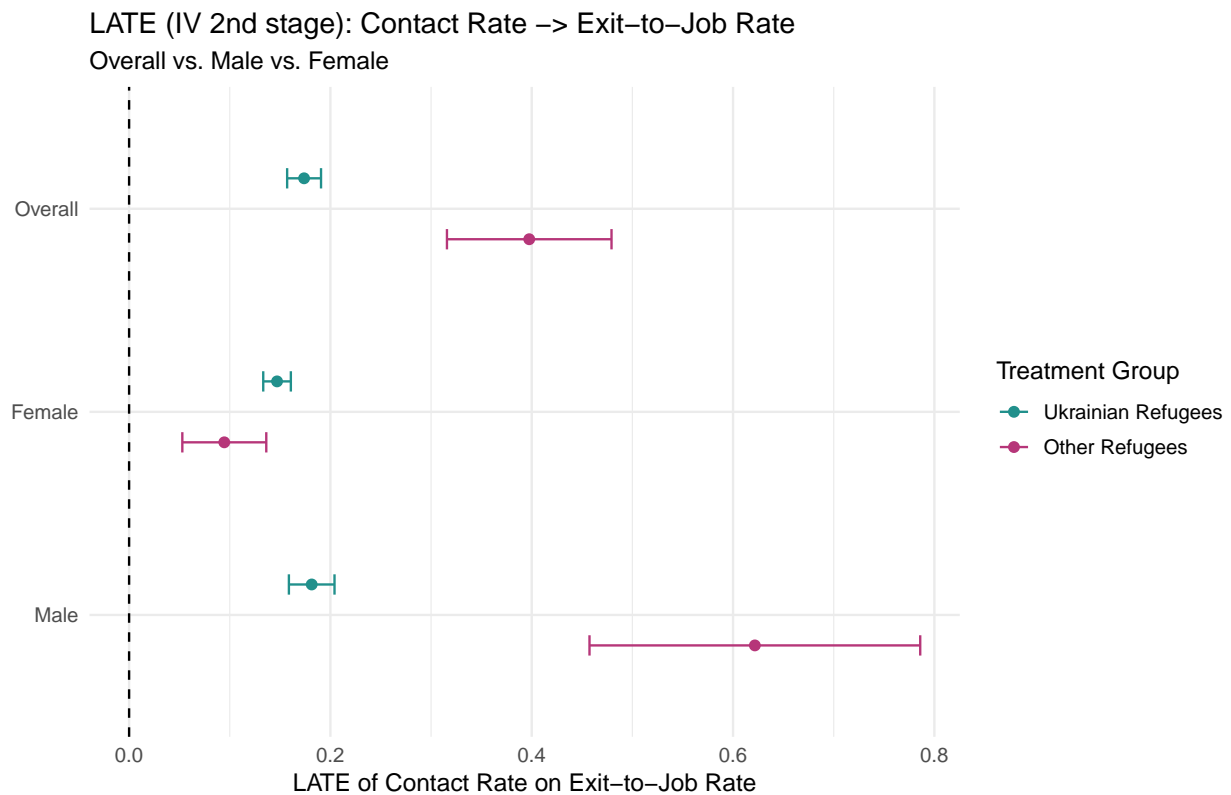
Points are LATE estimates of the effect of the contact rate on the exit-to-job rate using other immigrants as the control group; whiskers denote 95% confidence intervals. The contact rate is instrumented with the *Job-Turbo* treatment indicator. Estimates are shown for the overall sample and separately for women and men, for Ukrainian refugees and other refugees. All regressions include job-center-by-group and month fixed effects; standard errors are clustered at the job-center level. Estimates use data from 300 BA-operated job centers.

Figure A.57: Effects of the Job–Turbo by Gender and Job-Skill Level for Ukrainian and Other Refugees
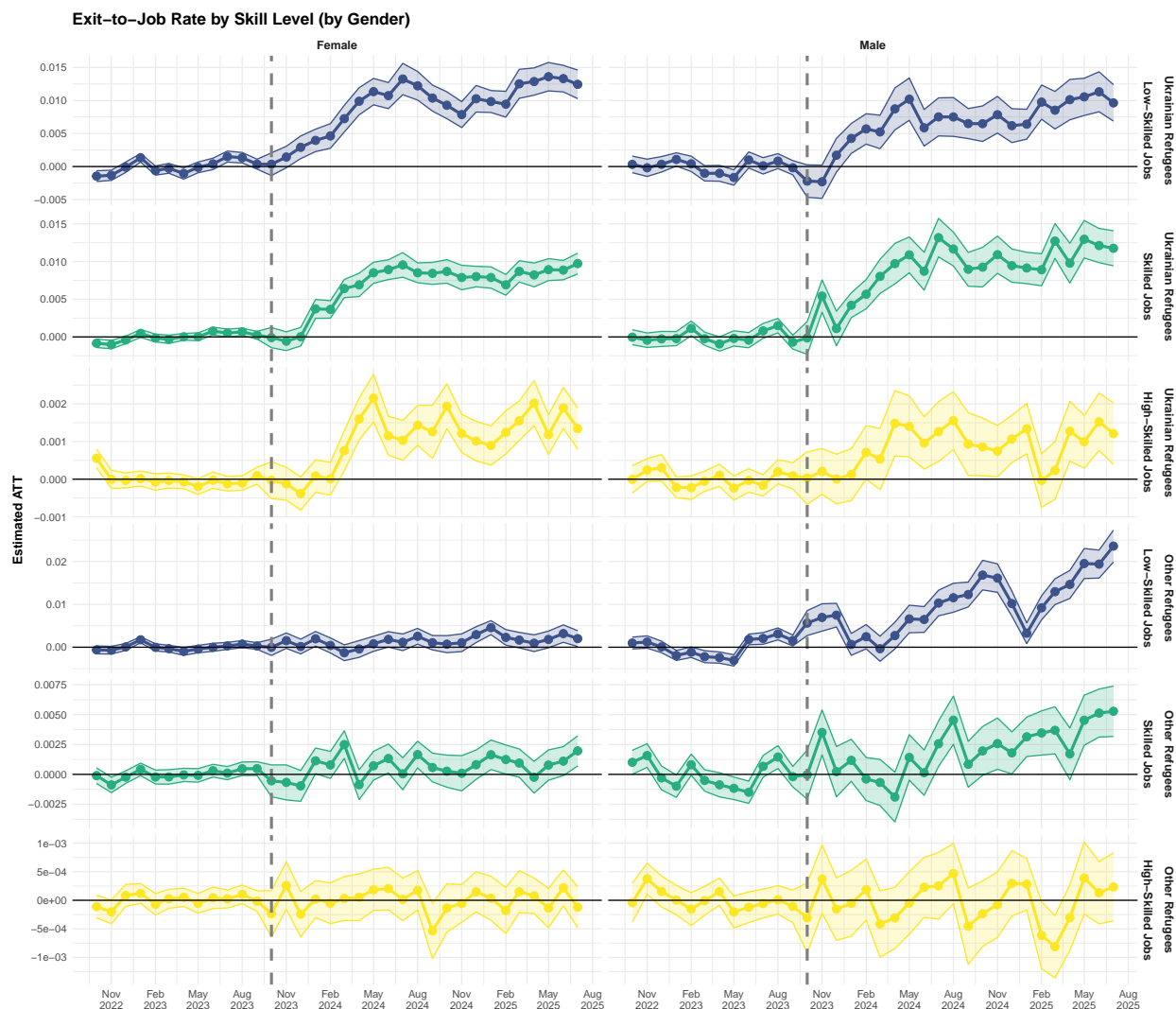
Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, dis-aggregated by gender and job-skill level. Left column: females; right column: males. Panels are arranged in six rows: rows 1–3 report results for unemployed Ukrainian refugees (low-skilled, skilled, high-skilled, respectively), and rows 4–6 report results for unemployed other refugees (low-skilled, skilled, high-skilled, respectively). The control group is unemployed other immigrants. Estimates use data from 300 BA-operated job centers.

Figure A.58: Effects of the Job–Turbo by Gender and Job-Skill Level for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Panels report ATT estimates with 95% confidence intervals from IFE for exit-to-job rates, disaggregated by gender and job-skill level. Left column: females; right column: males. Panels are arranged in six rows: rows 1–3 report results for unemployed Ukrainian refugees (low-skilled, skilled, high-skilled, respectively), and rows 4–6 report results for unemployed other refugees (low-skilled, skilled, high-skilled, respectively). The control group is unemployed Germans. Estimates use data from 300 BA-operated job centers.

Figure A.59: Effects of the Job–Turbo on the Exit-to-Job Rate in *Optionskommunen* for Ukrainian and Other Refugees
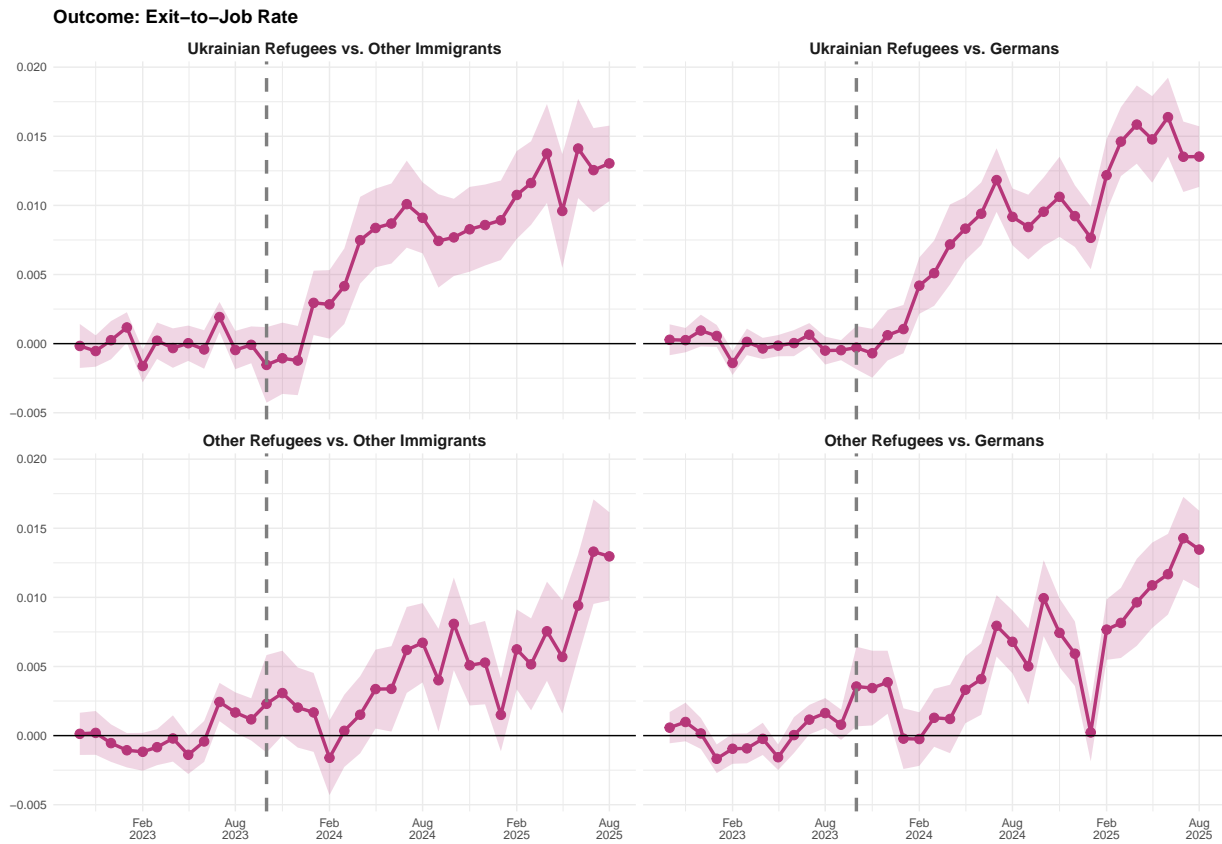
Panels report intention-to-treat (ITT) estimates with 95% confidence intervals from IFE for the exit-to-job rate. Top: unemployed Ukrainian refugees; bottom: unemployed other refugees. Within each, the left panel uses unemployed other immigrants as the control group; the right panel uses unemployed Germans. Estimates use data from 104 *Optionskommunen*—job centers independently operated by municipalities.

Figure A.60: Effects of the Job–Turbo on Exit Rates to Non-Job Outcomes in *Optionskommunen* for Ukrainian and Other Refugees

Panels report ITT estimates with 95% confidence intervals from IFE for exits to non-job outcomes—leaving the labor force (top), apprenticeship (second), training (third), and other status (bottom). Left: unemployed Ukrainian refugees; right: unemployed other refugees. The control group is unemployed other immigrants. Estimates use data from 104 *Optionskommunen*—job centers independently operated by municipalities.

Figure A.61: Effects of the Job–Turbo on Exit Rates to Non-Job Outcomes in *Optionskommunen* for Ukrainian and Other Refugees (Germans as Alternative Control Group)

Panels report ITT estimates with 95% confidence intervals from IFE for exits to non-job outcomes—leaving the labor force (top), apprenticeship (second), training (third), and other status (bottom). Left: unemployed Ukrainian refugees; right: unemployed other refugees. The control group is unemployed Germans. Estimates use data from 104 *Optionskommunen*—job centers independently operated by municipalities.

Figure A.62: Effects of the Job–Turbo on the Exit-to-Job Rate by Job Type With and Without Wage Subsidies in *Optionskommunen*

Outcome: Exit–to–Job Rate by Wage Subsidy

Panels report ITT estimates with 95% confidence intervals from IFE for exit-to-job rates by job type: with wage subsidies (top) and without wage subsidies (middle); bottom shows the share of exits involving a wage subsidy. Left: unemployed Ukrainian refugees; right: unemployed other refugees. The control group is unemployed other immigrants. Estimates use data from 104 *Optionskommunen*—job centers independently operated by municipalities.

Figure A.63: Effects of the Job–Turbo on Exit-to-Job Rates by Job Type With and Without Wage Subsidies in *Optionskommunen* (Germans as Alternative Control Group)
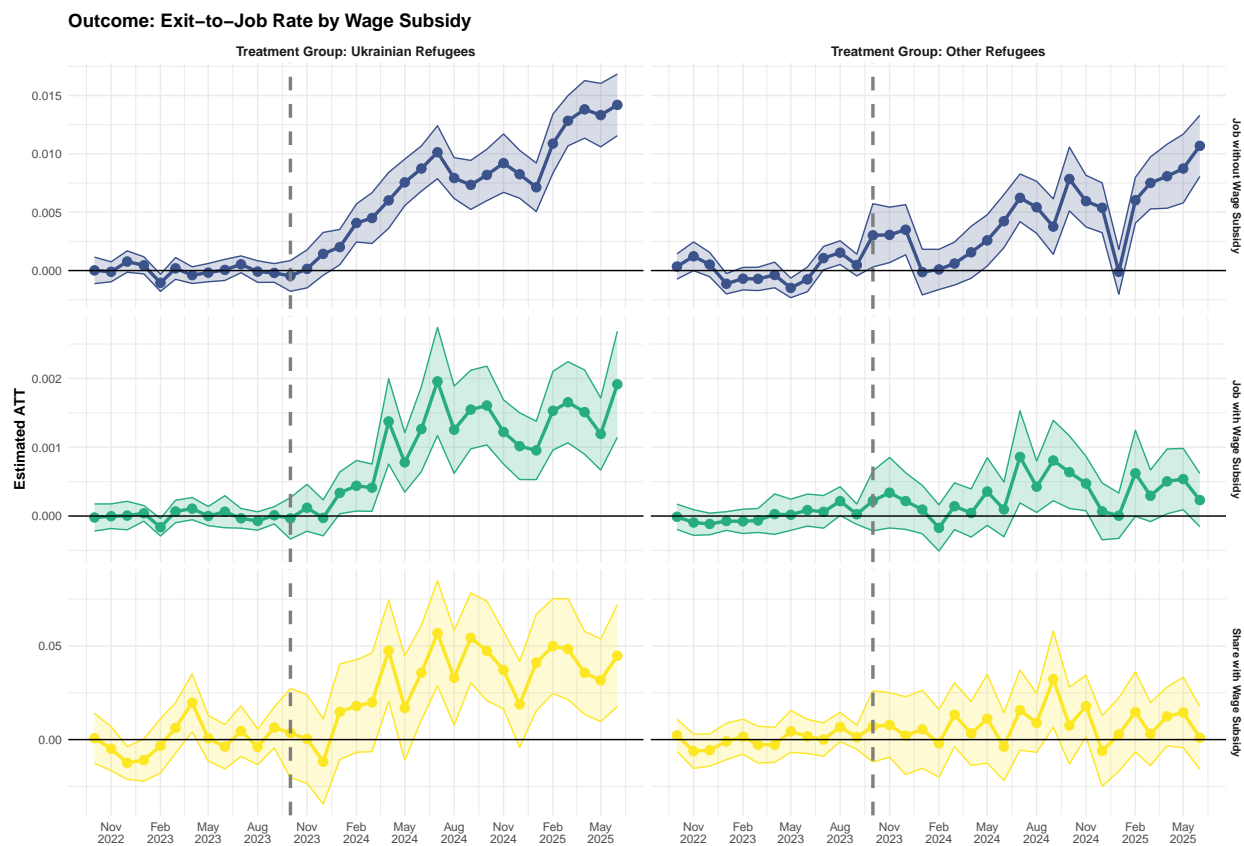
Outcome: Exit–to–Job Rate by Wage Subsidy

Panels report ITT estimates with 95% confidence intervals from IFE for exit-to-job rates by job type: with wage subsidies (top) and without wage subsidies (middle); bottom shows the share of exits involving a wage subsidy. Left: unemployed Ukrainian refugees; right: unemployed other refugees. The control group is unemployed Germans. Estimates use data from 104 *Optionskommunen*—job centers independently operated by municipalities.

Appendix Tables

Table A.1: Job-Turbo timeline

Date	Event	Details
10-18-2023	Job-Turbo formally announced at a press conference by the Ministry of Labor and Social Affairs (BMAS) and the Federal Employment Agency (BA).	During the press conference, it was announced that job centers should intensify support by proactively inviting refugees after they complete integration courses and placing them in jobs even with German at levels A2/B1. Daniel Terzenbach was appointed as the government's special commissioner to coordinate the program [38].
11-20-2023	National labor-market summit in Berlin.	At a national labor-market summit in Berlin, the federal government together with the BA, leading employers' associations, unions, major employers and municipal bodies sign a joint declaration in support of the Job-Turbo. The agreement commits participating companies to hire refugees even if they speak only basic German, and calls for collaborative efforts (e.g. company training and language support) to integrate refugees sustainably [71].
01-05-2024	The BA issues a directive on how job centers should consult refugees.	The directive states that after refugees have completed an integration course, job placement should be prioritized over skill recognition or further language training. Furthermore, for the six months after course completion, refugees should be invited for consultations every six weeks. This directive replaces an earlier directive, which had stated that for Ukrainian refugees, skill recognition and skill-appropriate employment should be prioritized [37, 72].
01-05-2024	The BA issues a directive on more efficient access to integration courses	The directive clarifies administrative details intended to enable faster registration for integration courses and to expand the availability of part-time courses that refugees can attend while already employed [73].
01-10-2024	Meeting of Labor Minister Heil, Ukraine's Ambassador Oleksii Makeiev, and Special Commissioner Terzenbach in Berlin.	All parties agreed that BMAS, BA and the Ukrainian embassy should closely cooperate in improving outreach to Ukrainian refugees, sharing job-opportunity information, and speeding up credential recognition and job matching [74].
01-30 to 02-01-2024	First nationwide Job-Turbo "Aktionstage" (Action Days).	Over three days, refugees who have finished integration courses were invited to one-hour virtual meetings with recruiters from businesses across Germany [75].
01-31-2024	The Federal Office for Migration (BAMF) introduces a pilot workplace-focused German language course for refugees.	Part-time courses (planned to start by spring 2024) to be conducted in small groups if possible at employers' sites, with content tailored to specific jobs[76].
01-31-2024	BAMF informs integration course providers about the new directives from January 5th.	BAMF finances the integration courses and is therefore responsible for the direct communication with the course providers [77].
04-22 to 04-26-2024	Job-Turbo campaign week organized by BA.	Local events such as job cafés, employer speed-dating sessions, open houses, and fairs were held to connect refugees with employers [78].

Table A.1: Job-Turbo timeline (Continued)

Date	Event	Details
05-27 to 05-29-2024	Second nationwide Job-Turbo "Aktionstage" (Action Days).	Over three days, refugees who have finished integration courses were invited to one-hour virtual meetings with recruiters from businesses across Germany [79].
07-31-2024	Tenure of the government's special commissioner ends, other policies stay in place.	The special commissioner later published a report on his work [22].

This table lists major steps of the Job-Turbo from all three phases of the program.

Only steps and events that applied to all of Germany were selected. Statewide, regional or local events are not listed.

Table A.2: Summary Statistics for Main Sample of Job Centers (Pre–Job-Turbo Period)

Variable	Overall Mean	Overall SD	Germans Mean	Germans SD	Other Immigrants Mean	Other Immigrants SD	Other Refugees Mean	Other Refugees SD	Ukrainian Refugees Mean	Ukrainian Refugees SD
Number of Unemployed	4347.005	5884.653	2431.178	3048.936	879.004	1635.545	582.393	914.401	454.430	484.114
Number of Unemployed with Contact	1180.571	1444.392	672.149	775.058	216.655	372.282	169.463	243.188	122.304	120.052
Number of Exits to Job	96.889	121.960	51.201	61.550	21.452	35.356	17.939	24.999	6.296	5.823
Contact Rate	0.290	0.068	0.288	0.069	0.276	0.076	0.318	0.090	0.297	0.106
Exit-to-Job Rate	0.025	0.007	0.024	0.008	0.031	0.017	0.035	0.017	0.016	0.011
Exit-to-Job Rate: Low-Skilled Jobs	0.011	0.005	0.009	0.004	0.017	0.012	0.020	0.013	0.009	0.008
Exit-to-Job Rate: Skilled Jobs	0.010	0.003	0.011	0.004	0.010	0.008	0.011	0.008	0.005	0.005
Exit-to-Job Rate: High-Skilled Jobs	0.002	0.001	0.003	0.002	0.002	0.003	0.001	0.002	0.001	0.002
Exit-to-Job Rate: Regular Employment	0.022	0.007	0.021	0.007	0.028	0.015	0.031	0.016	0.014	0.011
Exit-to-Job Rate: Marginal Employment	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.000	0.001
Exit-to-Job Rate: Stayed Employed for 3 Months	0.018	0.005	0.017	0.006	0.023	0.013	0.025	0.014	0.012	0.010
Exit-to-Job Rate: Stayed Employed for 6 Months	0.015	0.005	0.015	0.006	0.019	0.012	0.021	0.012	0.011	0.009
Exit-to-Job Rate: Stayed Employed for 12 Months	0.012	0.004	0.012	0.005	0.015	0.010	0.016	0.010	0.009	0.008
Exit-to-Job: Share Stayed Employed for 3 Months	0.807	0.065	0.805	0.091	0.802	0.175	0.798	0.176	0.858	0.199
Exit-to-Job: Share Stayed Employed for 6 Months	0.679	0.080	0.676	0.111	0.672	0.208	0.670	0.200	0.740	0.255
Exit-to-Job: Share Stayed Employed for 12 Months	0.547	0.087	0.551	0.119	0.528	0.225	0.526	0.215	0.610	0.283
Exit-to-Job Rate: Among Unemployed for 0-3 Months	0.042	0.012	0.046	0.018	0.054	0.035	0.048	0.031	0.021	0.020
Exit-to-Job Rate: Among Unemployed for 3-6 Months	0.028	0.013	0.032	0.018	0.032	0.034	0.033	0.032	0.014	0.020
Exit-to-Job Rate: Among Unemployed for 6-12 Months	0.020	0.009	0.023	0.014	0.024	0.027	0.025	0.025	0.009	0.015
Exit-to-Job Rate: Among Unemployed for 12+ Months	0.010	0.005	0.009	0.005	0.012	0.014	0.015	0.018	0.005	0.015
Exit-to-Job Rate: With Wage Subsidy	0.003	0.002	0.003	0.003	0.003	0.004	0.004	0.005	0.002	0.003
Exit-to-Job Rate: Without Wage Subsidy	0.019	0.006	0.018	0.007	0.026	0.015	0.027	0.015	0.013	0.010
Exit-to-Job: Share with Wage Subsidy	0.139	0.094	0.155	0.115	0.098	0.128	0.123	0.144	0.124	0.181
Exit Rate: Leave Labor Force	0.074	0.022	0.089	0.029	0.085	0.035	0.044	0.022	0.035	0.019
Exit Rate: Apprenticeship	0.005	0.006	0.004	0.006	0.003	0.006	0.008	0.011	0.005	0.007
Exit Rate: Training	0.051	0.020	0.026	0.012	0.042	0.023	0.078	0.039	0.142	0.072
Exit Rate: Other Status	0.023	0.010	0.022	0.011	0.033	0.021	0.018	0.013	0.029	0.016
Staff FTE	184.632	232.542	-	-	-	-	-	-	-	-
Unemployed-to-Staff FTE Ratio	22.834	3.468	-	-	-	-	-	-	-	-
Vacancy-to-Unemployment Ratio	0.365	0.214	-	-	-	-	-	-	-	-
Refugee Share on Unemployed	0.274	0.083	-	-	-	-	-	-	-	-

[a] Note: Means and standard deviations are reported. The sample includes 300 job centers operated by the BA. All statistics are averaged over the period from January to September 2023, prior to the launch of the Job-Turbo Program. The vacancy-to-job-seeker ratio is calculated at the local labor market level. Contact rates and all exit rates are winsorized at the 99th percentile.

Table A.3: Summary Statistics for Main Sample of Job Centers: Covariates.

Variable	Germans	Other Immigrants	Other Refugees	Ukrainian Refugees
Gender				
Female	0.42	0.51	0.42	0.67
Male	0.58	0.49	0.58	0.33
Age				
15–25	0.08	0.05	0.13	0.11
25–35	0.22	0.21	0.31	0.19
35–45	0.26	0.29	0.27	0.33
45–55	0.20	0.27	0.18	0.22
55–65	0.24	0.19	0.11	0.15
Education				
No Degree	0.18	0.27	0.35	0.05
Lower Secondary	0.38	0.25	0.13	0.15
Intermediate Secondary	0.23	0.10	0.06	0.29
Upper Secondary (Specific)	0.04	0.02	0.02	0.06
Upper Secondary (General)	0.10	0.11	0.17	0.25
No Information	0.07	0.25	0.27	0.21
Vocational training				
No Vocational Qualification	0.57	0.80	0.89	0.45
Vocational Training	0.38	0.14	0.04	0.23
Academic Degree	0.05	0.06	0.07	0.32
No information	0.00	0.00	0.00	0.00

Note: Entries show, for registered unemployed persons in each group, the shares by gender, age group, highest school-leaving certificate, and vocational/academic qualification. The sample includes 300 job centers operated by the BA. All statistics are pooled over the 2024 calendar year; we restrict to 2024 because education reporting for Ukrainian refugees improved in that period. Education categories: Lower secondary = Hauptschule; Intermediate Secondary = Mittlere Reife; Upper secondary (Specific) = Fachhochschulreife; Upper secondary (General) = Allgemeine Hochschulreife (Abitur).

Table A.4: ATT Estimates for Contact Rate

Event Time	Ukrainian Refugees vs. Other Immigrants			Ukrainian Refugees vs. Germans			Other Refugees vs. Other Immigrants			Other Refugees vs. Germans		
	ATT	CI LB	CI UB	ATT	CI LB	CI UB	ATT	CI LB	CI UB	ATT	CI LB	CI UB
-11	-0.0005	-0.0039	0.0029	-0.0069	-0.0111	-0.0028	0.0101	0.0041	0.0162	0.0078	0.0019	0.0137
-10	-0.0049	-0.0082	-0.0015	-0.0059	-0.0103	-0.0015	-0.0007	-0.0062	0.0049	0.0005	-0.0053	0.0063
-9	0.0007	-0.0027	0.0041	-0.0016	-0.0057	0.0025	-0.0003	-0.0041	0.0036	-0.0013	-0.0054	0.0029
-8	0.0038	0.0001	0.0075	0.0020	-0.0017	0.0058	0.0001	-0.0062	0.0063	-0.0021	-0.0083	0.0042
-7	0.0018	-0.0017	0.0054	0.0022	-0.0017	0.0062	-0.0074	-0.0144	-0.0005	-0.0082	-0.0149	-0.0014
-6	0.0027	-0.0005	0.0060	0.0031	-0.0009	0.0070	-0.0075	-0.0126	-0.0025	-0.0090	-0.0142	-0.0039
-5	0.0003	-0.0028	0.0033	0.0016	-0.0019	0.0052	-0.0009	-0.0047	0.0029	-0.0017	-0.0064	0.0031
-4	-0.0011	-0.0038	0.0017	0.0031	-0.0006	0.0068	-0.0051	-0.0087	-0.0015	-0.0032	-0.0071	0.0007
-3	-0.0026	-0.0057	0.0005	-0.0035	-0.0073	0.0004	-0.0033	-0.0073	0.0007	-0.0049	-0.0093	-0.0005
-2	-0.0018	-0.0048	0.0013	0.0015	-0.0028	0.0058	0.0082	0.0019	0.0145	0.0064	-0.0001	0.0128
-1	0.0062	0.0030	0.0095	0.0077	0.0037	0.0116	0.0123	0.0074	0.0171	0.0110	0.0060	0.0160
0	-0.0017	-0.0051	0.0017	-0.0033	-0.0071	0.0005	0.0012	-0.0029	0.0052	-0.0013	-0.0055	0.0030
1	-0.0129	-0.0210	-0.0048	-0.0143	-0.0226	-0.0061	0.0087	-0.0079	0.0253	0.0183	-0.0090	0.0456
2	-0.0104	-0.0196	-0.0012	-0.0091	-0.0175	-0.0007	0.0182	0.0023	0.0341	0.0285	0.0029	0.0541
3	0.0105	0.0011	0.0199	0.0098	-0.0004	0.0200	0.0682	0.0488	0.0876	0.0733	0.0426	0.1040
4	0.0152	0.0052	0.0252	0.0108	0.0022	0.0195	0.0563	0.0367	0.0760	0.0838	0.0448	0.1228
5	0.0459	0.0338	0.0580	0.0406	0.0298	0.0514	0.1024	0.0784	0.1264	0.1354	0.0894	0.1814
6	0.0494	0.0381	0.0607	0.0411	0.0311	0.0511	0.1353	0.1107	0.1599	0.1526	0.1085	0.1967
7	0.0329	0.0212	0.0445	0.0346	0.0242	0.0451	0.1046	0.0825	0.1268	0.1361	0.0943	0.1780
8	0.0397	0.0272	0.0522	0.0380	0.0276	0.0484	0.1154	0.0880	0.1428	0.1533	0.1024	0.2042
9	0.0399	0.0267	0.0531	0.0427	0.0328	0.0526	0.1255	0.0917	0.1593	0.1794	0.1193	0.2394
10	0.0459	0.0307	0.0612	0.0392	0.0287	0.0496	0.1524	0.1107	0.1941	0.2065	0.1415	0.2715
11	0.0517	0.0372	0.0662	0.0458	0.0354	0.0563	0.1577	0.1198	0.1957	0.2084	0.1397	0.2770
12	0.0206	0.0048	0.0363	0.0199	0.0096	0.0302	0.0807	0.0341	0.1273	0.1427	0.0680	0.2174
13	0.0187	0.0041	0.0332	0.0154	0.0062	0.0247	0.0775	0.0338	0.1212	0.1379	0.0705	0.2053
14	0.0315	0.0149	0.0481	0.0296	0.0197	0.0395	0.0941	0.0435	0.1448	0.1651	0.0912	0.2389
15	0.0384	0.0202	0.0565	0.0383	0.0285	0.0480	0.0962	0.0367	0.1557	0.1757	0.0942	0.2572
16	0.0304	0.0111	0.0496	0.0274	0.0177	0.0371	0.0740	0.0112	0.1367	0.1472	0.0667	0.2277
17	0.0372	0.0159	0.0586	0.0332	0.0227	0.0437	0.0838	0.0069	0.1606	0.1884	0.0706	0.3062
18	0.0195	-0.0016	0.0407	0.0220	0.0123	0.0318	0.0738	0.0012	0.1465	0.1799	0.0748	0.2851
19	0.0196	-0.0024	0.0416	0.0207	0.0102	0.0313	0.0899	0.0065	0.1732	0.1999	0.0870	0.3128
20	0.0040	-0.0200	0.0279	0.0147	0.0038	0.0256	0.0458	-0.0434	0.1350	0.1632	0.0565	0.2700
21	0.0050	-0.0203	0.0302	0.0087	-0.0017	0.0191	0.0603	-0.0334	0.1540	0.1823	0.0623	0.3023
22	0.0092	-0.0189	0.0372	0.0151	0.0033	0.0269	0.0629	-0.0451	0.1708	0.1855	0.0669	0.3041
23	0.0281	-0.0001	0.0563	0.0341	0.0216	0.0465	0.0824	-0.0200	0.1848	0.2023	0.0889	0.3157

Note: N = 600 units (300 job centers in the treatment and control groups) observed over 35 monthly periods. ATT effect estimates are presented with 95% confidence intervals, estimated using the Interactive Fixed Effects (IFE) model. Event month 1 corresponds to October 2023, marking the launch of the Job Turbo Program.

Table A.5: ATT Estimates for Exit-to-Job Rate

Event Time	Ukrainian Refugees vs. Other Immigrants			Ukrainian Refugees vs. Germans			Other Refugees vs. Other Immigrants			Other Refugees vs. Germans		
	ATT	CI LB	CI UB	ATT	CI LB	CI UB	ATT	CI LB	CI UB	ATT	CI LB	CI UB
-11	0.0008	-0.0001	0.0018	0.0003	-0.0008	0.0015	-0.0009	-0.0016	-0.0002	-0.0014	-0.0024	-0.0005
-10	0.0025	0.0016	0.0035	0.0007	-0.0006	0.0019	0.0005	-0.0002	0.0011	-0.0014	-0.0024	-0.0004
-9	0.0012	0.0003	0.0020	-0.0001	-0.0012	0.0010	0.0012	0.0005	0.0018	-0.0001	-0.0011	0.0009
-8	-0.0022	-0.0030	-0.0015	-0.0011	-0.0021	-0.0001	0.0007	0.0001	0.0013	0.0019	0.0010	0.0027
-7	-0.0009	-0.0016	-0.0001	-0.0006	-0.0017	0.0005	0.0002	-0.0004	0.0008	0.0005	-0.0004	0.0014
-6	-0.0024	-0.0032	-0.0016	-0.0019	-0.0030	-0.0008	-0.0010	-0.0015	-0.0004	-0.0005	-0.0013	0.0003
-5	-0.0018	-0.0026	-0.0009	-0.0024	-0.0035	-0.0013	-0.0009	-0.0016	-0.0002	-0.0016	-0.0025	-0.0007
-4	-0.0022	-0.0029	-0.0014	-0.0027	-0.0038	-0.0016	-0.0005	-0.0010	0.0001	-0.0010	-0.0020	0.0000
-3	0.0003	-0.0005	0.0010	0.0005	-0.0006	0.0016	0.0004	-0.0001	0.0010	0.0007	-0.0003	0.0016
-2	0.0022	0.0012	0.0031	0.0023	0.0011	0.0034	0.0009	0.0003	0.0015	0.0010	0.0001	0.0019
-1	0.0028	0.0019	0.0038	0.0036	0.0024	0.0048	0.0011	0.0004	0.0017	0.0019	0.0009	0.0028
0	-0.0004	-0.0011	0.0004	0.0014	0.0004	0.0025	-0.0017	-0.0023	-0.0010	0.0001	-0.0008	0.0010
1	0.0052	0.0032	0.0071	0.0036	0.0014	0.0059	0.0008	-0.0005	0.0021	-0.0008	-0.0028	0.0012
2	0.0090	0.0068	0.0113	0.0086	0.0059	0.0114	0.0025	0.0010	0.0040	0.0021	0.0000	0.0043
3	0.0072	0.0052	0.0092	0.0044	0.0018	0.0070	0.0056	0.0041	0.0071	0.0027	0.0006	0.0048
4	-0.0003	-0.0019	0.0013	0.0030	0.0009	0.0051	0.0062	0.0048	0.0076	0.0095	0.0076	0.0114
5	0.0033	0.0016	0.0050	0.0022	0.0000	0.0045	0.0114	0.0099	0.0130	0.0104	0.0082	0.0127
6	0.0029	0.0011	0.0048	0.0008	-0.0016	0.0033	0.0170	0.0150	0.0189	0.0149	0.0125	0.0172
7	0.0056	0.0036	0.0076	0.0022	-0.0005	0.0049	0.0223	0.0198	0.0247	0.0189	0.0160	0.0218
8	0.0091	0.0069	0.0112	0.0074	0.0047	0.0102	0.0240	0.0216	0.0264	0.0224	0.0194	0.0253
9	0.0109	0.0088	0.0130	0.0090	0.0064	0.0115	0.0218	0.0196	0.0240	0.0199	0.0174	0.0225
10	0.0135	0.0113	0.0156	0.0117	0.0091	0.0143	0.0256	0.0234	0.0278	0.0238	0.0213	0.0263
11	0.0148	0.0124	0.0172	0.0147	0.0119	0.0174	0.0230	0.0211	0.0249	0.0229	0.0204	0.0254
12	0.0101	0.0080	0.0121	0.0109	0.0085	0.0133	0.0196	0.0174	0.0217	0.0204	0.0180	0.0228
13	0.0160	0.0135	0.0185	0.0138	0.0108	0.0168	0.0218	0.0197	0.0240	0.0196	0.0169	0.0223
14	0.0157	0.0134	0.0180	0.0132	0.0102	0.0161	0.0218	0.0196	0.0239	0.0192	0.0165	0.0220
15	0.0108	0.0086	0.0130	0.0106	0.0080	0.0132	0.0208	0.0188	0.0227	0.0206	0.0182	0.0229
16	0.0046	0.0030	0.0063	0.0075	0.0055	0.0096	0.0172	0.0154	0.0190	0.0201	0.0179	0.0223
17	0.0106	0.0086	0.0126	0.0101	0.0075	0.0127	0.0203	0.0182	0.0225	0.0199	0.0174	0.0223
18	0.0137	0.0116	0.0158	0.0131	0.0106	0.0156	0.0244	0.0222	0.0266	0.0238	0.0214	0.0262
19	0.0157	0.0133	0.0181	0.0131	0.0101	0.0161	0.0257	0.0236	0.0279	0.0232	0.0205	0.0259
20	0.0205	0.0179	0.0230	0.0187	0.0156	0.0217	0.0267	0.0246	0.0289	0.0249	0.0222	0.0276
21	0.0204	0.0179	0.0228	0.0193	0.0163	0.0222	0.0261	0.0241	0.0281	0.0250	0.0226	0.0275
22	0.0226	0.0201	0.0251	0.0208	0.0180	0.0237	0.0259	0.0238	0.0280	0.0242	0.0215	0.0268
23	0.0213	0.0187	0.0239	0.0215	0.0186	0.0244	0.0216	0.0196	0.0235	0.0217	0.0195	0.0240

Note: N = 600 units (300 job centers in the treatment and control groups) observed over 35 monthly periods. ATT effect estimates are presented with 95% confidence intervals, estimated using the Interactive Fixed Effects (IFE) model. Event month 1 corresponds to October 2023, marking the launch of the Job Turbo Program.

Table A.6: Effects of Contacts on Exit-to-Job Rate for Ukrainian and Other Refugees

Treatment group	Ukrainian Refugees				Other refugees			
Dependent Variables:	Exit-to-Job Rate	Contact Rate	Exit-to-Job Rate			Contact Rate	Exit-to-Job Rate	
Model Type	ITT	IV: 1st	IV: 2nd	OLS	ITT	IV: 1st	IV: 2nd	OLS
Model No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
Job-Turbo	0.0193***	0.1108***			0.0101***	0.0253***		
	(0.0007)	(0.0040)			(0.0007)	(0.0022)		
Contact Rate			0.1738***	0.0299***			0.3975***	0.0013
			(0.0086)	(0.0021)			(0.0417)	(0.0030)
Fixed-effects								
Job-Center-Group	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics								
Observations	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
R^2	0.37534	0.59443	0.37534	0.34140	0.31659	0.56220	0.31659	0.30442
F-test (1st stage), Contact Rate			2,502.5				206.90	

Note: Cluster-robust standard errors (job-center level) are in parentheses. Significance codes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Models (1) and (5) report the ITT of Job-Turbo on the exit-to-job rate. Models (2) and (6) are the first-stage regressions of the contact rate on Job-Turbo. Models (3) and (7) report the IV second stage estimating the effect of the contact rate (instrumented by Job-Turbo) on the exit-to-job rate. Models (4) and (8) report OLS estimates of the exit-to-job rate on the contact rate. All models include job-center-by-group and month fixed effects. The first-stage F is the Kleibergen–Paap rk Wald statistic for the excluded instrument.

Table A.7: Effects of Contacts on Exit-to-Job Rate (Male)

Treatment group	Ukrainian Refugees				Other refugees			
Dependent Variables:	Exit-to-Job Rate	Contact Rate	Exit-to-Job Rate			Contact Rate	Exit-to-Job Rate	
Model Type	ITT	IV: 1st	IV: 2nd	OLS	ITT	IV: 1st	IV: 2nd	OLS
Model No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
Job-Turbo	0.0166***	0.0917***			0.0135***	0.0216***		
	(0.0009)	(0.0040)			(0.0009)	(0.0025)		
Contact Rate			0.1814***	0.0135***			0.6217***	-0.0150***
			(0.0116)	(0.0025)			(0.0838)	(0.0034)
Fixed-effects								
Job-Center-Group	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics								
Observations	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
R^2	0.26518	0.53346	0.26518	0.24448	0.38725	0.57125	0.38725	0.37648
F-test (1st stage), Contact Rate			1,473.2				125.59	

Note: Cluster-robust standard errors (job-center level) are in parentheses. Significance codes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Models (1) and (5) report the ITT of Job-Turbo on the exit-to-job rate. Models (2) and (6) are the first-stage regressions of the contact rate on Job-Turbo. Models (3) and (7) report the IV second stage estimating the effect of the contact rate (instrumented by Job-Turbo) on the exit-to-job rate. Models (4) and (8) report OLS estimates of the exit-to-job rate on the contact rate. All models include job-center-by-group and month fixed effects. The first-stage F is the Kleibergen–Paap rk Wald statistic for the excluded instrument.

Table A.8: Effects of Contacts on Exit-to-Job Rate (Female)

Treatment group	Ukrainian Refugees				Other refugees			
Dependent Variables:	Exit-to-Job Rate	Contact Rate	Exit-to-Job Rate			Contact Rate	Exit-to-Job Rate	
Model Type	ITT	IV: 1st	IV: 2nd	OLS	ITT	IV: 1st	IV: 2nd	OLS
Model No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
Job-Turbo	0.0176***	0.1201***			0.0023***	0.0243***		
	(0.0007)	(0.0038)			(0.0005)	(0.0022)		
Contact Rate			0.1470***	0.0273***			0.0946***	0.0019
			(0.0070)	(0.0021)			(0.0213)	(0.0025)
Fixed-effects								
Job-Center-Group	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics								
Observations	21,000	21,000	21,000	21,000	21,000	21,000	21,000	21,000
R^2	0.30441	0.60948	0.30441	0.26948	0.24199	0.49198	0.24199	0.24106
F-test (1st stage), Contact Rate			2,955.5				154.51	

Note: Cluster-robust standard errors (job-center level) are in parentheses. Significance codes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Models (1) and (5) report the ITT of Job-Turbo on the exit-to-job rate. Models (2) and (6) are the first-stage regressions of the contact rate on Job-Turbo. Models (3) and (7) report the IV second stage estimating the effect of the contact rate (instrumented by Job-Turbo) on the exit-to-job rate. Models (4) and (8) report OLS estimates of the exit-to-job rate on the contact rate. All models include job-center-by-group and month fixed effects. The first-stage F is the Kleibergen–Paap rk Wald statistic for the excluded instrument.

Table A.9: Spillover Analysis: Changes in Outcomes for Germans and Other Immigrants Before and After the Job-Turbo, by Job Center Characteristics

	Germans					Other Immigrants				
	Contact	Exit-to-Job Rate				Contact	Exit-to-Job Rate			
	Rate	Overall	Low	Skilled	High-Skilled	Rate	Overall	Low	Skilled	High-Skilled
Post Job-Turbo × Number of Clients (Pre)	0.000	-0.000	0.000	-0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Job-Turbo × Vacancy-to-Unemployed Rate (Pre)	-0.010	-0.001	-0.001	-0.001	-0.000	-0.011	-0.001	-0.000	-0.001	-0.000
	(0.011)	(0.001)	(0.001)	(0.001)	(0.000)	(0.013)	(0.003)	(0.002)	(0.001)	(0.000)
Post Job-Turbo × Client-to-Staff FTE Ratio (Pre)	-0.001	0.000	0.000	0.000	-0.000	-0.002	0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Job-Turbo × Refugee Client Share (Pre)	-0.028	0.001	0.000	0.000	0.000	-0.013	-0.005	-0.006	0.000	-0.000
	(0.027)	(0.003)	(0.002)	(0.002)	(0.001)	(0.032)	(0.007)	(0.005)	(0.003)	(0.001)
Post Job-Turbo × Contact Rate (Pre)	-0.309	-0.001	0.000	-0.002	-0.001	-0.313	0.009	0.006	0.003	-0.002
	(0.033)	(0.004)	(0.002)	(0.002)	(0.001)	(0.042)	(0.010)	(0.006)	(0.005)	(0.002)
Post Job-Turbo × Exit-to-Job Rate (Pre)	1.001	-0.178	-0.085	-0.048	0.015	0.745	-0.209	-0.083	-0.013	-0.002
	(0.524)	(0.078)	(0.034)	(0.043)	(0.018)	(0.612)	(0.116)	(0.087)	(0.057)	(0.023)
N	10500	10500	9900	9900	9900	10500	10500	9900	9900	9900
Job Center FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month-Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note:

Coefficients shown; clustered SEs (by job center) in parentheses. Moderators measured pre-treatment at the job center level.

Table A.10: Summary Statistics for Main Sample of Job Centers in *Optionskommunen* (Pre–Job-Turbo Period)

Variable	Overall		Germans		Other Immigrants		Other Refugees		Ukrainian Refugees	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Number of Unemployed	4119.379	3563.923	2286.407	1941.285	725.227	966.447	564.265	623.988	543.480	380.999
Number of Unemployed with Contact	-	-	-	-	-	-	-	-	-	-
Number of Exits to Job	68.144	63.782	34.986	30.302	13.276	18.311	13.946	17.425	5.937	4.641
Contact Rate	-	-	-	-	-	-	-	-	-	-
Exit-to-Job Rate	0.017	0.006	0.016	0.007	0.021	0.013	0.025	0.013	0.013	0.010
Exit-to-Job Rate: Low-Skilled Jobs	0.008	0.003	0.006	0.003	0.011	0.008	0.014	0.009	0.006	0.006
Exit-to-Job Rate: Skilled Jobs	0.007	0.003	0.007	0.004	0.007	0.007	0.008	0.006	0.004	0.005
Exit-to-Job Rate: High-Skilled Jobs	0.001	0.001	0.002	0.001	0.001	0.002	0.001	0.001	0.001	0.002
Exit-to-Job Rate: Regular Employment	0.015	0.006	0.015	0.006	0.019	0.012	0.022	0.012	0.010	0.009
Exit-to-Job Rate: Marginal Employment	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.001
Exit-to-Job Rate: Stayed Employed for 3 Months	0.013	0.004	0.012	0.005	0.015	0.010	0.018	0.011	0.009	0.008
Exit-to-Job Rate: Stayed Employed for 6 Months	0.011	0.004	0.010	0.004	0.013	0.009	0.015	0.010	0.008	0.008
Exit-to-Job Rate: Stayed Employed for 12 Months	0.009	0.003	0.009	0.004	0.010	0.007	0.012	0.008	0.006	0.007
Exit-to-Job: Share Stayed Employed for 3 Months	0.819	0.075	0.818	0.107	0.809	0.191	0.819	0.169	0.854	0.209
Exit-to-Job: Share Stayed Employed for 6 Months	0.696	0.087	0.696	0.121	0.677	0.229	0.684	0.215	0.747	0.257
Exit-to-Job: Share Stayed Employed for 12 Months	0.568	0.094	0.573	0.129	0.553	0.244	0.538	0.231	0.620	0.290
Exit-to-Job Rate: Among Unemployed for 0-3 Months	0.041	0.016	0.046	0.023	0.054	0.040	0.046	0.033	0.021	0.021
Exit-to-Job Rate: Among Unemployed for 3-6 Months	0.020	0.011	0.023	0.015	0.026	0.030	0.025	0.026	0.011	0.018
Exit-to-Job Rate: Among Unemployed for 6-12 Months	0.013	0.007	0.016	0.010	0.016	0.020	0.017	0.018	0.006	0.010
Exit-to-Job Rate: Among Unemployed for 12+ Months	0.007	0.003	0.007	0.004	0.008	0.009	0.010	0.012	0.005	0.016
Exit-to-Job Rate: With Wage Subsidy	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.001	0.002
Exit-to-Job Rate: Without Wage Subsidy	0.014	0.005	0.014	0.006	0.018	0.012	0.021	0.012	0.010	0.009
Exit-to-Job: Share with Wage Subsidy	0.051	0.058	0.057	0.070	0.035	0.083	0.042	0.088	0.054	0.124
Exit Rate: Leave Labor Force	0.036	0.017	0.044	0.022	0.037	0.024	0.020	0.013	0.017	0.016
Exit Rate: Apprenticeship	0.004	0.005	0.004	0.005	0.003	0.005	0.007	0.009	0.005	0.006
Exit Rate: Training	0.037	0.018	0.022	0.012	0.030	0.018	0.054	0.030	0.090	0.054
Exit Rate: Other Status	0.037	0.021	0.036	0.028	0.045	0.034	0.037	0.029	0.043	0.028
Staff FTE	-	-	-	-	-	-	-	-	-	-
Unemployed-to-Staff FTE Ratio	-	-	-	-	-	-	-	-	-	-
Vacancy-to-Unemployment Ratio	0.312	0.152	-	-	-	-	-	-	-	-
Refugee Share on Unemployed	0.288	0.098	-	-	-	-	-	-	-	-

[a] Note: Means and standard deviations are reported. The sample includes 104 job centers in *Optionskommunen*. All statistics are averaged over the period from January to September 2023, prior to the launch of the Job-Turbo Program. The vacancy-to-job-seeker ratio is calculated at the local labor market level. All exit rates are winsorized at the 99th percentile.

Table A.11: Estimated Costs and Benefits of the Job-Turbo Program (12-Month Horizon)

	Ukrainian Refugees			Other Refugees		
	Amount	Persons[f]	Total	Amount	Persons[f]	Total
Expenditures						
Wage subsidy[a]	-€4,466	7,370	-€32.92M	-€4,466	1,833	-€8.19M
Training[b]	-€5,580	49,475	-€276.05M	-€5,580	19,667	-€109.73M
Total			-€308.97M			-€117.92M
Total per newly employed by Job-Turbo			-€10,077			-€6,366
Savings						
Income tax revenue[c]	€2,600	30,661	€79.72M	€2,753	18,523	€50.99M
Welfare savings[d]	€1,435	30,661	€44.00M	€1,435	18,523	€26.58M
Health/care insurance savings[e]	€6,924	30,661	€212.30M	€5,844	18,523	€108.25M
Total			€336.02M			€185.82M
Total per newly employed by Job-Turbo			€10,959			€10,032

[a] Costs per-person are based on the average monthly training costs for all skill training instruments (€1,924) multiplied by their average length (2.9 months) as reported in the statistical yearbook *Arbeitsmarktpolitische Instrumente SGB II - Ausgaben und Teilnehmende 2023*.

[b] Costs per-person are based on the average monthly costs for wage subsidies (€757) multiplied by their average length (5.9 months) as reported in the statistical yearbook *Arbeitsmarktpolitische Instrumente SGB II - Ausgaben und Teilnehmende 2023*.

[c] Savings per-person are based on 2023 median monthly earnings (€2,591 for Ukrainians and €2,671 for other refugees) as reported to us by the *Bundesagentur für Arbeit*.

[d] Savings per-person are based on 2023 average social benefit payments/*Bürgergeld* (€577 to Ukrainians and €487 to other refugees) as reported to us by the *Bundesagentur für Arbeit*.

[e] Savings per-person are based on insurance expenditures for unemployed (€119) reported in a response of the Federal Government to a minor interpellation to the *Bundestag* (Drucksache 20/10575).

[f] Estimates for all 404 job centers including the *Optionskommunen*