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Türkiye's Syrian Population after the Fall of Assad: National and Provincial Changes in the Registered Population*

Abstract

This paper examines how Türkiye's registered population of Syrians under temporary protection (SUTP) evolved nationally and across provinces following the fall of the Assad regime in December 2024. We use monthly administrative data for all 81 provinces from January 2024 through June 2026, treating the October–November 2024 drop associated with nationwide address verification and record cleaning separately from subsequent changes in the registered population. The empirical approach combines interrupted time-trend analysis, an adjusted pre-event counterfactual, and a province-level analysis of geographic heterogeneity. The national SUTP population was already declining before December 2024, but the post-event trend became substantially steeper. By June 2026, the registered population stood about 509,000 below the adjusted pre-event trajectory. The decline intensified in the second half of 2025 before moderating markedly in early 2026. The contraction was widespread, with declines in 77 provinces, but absolute reductions were concentrated in major hosting provinces. Changes relative to pre-event trends were generally more negative in provinces farther from the Syrian border. This relationship remains negative across a range of robustness checks, although it is weaker when provinces are weighted by their SUTP populations. These findings establish a quantitative baseline for understanding the timing, scale, and geography of changes in Türkiye's Syrian population after December 2024.

JEL classification

F22, J61, R23

Keywords

Syrians under temporary protection, refugee return, forced displacement, Türkiye, administrative data, provincial migration

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1. Introduction

The fall of the Assad regime on December 8, 2024, marked a major shift in the political context for Syrian displacement and return. Türkiye had hosted the world's largest population of Syrians under temporary protection (SUTP) for much of the preceding decade, and by late 2024 nearly 3 million Syrians remained registered under this status (Presidency of Migration Management 2024). The political transition in the Syrian Arab Republic (Syria) raised an immediate question with demographic and policy implications: how did Türkiye's registered SUTP population evolve after December 2024 relative to its preceding trajectory, and how did those changes vary across the country?

Existing research provides substantial evidence on refugee return intentions, the determinants of return, and realized return (Al Husein and Wagner 2023; Alrababah and Casalis 2024; Alrababah et al. 2023; Beaman, Onder, and Onder 2022; Ghosn et al. 2021; Kayaoglu, Şahin-Mencütek, and Erdoğan 2022; Müller-Funk and Fransen 2023). Recent monitoring after December 2024 has also documented rising voluntary returns from Türkiye and heterogeneous return intentions among Syrians who remain (Presidency of Migration Management 2025a, 2025b; UNHCR 2025c, 2025f, 2026c). Much less is known about how the registered SUTP population as a whole evolved after the political transition: how quickly the national stock changed relative to its preceding trajectory, when the decline was most pronounced, how widespread it was across provinces, and whether its geographic pattern was related to proximity to Syria or other provincial characteristics.

This paper addresses these questions using monthly administrative data covering all 81 provinces in Türkiye from January 2024 through June 2026. The data measure the registered SUTP population rather than return flows; changes in the stock should therefore not be interpreted one-for-one as cross-border movements. The data originate from Türkiye's Presidency of Migration Management (PMM), which administers the temporary protection registration system, and were shared with the author by the United Nations High Commissioner for Refugees (UNHCR). A key empirical complication is the unusually large October–November 2024 decline in the registered SUTP population, which coincided with nationwide address verification and record cleaning (Presidency of Migration Management 2024). I therefore treat this interval separately from both the clean pre-event trajectory and the subsequent post-event period. The empirical approach

combines an interrupted time-trend analysis of the national series, an adjusted pre-event counterfactual based on the clean January–October 2024 trajectory, and a province-level analysis of geographic heterogeneity in post-event changes.

The provincial analysis considers both proximity to Syria and exposure to the February 6, 2023, earthquakes in Türkiye. The earthquakes severely affected 11 provinces, including several major SUTP-hosting provinces and four of the six provinces that directly border Syria. Earthquake-related recovery conditions may have influenced local housing, labor markets, and population dynamics. The substantial geographic overlap between earthquake exposure and proximity to Syria makes it important to separate their associations with provincial SUTP trends.

The results show that the registered SUTP population was already declining before December 2024, but the post-event trend became substantially steeper. Between January 2025 and June 2026, the registered population fell by more than 615,000. By June 2026, it stood about 509,000 below the adjusted pre-event trajectory. The decline intensified during the second half of 2025 before moderating markedly in the first half of 2026. At the provincial level, the contraction was widespread: 77 of 81 provinces recorded declines during the post-event period.

Absolute reductions were concentrated in major hosting provinces, but proportional and trajectory-adjusted changes show a more complex geographic pattern than a simple border-proximity pattern. Changes relative to pre-event trends were generally more negative in provinces farther from the Syrian border. This distance relationship remains negative across a range of robustness checks, although it is weaker when provinces are weighted by their SUTP populations. Earthquake-affected provinces experienced larger post-event declines on average, but the conditional earthquake relationship is less robust across specifications than the distance relationship.

The paper provides a systematic account of how Türkiye’s registered SUTP population evolved after the fall of the Assad regime, combining national and provincial evidence. It complements research on return intentions and observed return flows by documenting changes in the registered population stock and their geographic distribution. More generally, the findings show that adjustment following a major change in origin-country conditions can unfold gradually and

unevenly across locations, particularly where displaced populations have been established in the host country for many years.

The remainder of the paper proceeds as follows. Section 2 provides background on Türkiye's temporary protection regime, the December 2024 political transition in Syria, the post-event return environment, and the late-2024 administrative developments. Section 3 reviews the relevant literature. Section 4 describes the data; Section 5 sets out the empirical strategy; and Section 6 presents the findings. Section 7 outlines directions for further research, and Section 8 concludes.

2. Background

Syrians under Temporary Protection in Türkiye

Türkiye has hosted Syrians displaced by the conflict since 2011. Syrian nationals, together with stateless persons and refugees from Syria who arrived in Türkiye following events in Syria after April 28, 2011, are eligible for temporary protection under Türkiye's national protection framework (Republic of Türkiye 2014). The PMM administers the temporary protection regime and associated registration procedures (Presidency of Migration Management n.d.).

The number of SUTP rose rapidly during the early years of the conflict, from roughly 14,000 in 2012 to 1.5 million in 2014 and more than 3.4 million by 2017. The registered population remained above 3.5 million for much of the period that followed, reaching about 3.74 million at the end of 2021 before beginning to decline (Erdoğan 2024).

Temporary protection is an administrative and legal status rather than a direct measure of migration flows. Syrians may leave the registered SUTP population through return to Syria, departure to another country, transition to another legal status, or other changes in registration. The registered stock measures the size and geographic distribution of the population covered by Türkiye's temporary protection system but does not identify the movements or administrative processes underlying changes in that stock.

The December 2024 Political Transition in Syria

On December 8, 2024, opposition forces entered Damascus and Bashar al-Assad's government collapsed, ending more than five decades of Assad family rule and nearly 14 years of civil war. UNHCR described the events of December 8 as a significant shift in the dynamics surrounding refugee return. More Syrian refugees in neighboring countries expressed an intention to return, and increasing numbers began doing so during the first months of 2025 (UNHCR 2025b).

The change in political conditions did not imply an immediate or uniform return of displaced Syrians. Conditions inside Syria remained fragile, and the sustainability of return continued to depend on security, housing, public services, infrastructure, and economic recovery (UNHCR 2025b). Return could unfold gradually as households assessed conditions in Syria, weighed their own circumstances, and determined whether and when return was feasible.

Türkiye accounted for an important share of the emerging return movement. By January 29, 2025, approximately 80,000 Syrians had reportedly returned voluntarily from Türkiye since December 8, while approximately 2.9 million SUTP remained in the country (UNHCR 2025e).

The Post-December Return Environment

Voluntary return remained subject to formal departure procedures. Syrians wishing to return are generally required to initiate the process through the Provincial Directorate of Migration Management in their province of registration. The process includes identity and biometric checks, confirmation that the decision is voluntary, issuance of return documentation and a travel permit, and departure through a designated border crossing or airport (UNHCR 2026a). Temporary protection status ends upon voluntary return to Syria, and any subsequent reinstatement is subject to individual assessment by the Turkish authorities (UNHCR 2026b).

As return volumes increased, the operational infrastructure for facilitating and monitoring departures expanded. By July 2025, UNHCR was monitoring voluntary-return procedures in 21 provinces, at six southeastern border crossings, and at airports in İstanbul and Ankara (UNHCR 2025d). Beginning on July 14, 2025, all border crossings between Syria and Türkiye were announced to operate around the clock to facilitate travel and reduce congestion (UNHCR 2025a).

Türkiye also authorized temporary “go-and-see” visits, allowing Syrians to assess conditions in Syria before deciding whether to return permanently (UNHCR 2025e).

These developments help explain why changes in the registered SUTP population may have emerged with a lag rather than immediately after the political transition. Return decisions were shaped by administrative procedures, information, household preparation, and evolving conditions on both sides of the border.

Administrative Developments in Late 2024

The interpretation of changes around December 2024 is complicated by an administrative process that immediately preceded the fall of the Assad regime. Beginning in September 2023, the Ministry of Interior conducted nationwide address-verification checks for foreigners legally residing in Türkiye. By May 2024, the checks had identified SUTP whose registered addresses were no longer current, and affected individuals were given time to update their records. The authorities subsequently reported that 580,819 Syrians had updated their addresses or obtained appointments to do so (Presidency of Migration Management 2024).

A further stage of the process began on October 1, 2024. The Ministry of Interior reported that 150,327 Syrians whose records showed no use of public services for at least one year were assessed as no longer residing in Türkiye and were removed from the registration system. Following the address-verification and related record-cleaning exercises, the Ministry reported 2,935,742 SUTP as of November 20, 2024 (Presidency of Migration Management 2024).

This process occurred immediately before the December political transition in Syria and coincided with a discrete October–November decline in the recorded SUTP stock. The decline cannot be interpreted as contemporaneous physical departures because it reflected, at least in part, address verification and record cleaning. Accordingly, the empirical analysis treats this administrative adjustment separately from subsequent changes in the registered population.

3. Previous Research

Global Evidence on Refugee Return

A substantial literature shows that refugee return is shaped jointly by conditions in the country of origin and the host country rather than by improvements in the origin country alone. A recent review identifies safety and security as fundamental preconditions for return and emphasizes economic opportunities, housing and property rights, access to services, family and social ties, and information about conditions in the origin country. Return may remain limited or delayed even after the conflict or political circumstances that initially produced displacement have changed (Alrababah and Casalis 2024).

Refugees may also become increasingly anchored in host countries through employment, education, family formation, social networks, and other forms of social and economic investment, even as they maintain varying degrees of attachment to their places of origin. Evidence from a 2018 survey of nearly 2,000 Syrian refugees in Lebanon shows that stronger attachment to Lebanon is associated with weaker preferences for return, whereas stronger attachment to Syria is associated with greater willingness to return. Exposure to violence before displacement is also associated with a greater preference for return, suggesting that experiences before and after displacement can jointly shape return decisions (Ghosn et al. 2021).

Return intentions may change as refugees receive new information and conditions in origin and host countries evolve, but stated intentions need not translate into immediate departure. Financial constraints, damaged housing, insecurity, documentation, employment prospects, and household circumstances may delay or prevent return. Reintegration may in turn depend on access to housing, land, employment, public services, and documentation (Alrababah and Casalis 2024).

These findings highlight three aspects of refugee return that should be considered separately: conditions in the origin country and attachments in the host country; stated intentions and realized departures; and the decision to return and the sustainability of return.

Return Intentions and Realized Return among Syrian Refugees

Research on Syrian refugees is consistent with this broader evidence. Observational and experimental evidence from a survey of 3,003 Syrian refugees in Lebanon indicates that conditions in Syria are the principal drivers of return intentions. Poor living conditions and hostility in the host country have comparatively little influence when basic conditions in Syria, particularly safety, remain inadequate. These findings suggest that refugees may require a minimum threshold of acceptable conditions at home before other considerations become important in the return decision (Alrababah et al. 2023).

Evidence on realized return similarly underscores the importance of conditions in Syria, although conditions in exile continue to matter. An analysis of Syrian displacement across the Mashreq that combines administrative records for roughly 2 million refugees with conflict, economic, and survey data finds that lower conflict intensity and stronger economic activity in Syria are associated with a higher likelihood of return. Conditions in exile are also associated with return behavior (Beaman, Onder, and Onder 2022).

Evidence from Türkiye points in the same direction. Survey and qualitative evidence collected among Syrian refugees in Türkiye in 2017–18 indicates that return aspirations are related to security, political change, and livelihood prospects in Syria, as well as to experiences of discrimination and sociocultural distance in Türkiye (Kayaoglu, Şahin-Mencütek, and Erdoğan 2022).

How return intentions are measured also matters. A 2018 survey of Syrian refugees in Türkiye and Germany compares intentions to return within two years, to return if Syria became as safe as before the war, and to ever return. Reported intentions differ substantially across these scenarios, indicating that willingness to return depends on both the time horizon and the conditions under which return is considered (Al Husein and Wagner 2023). Related mixed-methods evidence from Syrian refugees in Türkiye, Lebanon, and Syria distinguishes current from future return aspirations and shows that broader life aspirations and socioeconomic circumstances shape these choices (Müller-Funk and Fransen 2023).

This evidence cautions against treating return intentions as either a single binary measure or a direct proxy for realized departure. The gap between stated intentions and realized departure is especially relevant after December 2024: the political environment in Syria changed sharply, but the timing of return could still depend on economic, social, and family circumstances.

Return, Integration, and Attachment in Türkiye

Research on Syrians in Türkiye indicates that decisions about whether to remain or return are closely related to conditions both in Türkiye and in Syria. Livelihood opportunities and broader integration in Türkiye can shape return aspirations, as can experiences of discrimination and sociocultural distance. Conditions in Syria—particularly security, political change, and livelihood prospects—also remain central to return decisions (Kayaoglu, Şahin-Mencütek, and Erdoğan 2022).

Labor market integration is particularly relevant because employment can create both economic attachment and local ties. Evidence on Syrian refugees in Türkiye documents substantial labor market engagement alongside low levels of formal employment, marked variation in employment outcomes across demographic groups and regions, and concentration in particular sectors and types of work (Demirci and Kırdar 2023; Fatima, Nas Özen, and Raju 2026; Nas Özen and Raju 2025).

By December 2024, many Syrians had lived in Türkiye for more than a decade, during which households could accumulate language skills, employment relationships, schooling histories, housing arrangements, and social networks that could raise the costs of relocation. These forms of attachment may make return less immediate even when conditions in Syria improve. They are also unlikely to be uniform across provinces, given differences in local labor markets, housing costs, refugee concentration, and community networks.

Variation in these local attachments provides one potential basis for understanding why post-December changes in the registered SUTP population may differ across provinces.

Evidence after the Fall of the Assad Regime

Evidence collected after December 2024 shows both a clear increase in return activity and continued heterogeneity in return intentions among Syrians remaining in Türkiye. The February 2025 Inter-Agency Community Pulse Survey found substantial variation in expected return horizons: 58 percent of respondents reported no intention to return to Syria, 11 percent were undecided, and the remainder contemplated return over different time horizons (UNHCR 2025c). By October 2025, the share reporting no intention to return had changed little, at 56 percent, while the share reporting that they were undecided had risen to 19 percent (UNHCR 2025f). The October round also documented geographic variation in intentions, with greater interest in eventual return among respondents in the Southeast and a stronger preference to remain among those in Marmara.

Administrative data show that realized returns accelerated substantially after December 8, 2024. Türkiye's PMM reported 411,649 voluntary returns between December 8, 2024, and August 15, 2025; the cumulative number rose to 509,387 by October 1, 2025. These figures show that departures accumulated over the course of 2025 rather than being concentrated immediately after the political transition (Presidency of Migration Management 2025a, 2025b).

UNHCR return monitoring provides complementary information on voluntary returnees and the circumstances surrounding departure, including the return process, voluntariness, and protection concerns. During 2025, monitoring expanded across Provincial Directorates of Migration Management and border crossings, with coverage averaging roughly three-quarters of recorded voluntary returns and reaching higher levels during parts of the year (UNHCR 2026c).

The post-December evidence provides important information on both Syrians who remain and those who return. It does not document how the registered SUTP population as a whole changed month by month across Türkiye, how sharply it departed from its preceding trajectory, when the decline was most pronounced, or how those changes were distributed across provinces and related to geographic characteristics.

4. Data

Administrative SUTP Population Data

The analysis uses monthly administrative data on SUTP in Türkiye. The data originate from the PMM, which maintains the official temporary protection registration system and publishes statistics on the number and geographic distribution of registered Syrians (Presidency of Migration Management n.d.). UNHCR shared the province-level monthly series used in this study with the author.

The data set covers January 2024 through June 2026 and includes all 81 provinces in every month, yielding a balanced panel of 2,430 province-month observations. National SUTP totals are obtained by summing the provincial counts.

The data measure the population registered under temporary protection rather than migration flows. A reduction in the registered national stock does not necessarily correspond one-to-one to observed returns to Syria because it may also reflect departures to third countries, changes in legal status, or administrative changes to registration records. At the provincial level, changes may additionally reflect internal relocation within Türkiye when such movements are accompanied by changes in province of registration or registration status. Throughout the paper, I therefore interpret changes in the data as changes in the registered SUTP population rather than as direct measures of cross-border return movements.

Construction of the Province-Month Data Set

For each province, I construct the monthly SUTP stock, the absolute change from the preceding monthly observation, and the corresponding percentage change. Cumulative changes are calculated between selected start and end months. To facilitate comparisons across periods of different lengths, changes over longer intervals are also expressed as annualized rates.

For province i , the annualized growth rate between observations t_0 and t_1 is calculated as

$$g_i(t_0, t_1) = 100 \left[\left(\frac{S_{i,t_1}}{S_{i,t_0}} \right)^{12/m} - 1 \right],$$

where $S_{i,t}$ denotes the registered SUTP population in province i at month t and m is the number of monthly intervals between the two observations. The January–October 2024 period contains nine monthly intervals, whereas January 2025–June 2026 contains 17.

October–November 2024 Stock Adjustment

A notable feature of the series is the unusually large decline between October and November 2024. The registered national SUTP population fell from 3,088,863 to 2,936,252, a decrease of 152,611 people, or 4.94 percent. By comparison, the cumulative decline between January and October 2024 was 105,322, or 3.30 percent.

As discussed in Section 2, this drop coincided with nationwide address verification and record cleaning. I treat the October–November transition separately from other month-to-month changes in the registered SUTP population. The November observation is retained as part of the official administrative series rather than removed or mechanically adjusted.

The October–November adjustment was widespread but uneven across provinces. Seventy of the 81 provinces recorded a decline, and the median provincial change was -3.02 percent. The six provinces bordering Syria had an average decline of 9.16 percent, compared with 3.73 percent among other provinces. By contrast, the average proportional decline was nearly identical in earthquake-affected and other provinces. This heterogeneity reinforces the case for treating the adjustment separately in the provincial analysis.

Event Timing and Analytical Periods

The fall of the Assad regime occurred on December 8, 2024. The December observation cannot be divided into pre- and post-event components because the SUTP data are observed monthly rather than daily. December 2024 is treated as the event month and January 2025 as the first full post-event month.

The analysis distinguishes four periods:

Analytical period	Dates
Clean pre-event period	January–October 2024
Stock-adjustment interval	October–November 2024
Event month	December 2024
Post-event period	January 2025–June 2026

Geographic Variables

The province-month administrative data are supplemented with time-invariant geographic variables constructed for all 81 provinces. The principal measure is the distance from each provincial capital to the nearest point on the Türkiye-Syria land border. Latitude and longitude coordinates for provincial capitals were obtained from an online geospatial compilation of Turkish provinces (Baysan 2021), and country-boundary geometry for Türkiye and Syria was obtained from the CountryInfo GeoJSON repository (Chandro 2018). I calculate the minimum straight-line distance to the border for each province. The resulting measure has a mean of approximately 432 kilometers and a median of approximately 433 kilometers.

A second geographic indicator identifies the six provinces that directly share a land border with Syria: Gaziantep, Hatay, Kilis, Mardin, Şanlıurfa, and Şırnak.

I also identify the 11 provinces most heavily affected by the February 6, 2023, earthquakes: Adana, Adıyaman, Diyarbakır, Elazığ, Gaziantep, Hatay, Kahramanmaraş, Kilis, Malatya, Osmaniye, and Şanlıurfa (AFAD 2023a, 2023b). Several of these provinces are close to or directly border Syria, creating substantial geographic overlap between earthquake exposure and proximity to Syria. Given this overlap, the subsequent analysis considers the two geographic dimensions jointly.

5. Empirical Strategy

Analytical Framework and Interpretation

The empirical analysis examines how the registered SUTP population evolved around the fall of the Assad regime in December 2024 and how subsequent patterns differed across provinces. December 2024 is treated as the event month, and January 2025 as the first full post-event month.

The analysis proceeds in two parts. First, I examine the national monthly series for shifts in the level and trend of the registered SUTP population. Second, I study cross-provincial variation in post-event changes and whether these changes are systematically associated with proximity to the Syrian border and exposure to the February 2023 earthquakes. I also examine the sensitivity of the geographic results to the October–November 2024 administrative adjustment, the inclusion of provinces with very small registered SUTP populations, and influential observations.

National Interrupted Time-Trend Analysis

The national analysis uses the monthly SUTP population series to characterize changes in level and trend around the December 2024 event, accounting separately for the large October–November 2024 decline associated with nationwide address verification and record cleaning. The preferred specification is

$$Y_t = \alpha + \beta t + \gamma A_t + \delta E_t + \theta P_t + \lambda T_t^P + \varepsilon_t,$$

where t indexes months, Y_t is the national registered SUTP population in month t , and ε_t is the error term. The variable t is a linear monthly time trend. A_t equals one from November 2024 onward and captures the persistent level shift associated with the October–November 2024 interval. E_t is an indicator equal to one in December 2024. P_t equals one from January 2025 onward. T_t^P is the post-event trend, equal to zero through January 2025, one in February 2025, and increasing by one in each subsequent month.

The coefficient β captures the monthly trend during the clean pre-event period. The coefficient γ captures the persistent level shift beginning in November 2024, δ the additional deviation in the December 2024 event month, θ the level shift beginning in January 2025, and λ the change in the monthly trend during the post-event period. The implied post-event monthly trend is

$$\beta + \lambda.$$

Modeling the October–November change as a separate persistent level shift prevents the unusually large decline during that interval from mechanically steepening the estimated pre-event trend. The

specification is descriptive and is not intended to identify the causal effect of the political transition.

The model is estimated in levels so that the coefficients can be interpreted directly as changes in the number of registered SUTP. I also estimate the same specification using $\ln(Y_t)$ as the dependent variable, which allows the level and trend changes to be expressed approximately in proportional terms. Inference is based on Newey-West heteroskedasticity- and autocorrelation-consistent standard errors with one monthly lag.

Adjusted Pre-Event Counterfactual

I construct an adjusted pre-event counterfactual using the clean January–October 2024 trend and the estimated October–November level shift relative to that trend. This counterfactual provides a descriptive benchmark based on continuation of the clean pre-event trajectory and should not be interpreted as an estimate of what would necessarily have occurred in the absence of the December 2024 political transition.

I first estimate a linear trend using only the clean pre-event observations:

$$Y_t = \alpha + \beta t + \varepsilon_t, t = \text{January–October 2024}.$$

The estimated October–November level shift relative to the clean pre-event trend is defined as

$$\hat{A} = Y_{\text{Nov 2024}} - (\hat{\alpha} + \hat{\beta} t_{\text{Nov 2024}}).$$

The adjusted counterfactual SUTP population for November 2024 and subsequent months is then

$$\hat{Y}_t^{CF} = \hat{\alpha} + \hat{\beta} t + \hat{A}.$$

I define the gap between the observed population and the adjusted counterfactual as

$$G_t = Y_t - \hat{Y}_t^{CF}.$$

A negative value of G_t indicates that the observed SUTP population lies below the adjusted pre-event trajectory.

To characterize the timing of post-event changes, I also calculate average monthly changes over three six-month intervals: January–June 2025, July–December 2025, and January–June 2026.

Provincial Changes and Geographic Heterogeneity

The province-level analysis examines the extent and geographic pattern of cross-provincial differences in post-event SUTP changes. Let i index provinces. I define each province's clean pre-event annualized growth rate as

$$g_i^{pre} = 100 \left[\left(\frac{S_{i,Oct\ 2024}}{S_{i,Jan\ 2024}} \right)^{12/9} - 1 \right],$$

and its post-event annualized growth rate as

$$g_i^{post} = 100 \left[\left(\frac{S_{i,Jun\ 2026}}{S_{i,Jan\ 2025}} \right)^{12/17} - 1 \right].$$

The primary province-level outcome is the change in the annualized growth rate:

$$\Delta g_i = g_i^{post} - g_i^{pre}.$$

A negative value of Δg_i indicates that the province's annualized SUTP growth rate became more negative in the post-event period relative to the clean pre-event period.

I relate this outcome to geographic proximity and earthquake exposure using

$$\Delta g_i = \alpha + \beta \ln(D_i + 1) + \gamma EQ_i + \delta \ln(S_{i,Jan\ 2025}) + \varepsilon_i,$$

where D_i is the straight-line distance from the provincial capital to the nearest point on the Türkiye-Syria border, EQ_i is an indicator for the 11 provinces most heavily affected by the February 2023 earthquakes, $S_{i, \text{Jan } 2025}$ is the registered SUTP population in January 2025, and ε_i is the province-level error term. The logarithmic distance transformation allows differences in proximity near the border to have greater marginal importance than equivalent absolute differences among more distant provinces. The January 2025 SUTP population controls for differences in the scale of the registered SUTP population across provinces at the start of the post-event period.

The regressions are estimated sequentially: first with distance only, then adding earthquake status, and finally adding the January 2025 SUTP population. Heteroskedasticity-robust standard errors are used throughout the province-level regressions.

As a complementary outcome, I estimate the same specifications using g_i^{post} as the dependent variable. Whereas Δg_i measures how a province's post-event growth rate changed relative to its own clean pre-event growth rate, g_i^{post} measures the pace of change during the post-event period in isolation.

I also complement the continuous-distance regressions with two geographic comparisons. First, I estimate an alternative specification that replaces continuous distance with an indicator for the six provinces that directly border Syria. Second, I divide the provinces into terciles of distance to the Syrian border and compare average pre- and post-event annualized growth rates across these groups.

Robustness

The robustness analysis examines the sensitivity of the national and provincial results to the treatment of the October–November 2024 interval and to alternative specifications, samples, and weighting approaches in the geographic analysis. For the national series, I also examine whether inference for the principal trend estimates is sensitive to the number of lags used in the Newey–West variance estimator. For the provincial analysis, I additionally test for residual spatial dependence in the preferred specification.

For the national series, I estimate an alternative interrupted time-trend specification in which November is included in the pre-event trajectory rather than modeled as a separate level shift. I also re-estimate the preferred interrupted time-trend specification using Newey-West standard errors with two- and three-monthly lags, compared with one lag in the preferred specification.

For the province-level analysis, as an alternative treatment of the late-2024 adjustment, I first recalculate the pre-event annualized growth rate using January through November 2024:

$$g_i^{pre,alt} = 100 \left[\left(\frac{S_{i,Nov\ 2024}}{S_{i,Jan\ 2024}} \right)^{12/10} - 1 \right].$$

I then define

$$\Delta g_i^{alt} = g_i^{post} - g_i^{pre,alt},$$

and use this alternative outcome to assess sensitivity to the pre-event benchmark.

I next examine whether the estimated distance relationship is sensitive to the October–November adjustment. I add each province’s October–November 2024 percentage change in the registered SUTP population to the model and re-estimate the specification after excluding provinces with the largest proportional adjustments, using the top 5 percent and top 10 percent of the provincial distribution as alternative thresholds.

I also estimate population-weighted specifications using the January 2025 registered SUTP population as weights, giving greater influence to provinces hosting larger SUTP populations. In addition, I re-estimate the model after excluding the 11 earthquake-affected provinces. The earthquake indicator is omitted from the latter specifications because it is constant in the restricted sample.

To examine whether very small SUTP populations generate volatile percentage changes, I estimate the model for provinces with at least 1,000 and at least 5,000 registered SUTP in January 2025.

I also test whether residual spatial dependence is present in the preferred province-level specification. I use Moran tests based on inverse-distance weights between provincial capitals, considering both spectral and row normalization of the spatial-weighting matrix.

Finally, I assess the influence of individual observations using standardized residuals, leverage, and Cook's distance. I re-estimate the model after excluding flagged observations, conduct leave-one-out checks for provinces with the largest Cook's distances, and report a separate specification excluding Mardin, the most influential observation in the preferred model.

6. Findings

National SUTP Dynamics and the Post–December 2024 Break

Türkiye's registered SUTP population was already declining before December 2024. The national stock fell from 3,194,185 in January 2024 to 3,088,863 in October 2024, a cumulative reduction of 105,322, or 3.30 percent (Figure 1A; Table 1). This corresponds to an annualized decline of 4.37 percent over the clean pre-event period. Figure 1B shows an unusually large decline of 152,611 between October and November 2024, equivalent to 4.94 percent in a single month and coinciding with the nationwide address-verification and record-cleaning process described in Section 2. From November to December 2024, the registered population fell by a further 34,774, or 1.18 percent. Over the full January 2024–June 2026 period, the national stock declined by 939,154, or 29.40 percent.

Between January 2025 and June 2026, the registered SUTP population fell from 2,870,226 to 2,255,031, a decline of 615,195, or 21.43 percent. This corresponds to an annualized rate of –15.66 percent (Table 1).

The interrupted time-trend estimates show a clear break from the clean pre-event trend (Table 2). In the preferred level specification, the SUTP population declines by about 9,084 per month during the clean pre-event period. The estimated November 2024 level shift is –133,978, and December 2024 is associated with an additional decline of about 25,690 relative to the projected trend. A further downward level shift of about 70,251 begins in January 2025.

The estimated change in trend is $-31,098$ per month, implying a post-event decline of approximately 40,181 registered SUTP per month, compared with about 9,084 per month during the clean pre-event period. The estimated monthly rate of decline during the post-event period was more than four times the clean pre-event rate. The log specification yields a similar pattern: the estimated pre-event trend is approximately -0.29 percent per month, compared with an implied post-event trend of approximately -1.58 percent per month. Inference for the change in trend and the implied post-event trend is insensitive to allowing two- or three-monthly lags in the Newey-West variance estimator.

Magnitude and Timing of the Post-Event Divergence

The observed series begins to move further below the adjusted pre-event trajectory in December 2024 (Figure 2A; Table 3, Panel A). In December, the registered SUTP population was 2,901,478, around 25,690 below the adjusted counterfactual. The gap widened to approximately 47,858 in January 2025, 194,676 by June 2025, and 470,406 by December 2025. By June 2026, the observed population stood at 2,255,031, compared with an adjusted counterfactual of 2,763,659, a gap of 508,628. The observed stock was approximately 18.4 percent below the adjusted pre-event trajectory by the end of the study period.

From January through June 2025, the SUTP population declined by an average of about 37,248 per month (Figure 2B; Table 3, Panel B). The average monthly decline increased to about 55,039 during July–December 2025 before slowing to about 15,454 in January–June 2026. The timing indicates that the post-event adjustment was not concentrated immediately after December 2024: the decline intensified during the second half of 2025 and moderated substantially in the first half of 2026.

Provincial Breadth and Concentration of the Decline

The post-event contraction was geographically widespread. Between January 2025 and June 2026, the registered SUTP population declined in 77 of Türkiye’s 81 provinces, compared with 47 provinces during the clean pre-event period (Table 4). The median annualized provincial growth rate fell from -1.72 percent in January–October 2024 to -14.16 percent in January 2025–June

2026. The median change in annualized growth was -12.79 percentage points, indicating that growth rates became more negative after December 2024 across most provinces.

The absolute decline was concentrated in a relatively small number of major SUTP-hosting provinces (Figure 3A; Table 5). İstanbul recorded the largest absolute reduction, falling by 101,330 between January 2025 and June 2026, followed by Gaziantep with a decline of 84,366 and Hatay with 74,270. Şanlıurfa, Mersin, Adana, Bursa, and Kahramanmaraş also recorded substantial reductions. The 15 largest provincial contributors accounted for approximately 91 percent of the national decline over the period.

The ranking by proportional decline differs from the ranking by absolute change, reflecting large differences in initial provincial SUTP populations (Figure 3B). Hatay and Kahramanmaraş experienced especially large percentage reductions. By contrast, İstanbul's large contribution to the national decline primarily reflects the scale of its initial SUTP population: its registered SUTP population declined by 20.31 percent over the period, compared with reductions of 35.07 percent in Hatay and 32.63 percent in Kahramanmaraş.

Figure A1 shows the monthly trajectories of the 10 largest hosting provinces, Figure A2 shows the evolution of the national SUTP population share accounted for by the five and ten largest provinces, and Table A1 shows province-level changes for all 81 provinces.

Geographic Heterogeneity in Post-Event Changes

Post-event provincial changes differed systematically across geography, but not in a simple border-versus-interior pattern. Border provinces experienced substantially faster declines than other provinces during the clean pre-event period: their mean annualized growth rate was -10.99 percent, compared with -0.12 percent elsewhere (Table 6, Panel A). During the post-event period, average annualized declines were similar across the two groups, at -13.91 percent in border provinces and -13.64 percent in other provinces. The change in annualized growth was therefore less negative in border provinces, reflecting their already steeper pre-event decline.

Conditional on earthquake status and initial SUTP population, border provinces exhibit a less negative change in annualized growth than non-border provinces, consistent with their comparatively steep declines before December 2024 (Table 7, Panel C).

Earthquake-affected provinces exhibited a different pattern. Their mean post-event annualized decline was -17.83 percent, compared with -13.00 percent in other provinces (Table 6, Panel B). Their average change in annualized growth was similar to that of non-earthquake provinces. Conditional on distance from Syria and initial SUTP population, the estimated change in annualized growth is more negative in earthquake-affected provinces, although this relationship is less precisely estimated than the distance relationship (Table 7, Panel A).

The continuous-distance regressions provide additional evidence of geographic heterogeneity (Figure 4A; Table 7, Panel A). In the preferred specification, which uses the change in annualized growth as the dependent variable, greater distance from the Syrian border is associated with a more negative change in provincial growth. The coefficient on log distance is -3.23 in the bivariate specification and -5.37 after controlling for earthquake status. It remains similar at -5.39 when initial SUTP population is added. The stability of the distance coefficient after controlling for initial SUTP population suggests that the relationship is not driven by differences in provincial SUTP population size and persists after accounting for earthquake exposure. The coefficient on earthquake exposure is negative in the multivariate specifications but estimated less precisely, and the coefficient on initial SUTP population is small and statistically insignificant.

The regressions using post-event annualized growth produce a somewhat different pattern (Table 7, Panel B). Distance is not associated with post-event growth in the bivariate specification but becomes negatively associated once earthquake status is included. The geographic relationship is therefore stronger and more consistent when measured as the change relative to each province's pre-event trend than when post-event decline is considered in isolation. This difference reflects the comparatively rapid declines already occurring in border provinces before December 2024.

These geographic patterns should not be interpreted as direct evidence on the geography of cross-border return. Province-level changes in the registered SUTP population may also reflect internal

relocation within Türkiye when such movements are accompanied by changes in province of registration or registration status. The available data do not allow these movements to be separated from other sources of provincial population change.

Figure 4B compares pre- and post-event annualized growth across distance terciles, Figure A3 plots provincial pre- and post-event annualized growth rates directly, and Table A2 reports additional detail for the Syrian-border and earthquake-affected provinces.

Robustness of the National and Geographic Results

For the national series, I first examine sensitivity to the treatment of the October–November 2024 stock adjustment. I re-estimate the interrupted time-trend specification treating November as part of the pre-event trend rather than as a separate level shift (Table A3, Panels A and B). Under this alternative specification, the pre-event decline is steeper, as expected, but the implied post-event decline remains approximately 40,181 registered SUTP per month, virtually identical to the preferred specification. The estimated post-event trend is insensitive to whether the October–November adjustment is modeled as a separate level shift or incorporated into the pre-event trend. Inference is also insensitive to the Newey-West lag choice: allowing two- or three-monthly lags leaves the estimated change in trend and implied post-event trend unchanged, and both remain highly statistically significant (Table A3, Panel C).

The October–November adjustment was uneven across provinces, with the largest proportional declines occurring in a mix of border and non-border provinces, including several with relatively small registered SUTP populations (Figure A4). Figure A5 shows little systematic relationship between the size of the October–November adjustment and the subsequent change in provincial SUTP growth relative to the clean pre-event trend.

The regression results similarly indicate that the late-2024 adjustment does not drive the estimated distance relationship (Table A4). Adding the province-level October–November percentage change to the preferred specification leaves the coefficient on log distance virtually unchanged, at -5.37 compared with -5.39 in the baseline specification. The coefficient on the adjustment itself is near zero and statistically insignificant. Excluding provinces with the largest proportional

adjustments also leaves the distance coefficient negative and statistically significant: -3.87 when the top 5 percent are excluded and -4.07 when the top 10 percent are excluded.

Using January–November 2024 as the alternative pre-event period yields a log-distance coefficient of -5.89 (Table A4). Excluding the 11 earthquake-affected provinces produces a coefficient of -6.89 . Restricting the sample to the 60 provinces with at least 1,000 registered SUTP in January 2025 yields an estimate of -5.11 . Among the 34 provinces with at least 5,000 SUTP, the estimated coefficient remains similar in magnitude at -5.08 , although it is less precisely estimated in the smaller sample. Across these alternative benchmarks and sample restrictions, the estimated distance relationship remains negative and broadly similar in magnitude.

The clearest qualification comes from population weighting. When provinces are weighted by their January 2025 SUTP populations, the coefficient on log distance remains negative but is smaller and statistically insignificant (Table A4). The distance gradient is therefore more pronounced across provincial units than when greater weight is placed on the largest SUTP-hosting provinces. This qualification matters because the unweighted and population-weighted specifications answer different descriptive questions: the former characterizes the pattern across provinces, whereas the latter gives greater influence to provinces containing larger shares of the SUTP population.

Influence diagnostics identify several unusual provincial observations, with Mardin the most influential. Mardin combines an exceptionally steep clean pre-event decline with a much slower post-event decline, producing a large positive change relative to its pre-event trend. Excluding Mardin reduces the magnitude of the log-distance coefficient from -5.39 to -3.68 , but the relationship remains negative and statistically significant (Table A4). The estimate is -3.90 when all observations flagged by the influence diagnostics are excluded.

Residual spatial dependence also does not appear to account for the preferred geographic relationship. Moran tests based on inverse-distance weights between provincial capitals provide no evidence of residual spatial dependence under either spectral normalization ($p = .626$) or row normalization ($p = .625$).

The robustness checks indicate that the negative association between distance from Syria and the change in SUTP growth relative to the pre-event trend is not driven by the late-2024 administrative adjustment, small-population provinces, earthquake-affected provinces, residual spatial dependence, or influential observations. The relationship is less pronounced when provinces are weighted by their SUTP populations. The relationship should therefore be interpreted primarily as a geographic pattern across provincial units rather than as an equally strong population-level gradient. The earthquake coefficient is less stable across these checks, whereas the distance relationship remains the more consistent geographic result.

Table 1. National SUTP Population Changes across Analytical Periods

Analytical period	Start population	End population	Absolute change	Cumulative change (%)	Annualized change (%)
Clean pre-event: January–October 2024	3,194,185	3,088,863	–105,322	–3.30	–4.37
October–November 2024 interval	3,088,863	2,936,252	–152,611	–4.94	—
Event-month change: November–December 2024	2,936,252	2,901,478	–34,774	–1.18	—
Post-event: January 2025–June 2026	2,870,226	2,255,031	–615,195	–21.43	–15.66
Full period: January 2024–June 2026	3,194,185	2,255,031	–939,154	–29.40	—

Notes: The October–November 2024 interval is reported separately because it coincided with nationwide address verification and record cleaning. December 2024 is treated as the event month, and January 2025 as the first full post-event month. Annualized rates are reported for the clean pre-event and post-event periods.

Table 2. Interrupted Time-Trend Estimates of Türkiye's SUTP Population

	(1) Level	(2) Log
Clean pre-event monthly trend	−9,084*** (2,349)	−0.002899*** (0.000741)
October–November 2024 level shift	−133,978*** (9,620)	−0.044770*** (0.003032)
December 2024 deviation	−25,690*** (2,349)	−0.009015*** (0.000741)
January 2025 post-event level shift	−70,251** (27,887)	−0.021207** (0.009920)
Change in monthly trend	−31,098*** (3,953)	−0.012974*** (0.001360)
Implied post-event monthly trend	−40,181*** (3,180)	−0.015873*** (0.001140)
Observations	30	30

Notes: Column (1) reports estimates for the SUTP population in levels and column (2) for its natural logarithm. The October–November 2024 level shift begins in November 2024; the December 2024 deviation applies only to the event month; and the post-event level shift begins in January 2025. The implied post-event monthly trend equals the clean pre-event trend plus the change in trend. Newey–West heteroskedasticity- and autocorrelation-consistent standard errors with one monthly lag are in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Table 3. Magnitude and Timing of the Post-Event Divergence**A. Actual and Adjusted Counterfactual SUTP Population**

Month	Actual SUTP population	Adjusted counterfactual	Actual minus counterfactual	Gap relative to counterfactual (%)
December 2024	2,901,478	2,927,168	−25,690	−0.88
January 2025	2,870,226	2,918,084	−47,858	−1.64
June 2025	2,677,989	2,872,665	−194,676	−6.78
December 2025	2,347,756	2,818,162	−470,406	−16.69
June 2026	2,255,031	2,763,659	−508,628	−18.40

B. Average Monthly Change by Post-Event Period

Period	Average monthly change
January–June 2025	−37,248
July–December 2025	−55,039
January–June 2026	−15,454

Notes: Panel A compares the observed national SUTP population with an adjusted counterfactual based on the January–October 2024 pre-event trend, carrying forward the estimated October–November 2024 level shift relative to that trend. Negative gaps indicate that the observed population lies below the adjusted counterfactual. The percentage gap is measured relative to the counterfactual. Panel B reports average changes between successive monthly observations; the January 2025 change is measured relative to December 2024.

Table 4. Distribution and Breadth of Provincial SUTP Changes

Measure	Clean pre-event annualized growth	Post-event annualized growth	Post minus pre annualized growth
Mean (%)	−0.92	−13.66	−12.73
Median (%)	−1.72	−14.16	−12.79
25th percentile (%)	−7.75	−17.69	−17.34
75th percentile (%)	3.23	−10.21	−6.22
Minimum (%)	−27.49	−46.48	−42.92
Maximum (%)	56.62	16.49	23.22
Provinces with negative growth	47	77	—
Provinces with more negative post-event growth	—	—	70
Number of provinces	81	81	81

Notes: Clean pre-event annualized growth is calculated from January to October 2024; post-event annualized growth is calculated from January 2025 to June 2026. The final column is the province-level post-event annualized growth rate minus its clean pre-event rate. A negative value indicates that the provincial trajectory became more negative after December 2024. The 77 provinces with negative post-event growth and the 70 provinces with more negative post-event than pre-event growth are distinct measures.

Table 5. Largest Provincial Contributors to the National SUTP Decline, January 2025–June 2026

Province	Jan 2025	Jun 2026	Absolute change	Change (%)	Contribution to national decline (%)
İstanbul	498,885	397,555	−101,330	−20.31	16.47
Gaziantep	401,860	317,494	−84,366	−20.99	13.71
Hatay	211,784	137,514	−74,270	−35.07	12.07
Şanlıurfa	243,568	191,091	−52,477	−21.55	8.53
Mersin	182,899	142,094	−40,805	−22.31	6.63
Adana	209,678	172,009	−37,669	−17.97	6.12
Bursa	165,815	131,570	−34,245	−20.65	5.57
Kahramanmaraş	81,610	54,978	−26,632	−32.63	4.33
İzmir	114,074	95,921	−18,153	−15.91	2.95
Konya	116,694	99,065	−17,629	−15.11	2.87
Kayseri	77,210	60,255	−16,955	−21.96	2.76
Kilis	62,601	46,433	−16,168	−25.83	2.63
Ankara	83,767	67,715	−16,052	−19.16	2.61
Osmaniye	36,759	24,690	−12,069	−32.83	1.96
Kocaeli	50,329	39,188	−11,141	−22.14	1.81
Top 15 total	—	—	−559,961	—	91.02

Notes: Provinces are ranked by their contribution to the national decline in the registered SUTP population between January 2025 and June 2026. Absolute change is June 2026 minus January 2025. Contribution is the province-level reduction expressed as a percentage of the national net reduction of 615,195 over the same period.

Table 6. Provincial SUTP Changes by Geographic Group

A. Syrian-Border versus Other Provinces		
Measure	Syrian-border provinces	Other provinces
Clean pre-event annualized growth (%)	−10.99	−0.12
Post-event annualized growth (%)	−13.91	−13.64
Post minus pre annualized growth (pp)	−2.92	−13.52
Post-event cumulative change (%)	−18.90	−18.53
Number of provinces	6	75
B. Earthquake-Affected versus Other Provinces		
Measure	Earthquake-affected provinces	Other provinces
Clean pre-event annualized growth (%)	−5.45	−0.21
Post-event annualized growth (%)	−17.83	−13.00
Post minus pre annualized growth (pp)	−12.38	−12.79
Post-event cumulative change (%)	−24.14	−17.68
Number of provinces	11	70

Notes: Entries are unweighted provincial means. Clean pre-event annualized growth is calculated from January to October 2024, and post-event annualized growth from January 2025 to June 2026. Syrian-border provinces are Gaziantep, Hatay, Kilis, Mardin, Şanlıurfa, and Şırnak. The earthquake-affected group contains the 11 provinces identified in the Data section. Post minus pre annualized growth equals the post-event annualized growth rate minus the clean pre-event rate. pp = percentage points.

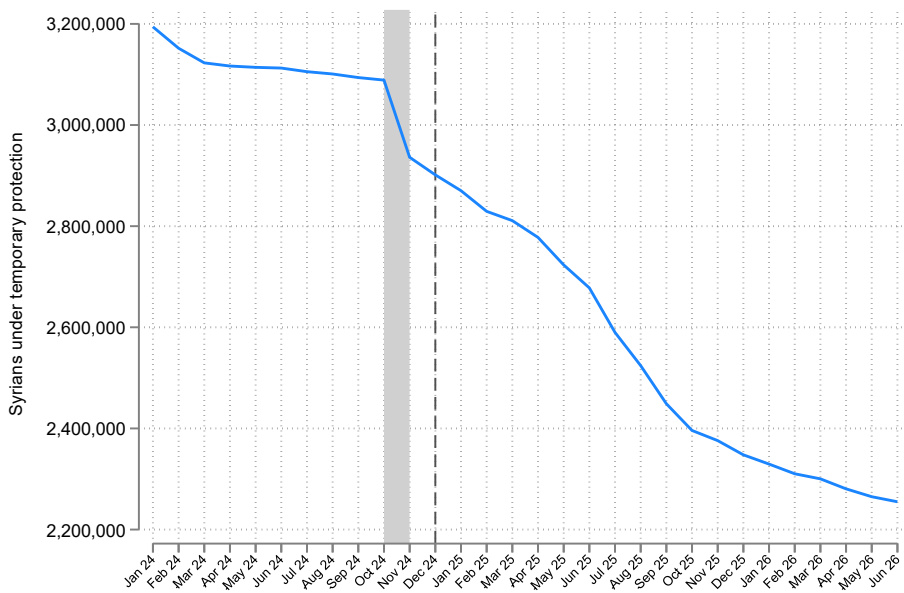
Table 7. Geographic Correlates of Provincial SUTP Changes

A. Dependent Variable: Post minus Pre Annualized SUTP Growth			
	(1)	(2)	(3)
Log distance to Syrian border	−3.234** (1.417)	−5.366*** (1.726)	−5.386*** (1.729)
Earthquake-affected province	—	−9.255** (4.409)	−9.903* (4.998)
Log SUTP population, Jan 2025	—	—	0.183 (0.680)
Constant	5.893 (8.467)	19.429* (10.657)	18.127 (11.082)
Observations	81	81	81
R-squared	0.070	0.114	0.115
B. Dependent Variable: Post-Event Annualized SUTP Growth			
	(1)	(2)	(3)
Log distance to Syrian border	−0.059 (0.907)	−2.002** (0.900)	−1.970** (0.937)
Earthquake-affected province	—	−8.435*** (3.003)	−7.408** (3.230)
Log SUTP population, Jan 2025	—	—	−0.291 (0.566)
Constant	−13.316** (5.397)	−0.979 (5.533)	1.088 (7.598)
Observations	81	81	81
R-squared	0.000	0.072	0.077
C. Border-Province Specification			
	Post minus pre annualized growth		
Syrian-border province	13.073** (6.119)		
Earthquake-affected province	−3.452 (3.988)		
Log SUTP population, Jan 2025	−0.155 (0.707)		
Constant	−11.959* (6.428)		
Observations	81		
R-squared	0.068		

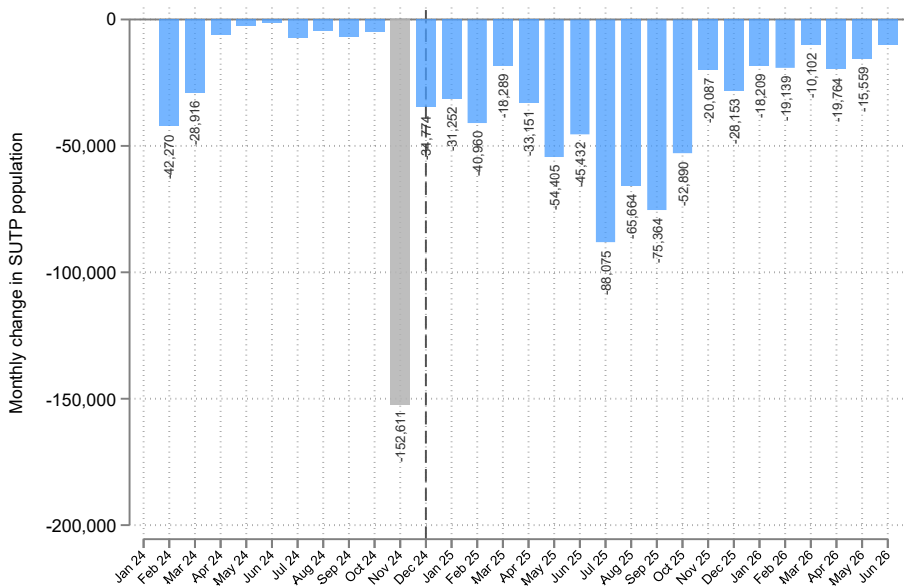
Notes: Panel A uses post-event minus clean pre-event annualized SUTP growth as the dependent variable. Panel B uses post-event annualized SUTP growth. Columns (1) to (3) add controls sequentially: distance only; distance and earthquake exposure; and distance, earthquake exposure, and initial SUTP population. Panel C replaces continuous distance with an indicator for provinces directly bordering Syria. Distance enters as the natural logarithm of distance to the Syrian border plus one. Initial SUTP population enters in logarithms. Heteroskedasticity-robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Figure 1. Türkiye’s SUTP Population Dynamics, January 2024–June 2026

A. Syrians under Temporary Protection in Türkiye



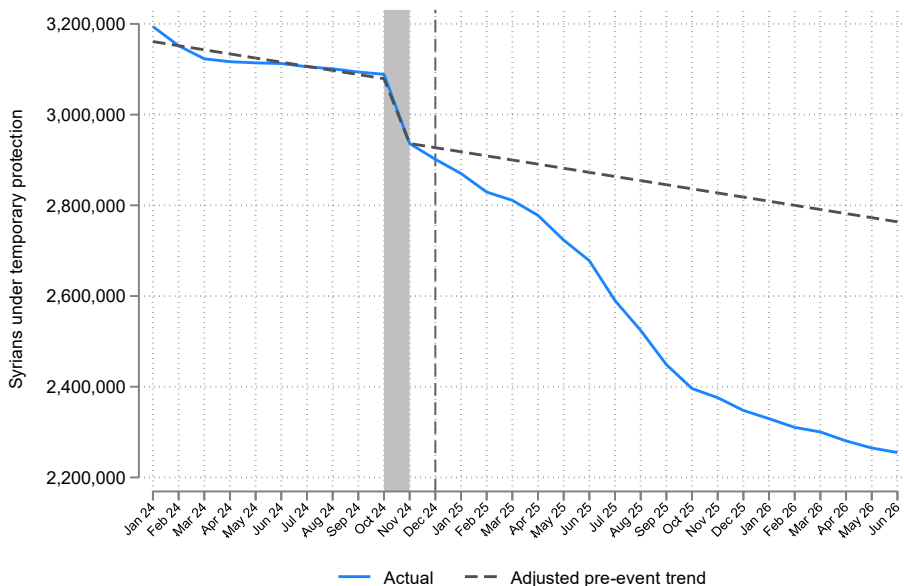
B. Monthly Change in Türkiye’s SUTP Population



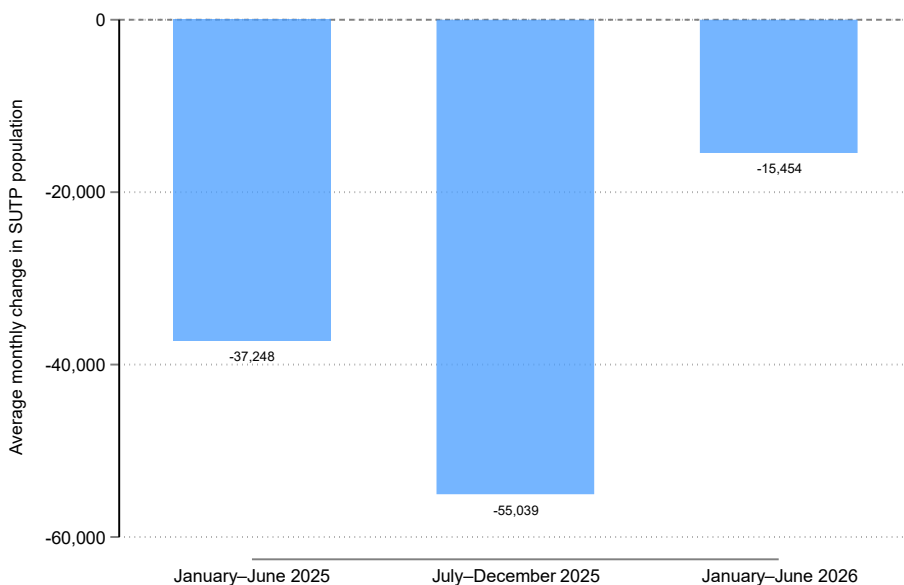
Notes: Panel A shows the national registered SUTP population by reporting month. The gray shading marks the October–November 2024 interval associated with nationwide address verification and record cleaning. Panel B shows the change between successive monthly observations; the gray November 2024 bar represents the October–November change. The dashed vertical line marks December 2024, when the Assad regime fell. Reporting dates vary within months.

Figure 2. Türkiye’s SUTP Population Relative to the Adjusted Pre-Event Trajectory

A. Actual SUTP Population and Adjusted Pre-Event Counterfactual



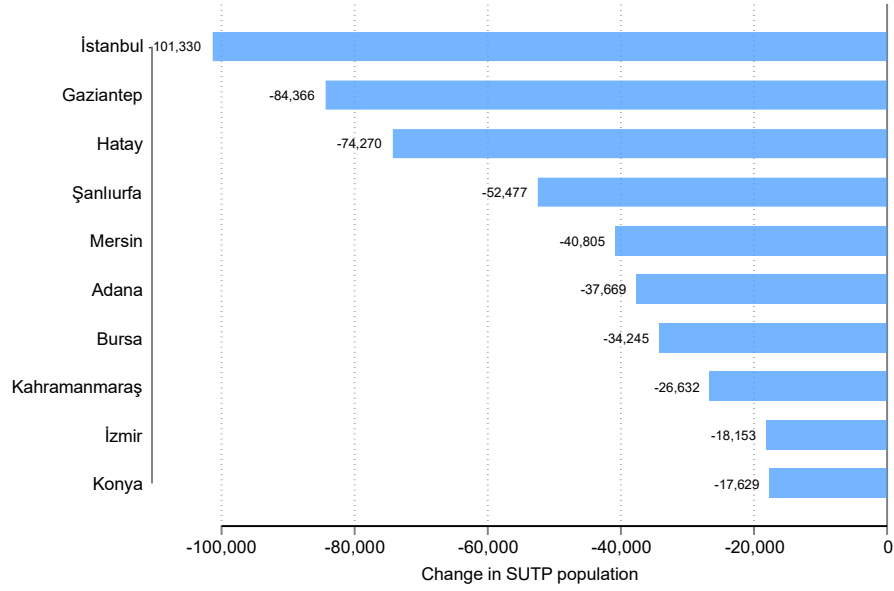
B. Average Monthly Change in the Post-Event Period



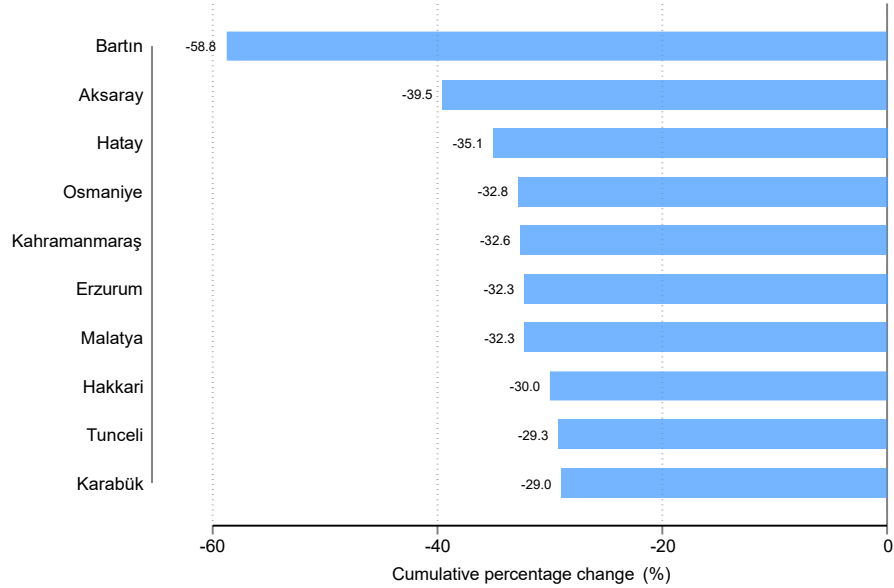
Notes: Panel A compares the observed national SUTP population with an adjusted counterfactual based on the January–October 2024 pre-event trend, carrying forward the estimated October–November 2024 level shift relative to that trend. The gray shading marks the October–November 2024 interval associated with nationwide address verification and record cleaning. The dashed vertical line marks December 2024, when the Assad regime fell. Panel B shows the average change between successive monthly SUTP observations during January–June 2025, July–December 2025, and January–June 2026. The January 2025 monthly change is measured relative to December 2024.

Figure 3. Provincial Declines in the SUTP Population, January 2025–June 2026

A. Largest Absolute Declines



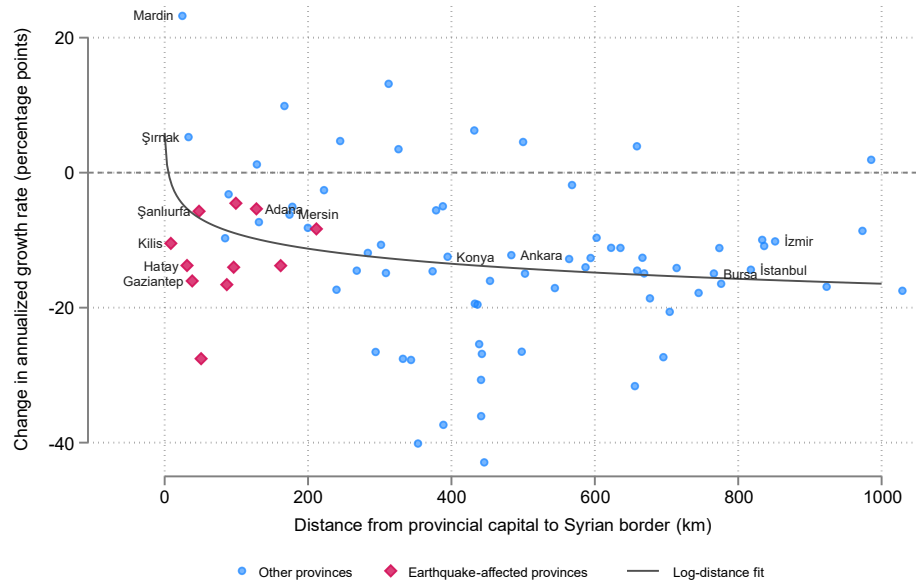
B. Largest Proportional Declines



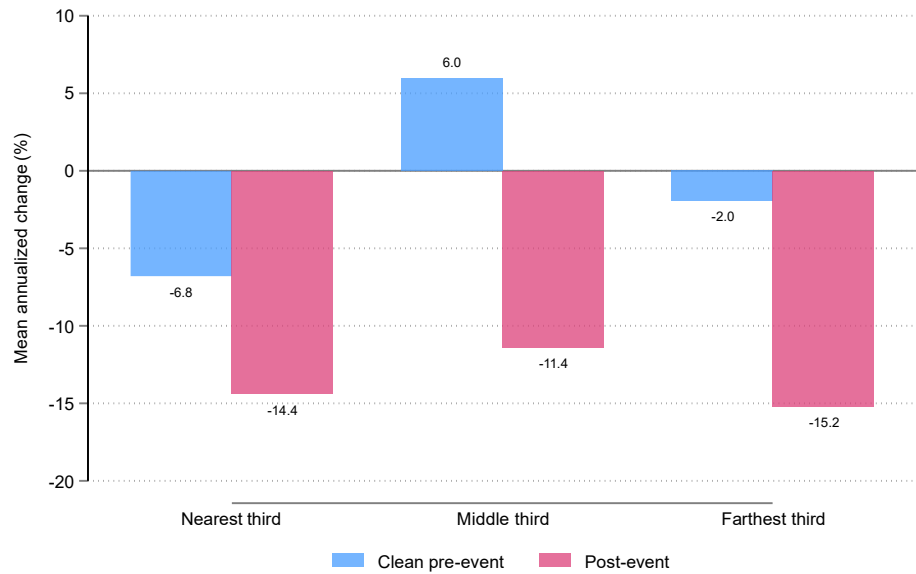
Notes: Panel A shows the 10 provinces with the largest absolute declines in the registered SUTP population between January 2025 and June 2026. Panel B shows the 10 provinces with the largest cumulative percentage declines over the same period. Negative values denote declines.

Figure 4. Geographic Patterns in Provincial SUTP Declines after December 2024

A. Change in Provincial Annualized SUTP Growth and Distance to the Syrian Border



B. Pre- and Post-Event Annualized SUTP Growth by Distance to the Syrian Border



Notes: Panel A plots the change in each province's annualized SUTP growth rate between the clean pre-event period (January–October 2024) and the post-event period (January 2025–June 2026) against the straight-line distance from the provincial capital to the nearest point on the Türkiye-Syria land border. Syrian-border provinces and the 10 largest SUTP-hosting provinces in January 2025 are labeled, and earthquake-affected provinces are distinguished. The curve shows the unadjusted fitted relationship using the logarithm of distance plus one, corresponding to the functional form used in the regression analysis. Panel B reports unweighted mean annualized SUTP growth rates in the clean pre-event and post-event periods across terciles of distance to the Syrian border.

7. Directions for Further Research

From Stock Changes to Individual Return Behavior

The administrative data used in this paper show when and where the registered SUTP population declines, but not which individuals and households leave Türkiye, which remain, or how the composition of these groups changes as returns continue. Return may vary systematically by age, gender, household structure, education, employment, vulnerability, duration of residence, province of residence, and degree of economic and social integration in Türkiye.

If the remaining population becomes increasingly concentrated among households with stronger labor market attachment, longer residence, school-age children, or greater protection and care needs, policy needs may change even as the population itself becomes smaller. Changes in the composition of returnees would likewise affect the human capital, vulnerability profile, and reintegration needs of those returning to Syria.

UNHCR's February and October 2025 Community Pulse surveys capture the circumstances and perspectives of Syrians who remain in Türkiye, including their return intentions. UNHCR's voluntary-return monitoring provides complementary information on those who leave (UNHCR 2025c, 2025f, 2026c). These sources could be used to examine how the composition of returnees changes over time and whether early returnees differ systematically from those who return later.

From Intentions to Realized Return

Stated return intentions do not necessarily translate into realized departures. Where respondents can be recontacted or linked through persistent anonymous identifiers, stated intentions could be compared directly with subsequent return outcomes at the individual or household level. Successive Community Pulse rounds could also show how intentions evolve over time and which characteristics are associated with shorter expected return horizons.

Return plans may be delayed, revised, or abandoned as household circumstances and conditions in Türkiye and Syria change. Housing, employment, schooling, security, family circumstances, and uncertainty may all affect whether and when an intended return takes place. Linking intentions

to subsequent outcomes would help identify which return plans persist and which remain contingent on changing circumstances.

Understanding Return Timing and Household Decision-Making

Among households that return, an important question is what determines the timing and sequencing of departure. Quantitative analysis could examine how return timing varies with household composition, employment, vulnerability, province of residence in Türkiye, and destination in Syria.

Return may occur in stages rather than as a single household move. One household member may return first to assess housing, livelihoods, security, or access to services before other family members follow. Such strategies could generate substantial lags between an initial decision to return and the departure of the full household.

Qualitative research is particularly valuable for understanding these decision processes. Interviews with Syrians who remain in Türkiye, those preparing to return, and recent returnees could examine how households weigh conditions in Syria, family considerations, livelihoods, housing and property, schooling, and uncertainty. UNHCR return monitoring already points to several of these factors in return decisions (UNHCR 2025e, 2026c).

These mechanisms may help explain one of the central timing patterns documented in this paper: the registered SUTP decline intensified during the second half of 2025 rather than immediately after December 2024. Combining quantitative and qualitative evidence could help disentangle delayed implementation of earlier return plans from subsequent changes in intentions, information, or constraints.

Explaining the Geography of Return and Remaining

The provincial results show that distance from Syria is more consistently associated with changes relative to pre-event SUTP trends than with the post-event rate of decline considered in isolation. Further analysis should examine whether local conditions in Türkiye are associated with return

behavior, including labor market attachment, housing conditions, refugee networks, sector of employment, access to services, and local recovery conditions.

Linking province of residence in Türkiye to subsequent changes in province of registration, observed return routes, and destinations in Syria would help clarify the relative roles of internal relocation within Türkiye, cross-border return movements, and other changes in the registered stock. Return patterns may be shaped by access to particular border crossings, transport costs, networks, and conditions in areas of origin. UNHCR's monitoring of voluntary returns through Provincial Directorates of Migration Management, land border crossings, and airports provides a potential basis for studying these movements alongside province-level administrative trends (UNHCR 2026c).

Provinces farther from Syria may experience substantial reductions in their registered SUTP populations even if physical departures are concentrated in a limited number of border crossings. Destinations within Syria may instead depend primarily on place of origin, housing availability, family ties, and local conditions. Linking residence in Türkiye, route of departure, and destination in Syria could help explain the spatial patterns documented in this paper.

Data Architecture for a Continuing Research Agenda

Answering these questions systematically will require data that connect changes in the registered population to individual and household characteristics, intentions, departures, and destinations. Relevant information is available from PMM administrative records, UNHCR Community Pulse surveys, voluntary-return monitoring, and operational data collected through Provincial Directorates of Migration Management, border crossings, and airports. The central data challenge is to make these sources comparable across instruments and, where feasible, link them over time at the individual or household level.

A harmonized core set of variables should cover demographic and household characteristics, socioeconomic status and vulnerability, residence and duration in Türkiye, return intentions, actual departure, and return route and destination. Where individual-level linkage is feasible, persistent anonymous identifiers could support longitudinal analysis while protecting confidentiality. Where

linkage is not possible, repeated representative surveys using harmonized instruments could track changes in the composition and intentions of the remaining population and compare them with standardized information collected from returnees. Purpose-built exit surveys at border crossings and airports, potentially building on the operational presence of UNHCR, the Turkish Red Crescent, and other humanitarian partners, could fill gaps in information immediately before departure.

A coordinated data architecture would make it possible to move from documenting when and where the registered SUTP population changes to explaining who leaves, who remains, how return decisions evolve, when departures occur, and where returnees go.

8. Conclusion

This paper uses monthly province-level administrative data through June 2026 to document how Türkiye's registered SUTP population evolved following the fall of the Assad regime in December 2024. By treating the October–November 2024 drop associated with nationwide address verification and record cleaning separately from subsequent changes, the analysis provides a clearer account of the timing, magnitude, and geographic distribution of the post-event adjustment relative to the preceding trend.

The national results show that the SUTP population was already declining before December 2024, but the post-event trend became substantially steeper. Between January 2025 and June 2026, the registered population fell by more than 615,000 and, by June 2026, stood about 509,000 below the adjusted pre-event trajectory. The adjustment was gradual rather than concentrated immediately after the political transition: the decline intensified during the second half of 2025 before moderating markedly in the first half of 2026.

The provincial results show that the contraction was widespread but uneven. The registered SUTP population declined in 77 of 81 provinces during the post-event period, yet a relatively small number of major hosting provinces accounted for most of the national reduction. Border provinces had already experienced relatively steep declines before December 2024, whereas changes relative to pre-event trends were generally more negative in provinces farther from the Syrian border. The

negative distance relationship persists across specifications that account for the October–November administrative adjustment and sample restrictions that exclude provinces with large adjustments, small SUTP populations, earthquake exposure, or influential observations. It is weaker when provinces are weighted by their SUTP populations, indicating that the gradient is more pronounced across provincial units than when greater weight is placed on the largest SUTP-hosting provinces. Earthquake-affected provinces experienced larger post-event declines on average, but the conditional earthquake relationship is less stable across specifications than the distance relationship.

These findings describe changes in the registered SUTP population rather than direct measures of return to Syria. The aggregate data cannot identify which individuals and households leave or remain, how the composition of these groups changes, or which movements and administrative processes underlie changes in the registered stock. Changes in the registered population may reflect return to Syria, departures to third countries, changes in legal status, or administrative changes in registration. The adjusted pre-event trajectory likewise provides a descriptive benchmark rather than a causal estimate of what would have occurred in the absence of the December 2024 political transition. Understanding the post-December adjustment therefore requires attention to the composition of the population that remains as well as to the processes underlying changes in the registered stock.

The period following December 2024 marks a new phase in Türkiye’s long experience hosting SUTP. The patterns documented in this paper provide a quantitative baseline for tracking how the scale, composition, and geography of Türkiye’s Syrian population evolve and for examining who returns, who remains, when departures occur, and how these patterns vary across locations.

Data availability

The province-level monthly data on Syrians under temporary protection (SUTP) used in this study originate from Türkiye’s Presidency of Migration Management (PMM) and were shared with the author by the United Nations High Commissioner for Refugees (UNHCR). PMM publicly reports current SUTP statistics on its website, but the historical monthly province-level series used in this analysis is not available there as a downloadable public data set. The data cannot be redistributed by the author. Researchers interested in accessing the underlying administrative data should contact PMM and/or UNHCR, in accordance with the relevant data access procedures.

References

- AFAD (Disaster and Emergency Management Authority). 2023a. "Press Release." February 20, 2023. Disaster and Emergency Management Presidency, Ministry of Interior, Republic of Türkiye, Ankara.
- AFAD (Disaster and Emergency Management Authority). 2023b. "About the Disaster Area Affecting the Life of the General Public." April 3, 2023. Disaster and Emergency Management Presidency, Ministry of Interior, Republic of Türkiye, Ankara.
- Al Husein, Nawras, and Natascha Wagner. 2023. "Determinants of Intended Return Migration among Refugees: A Comparison of Syrian Refugees in Germany and Turkey." *International Migration Review* 57 (4): 1771–1805.
- Alrababah, Ala, and Marine Casalis. 2024. "Understanding Refugee Return: Key Findings, Gaps, and Future Research." *Quarterly Digest on Forced Displacement*, Issue 10. World Bank–UNHCR Joint Data Center on Forced Displacement.
- Alrababah, Ala, Daniel Masterson, Marine Casalis, Dominik Hangartner, and Jeremy Weinstein. 2023. "The Dynamics of Refugee Return: Syrian Refugees and Their Migration Intentions." *British Journal of Political Science* 53 (4): 1108–1131.
- Baysan, M. 2021. "Türkiye İller CSV." GitHub Gist, February 12, 2021.
- Beaman, Lori, Harun Onder, and Stefanie Onder. 2022. "When Do Refugees Return Home? Evidence from Syrian Displacement in Mashreq." *Journal of Development Economics* 155: 102802.
- Chandro, Porimol. 2018. *CountryInfo*. GitHub repository.
- Demirci, Murat, and Murat Güray Kırdar. 2023. "The Labor Market Integration of Syrian Refugees in Turkey." *World Development* 162: 106138.
- Erdoğan, Murat. 2024. *Syrians Barometer 2023: A Framework for Achieving Social Cohesion with Syrians in Türkiye*. Ankara: Syrians Barometer.
- Fatima, Freeha, Efşan Nas Özen, and Dhushyanth Raju. 2026. "Cash Transfers and Employment among Syrian Refugees: Evidence from Rule-Based Eligibility in Türkiye." IZA Discussion Paper No. 18670, IZA@LISER Network, Esch-sur-Alzette, Luxembourg.
- Ghosn, Faten, Tiffany S. Chu, Miranda Simon, Alex Braithwaite, Michael Frith, and Joanna Jandali. 2021. "The Journey Home: Violence, Anchoring, and Refugee Decisions to Return." *American Political Science Review* 115 (3): 982–998.
- Kayaoglu, Aysegul, Zeynep Şahin-Mencütek, and M. Murat Erdoğan. 2022. "Return Aspirations of Syrian Refugees in Turkey." *Journal of Immigrant & Refugee Studies* 20 (4): 561–583.
- Müller-Funk, Lea, and Sonja Fransen. 2023. "'I Will Return Strong': The Role of Life Aspirations in Refugees' Return Aspirations." *International Migration Review* 57 (4): 1739–1770.
- Nas Özen, Efşan, and Dhushyanth Raju. 2025. "Evaluating the Employment Effects of a Labor Market Integration Program for Syrian Refugees and Turkish Nationals in Türkiye: Baseline Report." Social Protection & Jobs Discussion Paper No. 2516, World Bank, Washington, DC.
- Presidency of Migration Management. n.d. "İstatistikler [Statistics]." Ministry of Interior, Republic of Türkiye, Ankara.
- Presidency of Migration Management. 2024. "İçişleri Bakanı Ali Yerlikaya, Adres Tahkikatlarından Sonra Suriyelilerin Sayısının 2 Milyon 935 Bin 742'ye Düşüğünü Açıkladı [Interior Minister Ali Yerlikaya Announces That the Number of Syrians Fell to

2,935,742 Following Address Investigations].” November 20, 2024. Ministry of Interior, Republic of Türkiye, Ankara.

Presidency of Migration Management. 2025a. “After Syria’s Liberation, 509,387 Syrians Returned Voluntarily.” October 1, 2025. Ministry of Interior, Republic of Türkiye, Ankara.

Presidency of Migration Management. 2025b. “Voluntary, Safe, Dignified, and Orderly Returns Have Gained Momentum.” August 15, 2025. Ministry of Interior, Republic of Türkiye, Ankara.

Republic of Türkiye. 2014. *Temporary Protection Regulation*. Council of Ministers Decision No. 2014/6883. Official Gazette No. 29153, October 22, 2014.

UNHCR (United Nations High Commissioner for Refugees). 2025a. “Announcement about Border Crossing with Türkiye.” July 13, 2025. UNHCR Syria Help. <https://help.unhcr.org/syria/2025/07/13/announcement-about-border-crossing-with-turkiye/>.

UNHCR (United Nations High Commissioner for Refugees). 2025b. *Global Trends 2024*. Geneva: UNHCR.

UNHCR (United Nations High Commissioner for Refugees). 2025c. *Inter-Agency Community Pulse Survey: February 2025*. Ankara: UNHCR Türkiye.

UNHCR (United Nations High Commissioner for Refugees). 2025d. *Türkiye Monthly Operational Update: July 2025*. Ankara: UNHCR Türkiye.

UNHCR (United Nations High Commissioner for Refugees). 2025e. “UNHCR’s Grandi Reaffirms Support for Türkiye’s Refugee Response and Voluntary Returns.” January 29, 2025. UNHCR, Geneva.

UNHCR (United Nations High Commissioner for Refugees). 2025f. *Community Pulse October 2025*. Ankara: UNHCR Türkiye.

UNHCR (United Nations High Commissioner for Refugees). 2026a. “Returning Procedure.” UNHCR Türkiye Help. <https://help.unhcr.org/turkiye/information-for-syrians/volrep/returning-procedure/>.

UNHCR (United Nations High Commissioner for Refugees). 2026b. “Rights and Obligations.” UNHCR Türkiye Help. <https://help.unhcr.org/turkiye/information-for-syrians/rights-and-obligations/>.

UNHCR (United Nations High Commissioner for Refugees). 2026c. *Türkiye Annual Results Report 2025*. Geneva: UNHCR.

Appendix A. Additional Tables and Figures

Table A1. SUTP Population and Change, All 81 Provinces in Türkiye, 2024–26

Province	Jan 2024	Oct 2024	Nov 2024	Jan 2025	Jun 2026	Pre ann. (%)	Oct–Nov change (%)	Post change (%)	Post ann. (%)	Contribution (%)
Adana	230,223	216,819	211,879	209,678	172,009	–7.69	–2.28	–17.97	–13.05	6.12
Adıyaman	21,464	20,952	20,733	20,253	15,506	–3.17	–1.05	–23.44	–17.18	0.77
Afyonkarahisar	10,724	10,427	9,275	9,006	6,835	–3.68	–11.05	–24.11	–17.69	0.35
Ağrı	1,128	1,064	816	825	608	–7.49	–23.31	–26.30	–19.38	0.04
Aksaray	3,503	3,415	3,275	3,204	1,937	–3.34	–4.10	–39.54	–29.90	0.21
Amasya	1,277	1,313	1,184	1,126	885	3.78	–9.82	–21.40	–15.63	0.04
Ankara	88,921	87,771	85,754	83,767	67,715	–1.72	–2.30	–19.16	–13.94	2.61
Antalya	5,429	6,079	6,396	6,726	6,852	16.27	5.21	1.87	1.32	–0.02
Ardahan	107	99	100	99	94	–9.84	1.01	–5.05	–3.59	0.00
Artvin	63	71	69	65	53	17.28	–2.82	–18.46	–13.42	0.00
Aydın	8,477	8,335	8,229	8,150	6,648	–2.23	–1.27	–18.43	–13.39	0.24
Balıkesir	4,332	4,322	4,210	4,032	3,409	–0.31	–2.59	–15.45	–11.17	0.10
Bartın	396	351	273	257	106	–14.86	–22.22	–58.75	–46.48	0.02
Batman	12,013	11,796	11,336	11,215	10,335	–2.40	–3.90	–7.85	–5.60	0.14
Bayburt	25	35	29	29	36	56.62	–17.14	24.14	16.49	0.00
Bilecik	715	831	887	916	850	22.20	6.74	–7.21	–5.14	0.01
Bingöl	1,215	1,214	1,158	1,162	1,028	–0.11	–4.61	–11.53	–8.29	0.02
Bitlis	1,018	1,047	1,027	1,034	983	3.82	–1.91	–4.93	–3.51	0.01
Bolu	4,051	3,800	3,552	3,422	2,525	–8.17	–6.53	–26.21	–19.31	0.15
Burdur	8,698	8,519	7,991	7,869	6,196	–2.73	–6.20	–21.26	–15.53	0.27
Bursa	170,575	170,414	169,086	165,815	131,570	–0.13	–0.78	–20.65	–15.07	5.57
Çanakkale	4,057	3,862	3,352	3,277	2,604	–6.36	–13.21	–20.54	–14.98	0.11
Çankırı	637	545	544	532	428	–18.78	–0.18	–19.55	–14.23	0.02
Çorum	3,116	3,422	3,379	3,343	2,720	13.30	–1.26	–18.64	–13.55	0.10
Denizli	13,599	13,589	13,170	12,827	10,581	–0.10	–3.08	–17.51	–12.70	0.37
Diyarbakır	21,699	21,927	21,402	21,500	20,554	1.40	–2.39	–4.40	–3.13	0.15
Düzce	1,385	1,360	1,316	1,256	966	–2.40	–3.24	–23.09	–16.92	0.05
Edirne	586	573	532	495	358	–2.95	–7.16	–27.68	–20.45	0.02
Elazığ	11,679	11,220	10,786	10,570	8,601	–5.21	–3.87	–18.63	–13.54	0.32
Erzincan	118	114	116	112	126	–4.49	1.75	12.50	8.67	0.00

Table A1. SUTP Population and Change, All 81 Provinces in Türkiye, 2024–26

Province	Jan 2024	Oct 2024	Nov 2024	Jan 2025	Jun 2026	Pre ann. (%)	Oct–Nov change (%)	Post change (%)	Post ann. (%)	Contribution (%)
Erzurum	916	852	798	780	528	–9.21	–6.34	–32.31	–24.08	0.04
Eskişehir	6,789	6,999	6,809	6,802	6,137	4.15	–2.71	–9.78	–7.00	0.11
Gaziantep	427,017	429,318	412,153	401,860	317,494	0.72	–4.00	–20.99	–15.32	13.71
Giresun	286	341	338	324	251	26.43	–0.88	–22.53	–16.49	0.01
Gümüşhane	95	90	90	91	76	–6.96	0.00	–16.48	–11.94	0.00
Hakkari	11	9	11	10	7	–23.48	22.22	–30.00	–22.26	0.00
Hatay	278,336	251,763	222,488	211,784	137,514	–12.52	–11.63	–35.07	–26.28	12.07
Iğdır	64	73	73	77	68	19.18	0.00	–11.69	–8.40	0.00
Isparta	7,311	7,701	7,023	7,099	6,122	7.18	–8.80	–13.76	–9.92	0.16
İstanbul	529,944	528,225	511,393	498,885	397,555	–0.43	–3.19	–20.31	–14.81	16.47
İzmir	120,784	119,578	115,402	114,074	95,921	–1.33	–3.49	–15.91	–11.52	2.95
Kahramanmaraş	89,640	84,379	83,274	81,610	54,978	–7.75	–1.31	–32.63	–24.33	4.33
Karabük	1,332	1,212	1,149	1,114	791	–11.83	–5.20	–28.99	–21.47	0.05
Karaman	845	824	811	806	651	–3.30	–1.58	–19.23	–13.99	0.03
Kars	156	163	163	158	159	6.03	0.00	0.63	0.45	0.00
Kastamonu	1,363	1,235	1,145	1,116	899	–12.32	–7.29	–19.44	–14.16	0.04
Kayseri	81,924	82,714	80,217	77,210	60,255	1.29	–3.02	–21.96	–16.06	2.76
Kilis	71,311	66,695	64,105	62,601	46,433	–8.54	–3.88	–25.83	–19.01	2.63
Kırıkkale	1,663	1,757	1,723	1,658	1,256	7.61	–1.94	–24.25	–17.80	0.07
Kırklareli	933	839	665	653	551	–13.20	–20.74	–15.62	–11.30	0.02
Kırşehir	1,280	1,375	1,340	1,329	1,008	10.02	–2.55	–24.15	–17.73	0.05
Kocaeli	52,683	53,325	51,964	50,329	39,188	1.63	–2.55	–22.14	–16.19	1.81
Konya	120,194	121,577	119,420	116,694	99,065	1.54	–1.77	–15.11	–10.92	2.87
Kütahya	1,434	1,214	1,123	1,023	799	–19.91	–7.50	–21.90	–16.01	0.04
Malatya	30,870	28,464	27,613	26,969	18,271	–10.25	–2.99	–32.25	–24.03	1.41
Manisa	12,802	13,170	12,822	12,768	11,677	3.85	–2.64	–8.54	–6.11	0.18
Mardin	75,063	58,981	46,565	46,123	43,358	–27.49	–21.05	–5.99	–4.27	0.45
Mersin	219,013	202,198	188,109	182,899	142,094	–10.10	–6.97	–22.31	–16.32	6.63
Muğla	10,432	10,608	10,285	10,121	8,462	2.26	–3.04	–16.39	–11.87	0.27
Muş	1,504	1,515	1,318	1,345	1,268	0.98	–13.00	–5.72	–4.08	0.01
Nevşehir	12,862	13,172	12,271	12,100	10,211	3.23	–6.84	–15.61	–11.29	0.31
Niğde	5,642	5,449	5,295	4,746	4,274	–4.53	–2.83	–9.95	–7.13	0.08

Table A1. SUTP Population and Change, All 81 Provinces in Türkiye, 2024–26

Province	Jan 2024	Oct 2024	Nov 2024	Jan 2025	Jun 2026	Pre ann. (%)	Oct–Nov change (%)	Post change (%)	Post ann. (%)	Contribution (%)
Ordu	836	852	847	820	668	2.56	−0.59	−18.54	−13.47	0.02
Osmaniye	38,558	39,442	38,348	36,759	24,690	3.07	−2.77	−32.83	−24.49	1.96
Rize	1,284	1,296	1,296	1,177	884	1.25	0.00	−24.89	−18.30	0.05
Sakarya	14,967	15,497	15,112	14,792	11,580	4.75	−2.48	−21.71	−15.87	0.52
Samsun	8,774	9,106	8,293	8,031	5,705	5.08	−8.93	−28.96	−21.45	0.38
Şanlıurfa	294,054	271,658	243,965	243,568	191,091	−10.02	−10.19	−21.55	−15.74	8.53
Siirt	4,027	3,901	3,665	3,180	2,574	−4.15	−6.05	−19.06	−13.86	0.10
Sinop	175	179	205	203	176	3.06	14.53	−13.30	−9.58	0.00
Şırnak	2,116	1,986	1,903	1,927	1,850	−8.11	−4.18	−4.00	−2.84	0.01
Sivas	3,253	2,913	2,832	2,806	2,409	−13.69	−2.78	−14.15	−10.21	0.06
Tekirdağ	12,042	12,162	11,714	11,410	8,977	1.33	−3.68	−21.32	−15.57	0.40
Tokat	1,138	1,350	1,352	1,352	1,132	25.58	0.15	−16.27	−11.78	0.04
Trabzon	3,341	3,776	3,660	3,554	2,667	17.73	−3.07	−24.96	−18.35	0.14
Tunceli	39	31	29	41	29	−26.37	−6.45	−29.27	−21.68	0.00
Uşak	3,028	3,101	2,982	2,907	2,294	3.23	−3.84	−21.09	−15.39	0.10
Van	1,605	1,417	1,304	1,302	1,203	−15.30	−7.97	−7.60	−5.43	0.02
Yalova	3,493	3,582	3,522	3,372	2,766	3.41	−1.68	−17.97	−13.05	0.10
Yozgat	5,093	4,891	4,803	4,701	3,435	−5.25	−1.80	−26.93	−19.87	0.21
Zonguldak	633	622	609	604	462	−2.31	−2.09	−23.51	−17.24	0.02

Notes: Pre-event annualized growth (Pre ann.) is calculated from January to October 2024, and post-event annualized growth (Post ann.) from January 2025 to June 2026. The October–November 2024 percentage change is reported separately. Post-event percentage change is calculated from January 2025 to June 2026. Contribution is expressed as a percentage of the national net decline between January 2025 and June 2026.

Table A2. SUTP Changes in Syrian-Border and Earthquake-Affected Provinces

Province	Jan 2025	Jun 2026	Pre ann. (%)	Post ann. (%)	Post minus pre (pp)	Distance to Syrian border (km)	Border	Earthquake- affected
Gaziantep	401,860	317,494	0.72	-15.32	-16.04	38.45	Yes	Yes
Hatay	211,784	137,514	-12.52	-26.28	-13.75	31.25	Yes	Yes
Kilis	62,601	46,433	-8.54	-19.01	-10.48	8.64	Yes	Yes
Şanlıurfa	243,568	191,091	-10.02	-15.74	-5.72	47.98	Yes	Yes
Mardin	46,123	43,358	-27.49	-4.27	23.22	24.72	Yes	No
Şırnak	1,927	1,850	-8.11	-2.84	5.27	33.30	Yes	No
Adana	209,678	172,009	-7.69	-13.05	-5.36	127.99	No	Yes
Adıyaman	20,253	15,506	-3.17	-17.18	-14.01	96.26	No	Yes
Diyarbakır	21,500	20,554	1.40	-3.13	-4.53	99.37	No	Yes
Elazığ	10,570	8,601	-5.21	-13.54	-8.34	211.63	No	Yes
Kahramanmaraş	81,610	54,978	-7.75	-24.33	-16.59	86.72	No	Yes
Malatya	26,969	18,271	-10.25	-24.03	-13.78	161.86	No	Yes
Osmaniye	36,759	24,690	3.07	-24.49	-27.56	50.85	No	Yes

Notes: The table includes the union of the six provinces that directly border Syria and the 11 provinces in the earthquake-affected group; provinces satisfying both criteria appear once. Clean pre-event annualized growth (Pre ann.) is calculated from January to October 2024, and post-event annualized growth (Post ann.) from January 2025 to June 2026. The change in annualized growth equals the post-event rate minus the clean pre-event rate. Distance is measured in kilometers from the provincial capital to the nearest point on the Türkiye-Syria land border. pp = percentage points.

Table A3. National Robustness to Alternative Treatment of the October–November 2024 Interval and Newey–West Lag Choice

A. Interrupted Time-Trend Estimates

	Preferred specification	Alternative: November included in pre-event trajectory
Pre-event monthly trend	−9,084*** (2,349)	−15,174*** (4,655)
October–November level shift	−133,978*** (9,620)	—
December 2024 deviation	−25,690*** (2,349)	−110,949*** (37,392)
January 2025 post-event level shift	−70,251** (27,887)	−149,420*** (49,851)
Change in monthly trend	−31,098*** (3,953)	−25,008*** (5,602)
Implied post-event monthly trend	−40,181*** (3,180)	−40,181*** (3,116)
Observations	30	30

B. June 2026 Counterfactual Comparison

	Preferred adjusted counterfactual	Alternative Jan–Nov trend
Actual SUTP population	2,255,031	2,255,031
Counterfactual SUTP population	2,763,659	2,739,300
Actual minus counterfactual	−508,628	−484,268
Gap relative to counterfactual (%)	−18.40	−17.68

C. Newey–West Lag Sensitivity, Preferred Specification

	1 lag (preferred)	2 lags	3 lags
Change in monthly trend	−31,098*** (3,953)	−31,098*** (4,190)	−31,098*** (4,298)
Implied post-event monthly trend	−40,181*** (3,180)	−40,181*** (3,568)	−40,181*** (3,773)

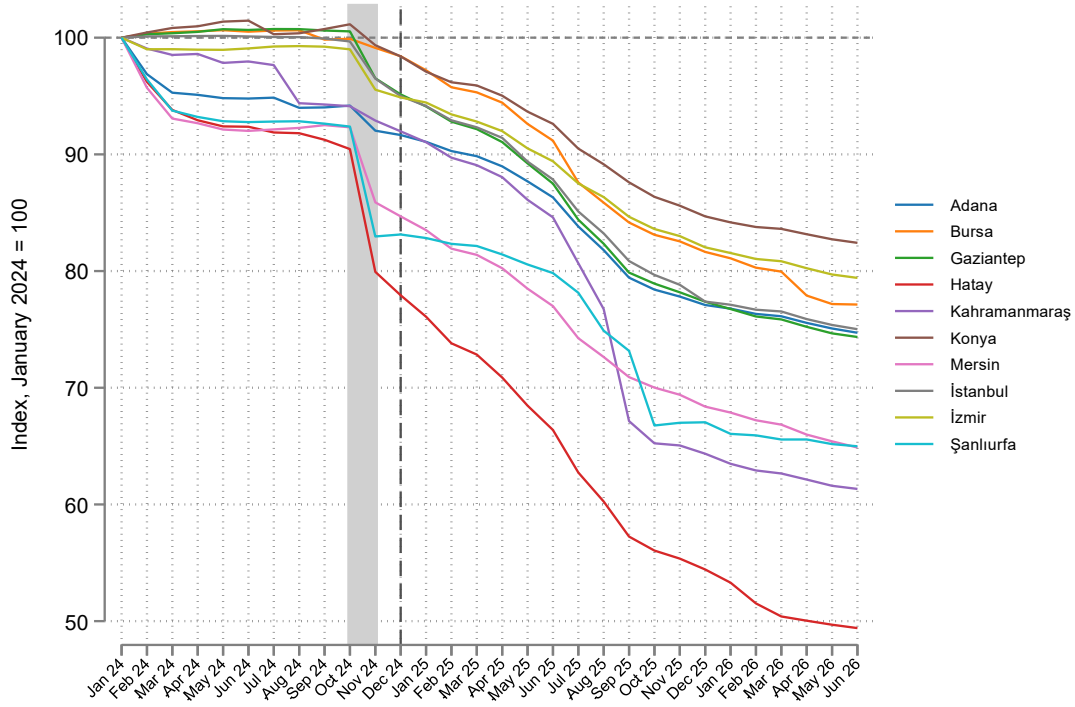
Notes: Panel A compares the preferred specification, which includes a separate level shift beginning in November 2024, with an alternative specification that includes November in the pre-event trajectory. The implied post-event monthly trend equals the pre-event trend plus the change in trend. Panel B compares the corresponding June 2026 counterfactual estimates. Panel C examines the sensitivity of inference in the preferred specification to allowing one-, two-, or three-monthly lags in the Newey–West variance estimator. Coefficient estimates are unchanged across lag choices; standard errors vary with the lag specification. Newey–West heteroskedasticity- and autocorrelation-consistent standard errors are in parentheses in Panels A and C. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Table A4. Robustness of Geographic Correlates of Provincial SUTP Changes

Specification	Log distance to Syrian border	Earthquake- affected province	Log SUTP population, Jan 2025	Oct–Nov 2024 change	Observations	R-squared
Dependent variable: Post-event minus clean pre-event annualized SUTP growth						
Preferred specification	−5.386*** (1.729)	−9.903* (4.998)	0.183 (0.680)		81	0.115
Alternative Jan–Nov 2024 pre-event benchmark	−5.890** (2.414)	−12.565** (6.279)	0.521 (0.662)		81	0.118
Controls for Oct–Nov 2024 adjustment	−5.373*** (1.725)	−9.854* (5.018)	0.175 (0.716)	−0.015 (0.243)	81	0.115
Excludes top 5% largest Oct–Nov adjustments	−3.870*** (1.222)	−4.952 (3.829)	−0.505 (0.600)		76	0.078
Excludes top 10% largest Oct–Nov adjustments	−4.070*** (1.285)	−4.809 (3.861)	−0.482 (0.607)		72	0.080
Population-weighted	−3.585 (2.808)	−7.989 (7.883)	−0.009 (0.587)		81	0.152
Excludes earthquake-affected provinces	−6.891*** (1.719)		0.306 (0.694)		70	0.160
Jan 2025 SUTP population ≥ 1,000	−5.108*** (1.850)	−9.668* (5.289)	0.350 (0.741)		60	0.169
Jan 2025 SUTP population ≥ 5,000	−5.083* (2.968)	−9.990 (7.055)	0.163 (0.771)		34	0.276
Excludes observations flagged by influence diagnostics	−3.901** (1.693)	−3.406 (4.354)	−0.300 (0.658)		65	0.066
Excludes Mardin	−3.683*** (1.356)	−5.622 (4.047)	−0.067 (0.670)		80	0.052

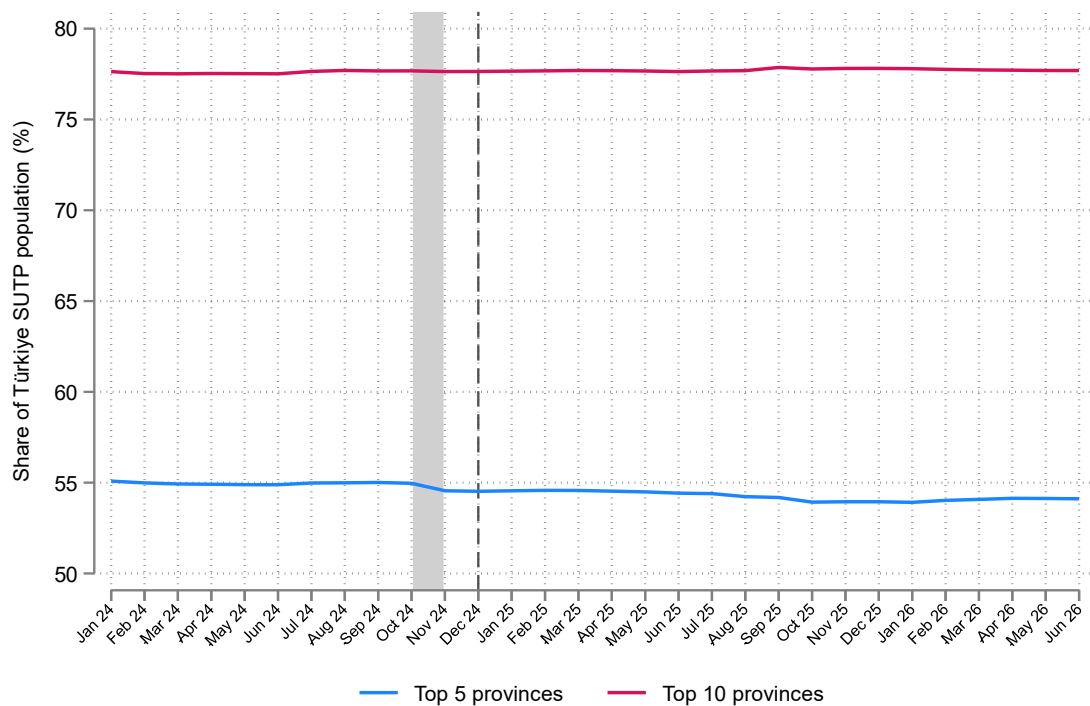
Notes: The alternative-benchmark specification uses January–November 2024 as the pre-event period. The October–November adjustment specification additionally controls for the province-level percentage change in the registered SUTP population between October and November 2024. The top 5 percent and top 10 percent specifications exclude provinces with the largest proportional declines over that interval. Population-weighted estimates use the January 2025 registered SUTP population as weights. The minimum-population specifications restrict the sample to provinces with at least 1,000 or 5,000 registered SUTP in January 2025. The influence-restricted specification excludes provinces flagged by standardized residuals, leverage, or Cook’s distance. Heteroskedasticity-robust standard errors are in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Figure A1. SUTP Population Trends in the 10 Largest Hosting Provinces, January 2024–June 2026



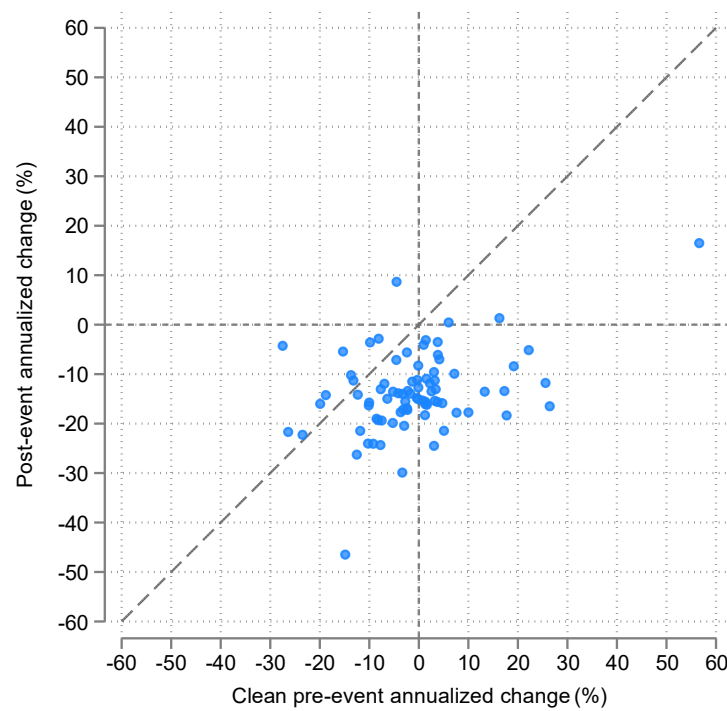
Notes: The figure shows monthly SUTP population trajectories for the 10 provinces with the largest registered SUTP populations in January 2024. Each series is indexed to January 2024 = 100. The gray shading marks the October–November 2024 interval associated with nationwide address verification and record cleaning. The dashed vertical line marks December 2024, when the Assad regime fell.

Figure A2. Geographic Concentration of Türkiye’s SUTP Population, January 2024–June 2026



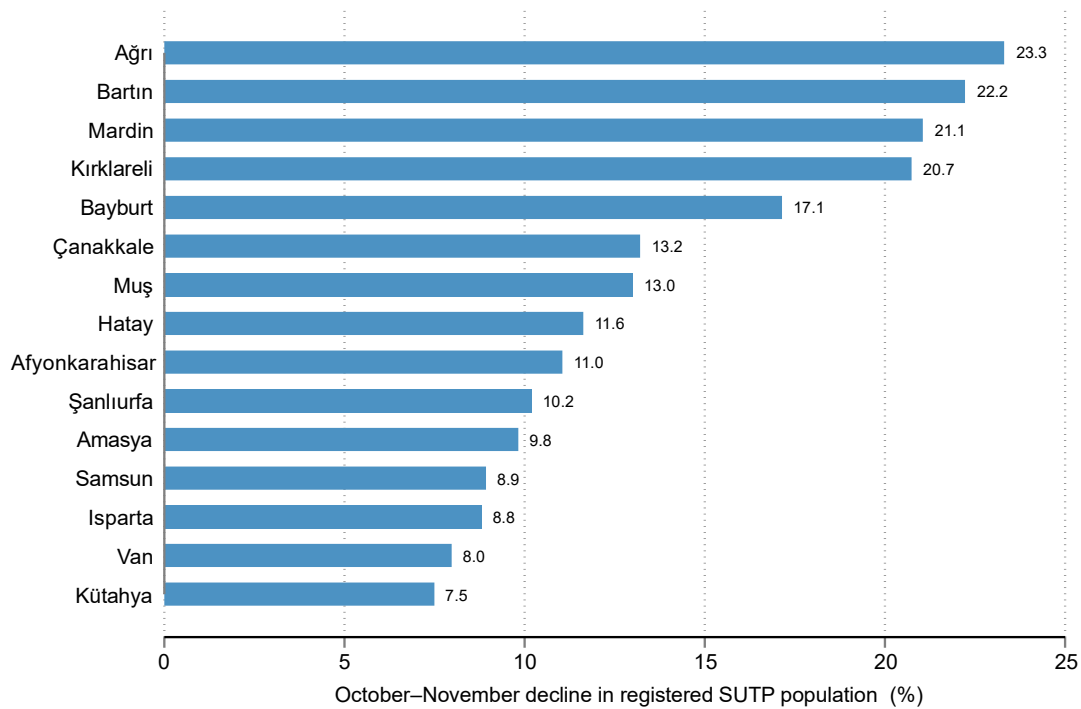
Notes: The figure shows the share of Türkiye’s registered SUTP population accounted for by the five and ten largest SUTP-hosting provinces in each month. Provinces are re-ranked each month. The gray shading marks the October–November 2024 interval associated with nationwide address verification and record cleaning. The dashed vertical line marks December 2024, when the Assad regime fell.

Figure A3. Provincial SUTP Growth before and after December 2024



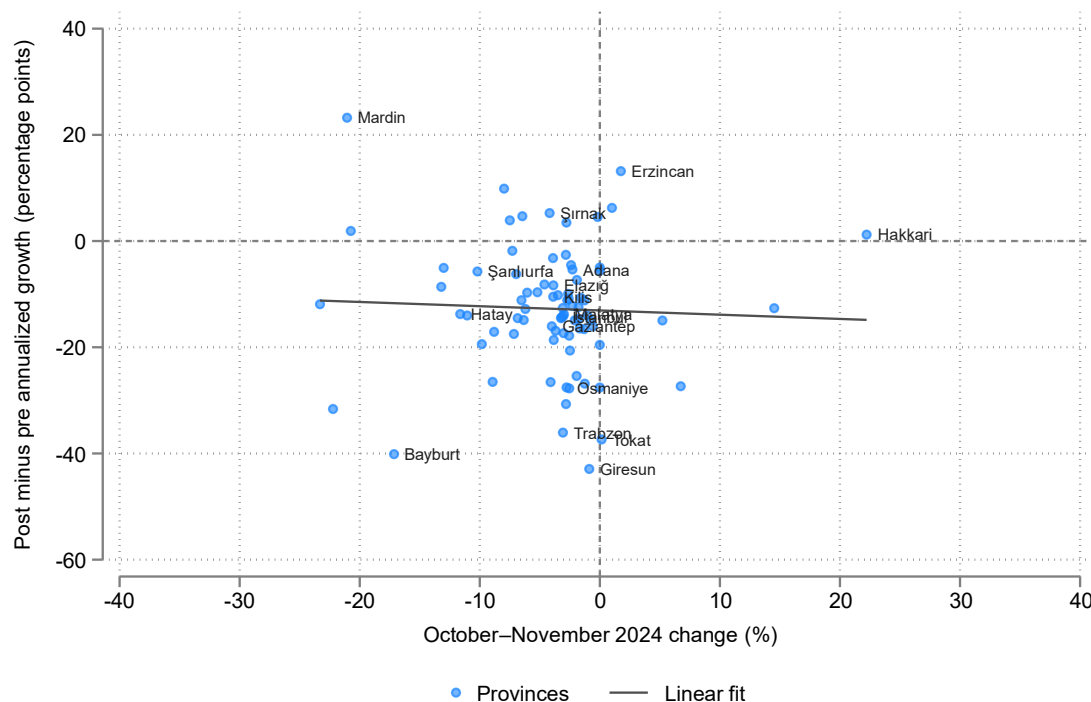
Notes: The figure plots each province's annualized SUTP growth rate during the clean pre-event period (January–October 2024) against its annualized growth rate during the post-event period (January 2025–June 2026). The 45-degree line denotes equal pre- and post-event annualized growth rates. Points below the line indicate that the provincial growth rate became more negative in the post-event period.

Figure A4. Provinces with the Largest October–November 2024 SUTP Population Adjustments



Notes: The figure shows the 15 provinces with the largest proportional declines in the registered SUTP population between October and November 2024. The interval coincided with nationwide address verification and record cleaning. Bars report the magnitude of the decline as a positive percentage.

Figure A5. October–November 2024 Adjustment and Subsequent Change in Provincial SUTP Growth



Notes: The figure shows the relationship between the October–November 2024 percentage change in the registered SUTP population and the subsequent change in provincial SUTP growth. The horizontal axis reports the October–November 2024 percentage change. The vertical axis reports the post-event annualized SUTP growth rate, January 2025–June 2026, minus the clean pre-event annualized growth rate, January–October 2024. Negative values indicate that the provincial trajectory became more negative after December 2024. The line shows the unadjusted linear fit. Syrian-border provinces and provinces identified as influential in the preferred geographic regression are labeled.