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Cultural Barriers, Structural Transformation, and Demographic Transition: Evidence from the 1989 Bulgarian-Turkish Refugee Inflow

Mevlude Akbulut-Yuksel

Dalhousie University, IZA@LISER and VHAS

Abdurrahman B. Aydemir

Sabancı University, IZA@LISER and RFBerlin

Murat Güray Kırdar

Koc University, IZA@LISER and RFBerlin

Belqi Turan

TOBB University of Economics and Technology

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Cultural Barriers, Structural Transformation, and Demographic Transition: Evidence from the 1989 Bulgarian-Turkish Refugee Inflow*

Abstract

Why do conservative middle-income economies often fail to move women into modern sectors even when urbanization and industrialization are underway? This paper studies whether cultural constraints can operate as a development bottleneck by limiting women's entry into tradable manufacturing and by slowing fertility decline and human-capital accumulation. We exploit the forced migration of ethnic Turks from Bulgaria to Türkiye in 1989 as a natural experiment. Although the refugees shared language, religion, and ethnicity with the local population, refugee women arrived with much stronger labor market attachment and much higher employment in manufacturing than native Turkish women. We combine a difference-in-differences design with an instrumental-variables strategy based on the settlement patterns of earlier waves of ethnic Turkish migrants, who were allocated by the Turkish government through state-led housing and land programs. We find that greater exposure to refugee women increased native women's labor force participation and employment a decade later, with especially large gains in the male-dominated tradable manufacturing sector and no significant gains among native men. A one-percentage-point increase in the refugee-to-native ratio raises native women's manufacturing employment by 0.9 percentage points, a roughly 23 percent increase over the 1990 baseline. Exposure also reduced fertility, and it increased middle-school completion among native girls and boys alike. We interpret these results as evidence that an exogenous cultural shock relaxed a binding constraint on women's entry into modern-sector employment, thereby generating movement along margins that structural transformation and demographic transition theory identify as foundational. Evidence from intermarriage and the World Values Survey is consistent with a relaxation of cultural constraints.

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Keywords

structural transformation, demographic transition, cultural barriers, refugees, women's employment, manufacturing

Corresponding author

Murat Güray Kırdar

mkirdar@ku.edu.tr

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1 Introduction

In many middle-income economies, the movement of labor out of low-productivity activities and into modern sectors has been incomplete not only because of capital scarcity or weak industrial demand, but also because women remain excluded from market work by persistent social constraints. This is particularly consequential in settings where demographic transition is unfinished and where female employment, fertility, and investment in children are tightly linked. In the spirit of Unified Growth Theory, development is not simply the accumulation of more capital or more schooling in isolation; it is also the process by which economies reallocate labor, reduce fertility, and expand human-capital investment as they move toward sustained growth (Galor and Weil, 1996, 2000; Galor, 2011).

This paper studies whether cultural barriers can act as a development bottleneck by constraining women’s entry into modern sectors and thereby slowing structural transformation and demographic transition. We examine the forced mass influx of ethnic Turks from Bulgaria to Türkiye in 1989. This episode brought a large group of refugee women into a conservative middle-income economy. They shared language, religion, and ethnicity with the native population but had been socialized under Bulgarian socialism into a much more work-oriented culture. Refugee women arrived with sharply higher labor force participation, markedly lower fertility, and substantially greater concentration in manufacturing than comparable native Turkish women.¹

The Turkish setting lets us examine cultural change as a source of structural transformation and demographic transition rather than only as a process of norm diffusion: it is a conservative middle-income economy in which modern-sector jobs existed, and the outcomes we observe extend from tradable manufacturing to fertility and schooling.

Our empirical strategy uses variation in refugee exposure across 623 district centers, comparing changes between the 1990 and 2000 censuses. To address endogenous settlement of the 1989 refugees, we instrument their local concentration with the 1985 distribution of earlier ethnic Turkish migrants, whose placement was shaped by state-led settlement and land-allocation policies. The identifying variation comes from differences across district centers within the same province, while province fixed effects absorb province-specific trends. Placebo exercises using the 1985 and 1990 censuses support the identifying assumption.

We find substantial effects on native women’s labor market outcomes. A one-percentage-point increase in the refugee-to-native ratio raises native women’s employment rate by about 0.6 percentage points and their labor force participation rate by about 0.7 percentage points a decade later. The strongest gains occur in manufacturing, where refugee women were heavily concentrated upon arrival: the manufacturing employment rate rises by 0.9 percentage points,

¹In our primary empirical analysis sample from the 1990 Turkish census, 72 percent of refugee women were in the labor force compared with only 20 percent of native women, and 66 percent of employed refugee women worked in manufacturing compared with only 23 percent of employed native women.

about 23 percent of its 1990 baseline. These effects are economically meaningful in a context in which female urban labor force participation was initially extremely low. The effects for native men are smaller and not statistically significant. The triple-difference results confirm that the female response is not simply part of a broader district-level employment expansion.

The labor-market results are matched by shifts along two additional margins that are central to development. Fertility declines in districts with greater exposure to refugee women. In addition, middle-school completion rises among native girls and boys alike, while higher levels of schooling show no comparable response. Although we do not claim to estimate long-run growth directly, these findings point to movement along margins that growth theory and demographic-transition theory treat as foundational: female entry into market work, especially modern-sector work; lower fertility; and greater investment in children’s education.

The mechanisms are consistent with a relaxation of cultural constraints, but we do not attribute the results to a single transmission channel. Inter-marriage rates between the 1989 refugees and natives are high—especially among younger cohorts—indicating substantial social integration. Evidence from the World Values Survey further suggests that women in more exposed regions become less supportive of male job priority and place greater value on work and personal autonomy. We view this evidence as supportive rather than definitive. Our reading is that an exogenous cultural shock relaxed a barrier to women’s entry into modern-sector employment, with downstream effects on fertility and schooling. The direct transmission of norms from refugee women to native women is likely one part of this process, alongside the visibility of women in modern-sector jobs and the change in what local communities regarded as acceptable.

This paper relates to, but differs from, recent canonical studies on the transmission of gender norms between groups. [Miho et al. \(2024\)](#) and [Jessen et al. \(2024\)](#) show that between-group exposure can alter women’s labor supply and fertility. Our question is whether cultural barriers can slow structural transformation and demographic transition in a conservative middle-income economy, and whether an exogenous shock can relax those barriers. Where outcomes are directly comparable, our aggregate participation effects substantially exceed, in relative terms, those reported in these settings. Our distinctive contribution is sectoral: the manufacturing-specific effects are larger, relative to baseline, than the aggregate effects in those settings.

The paper makes three contributions. First, it identifies women’s entry into *tradable manufacturing* as the central labor-market margin of adjustment, distinguishing the paper from existing norm-diffusion studies that focus on aggregate employment or hours worked. Because manufacturing output is largely traded outside the district, and because the female relative gain is concentrated in textiles while native men show no textile response, the female response is hard to attribute to local product demand. Second, it shows that the same exogenous shock that moves women into modern-sector employment also reduces fertility and raises middle-school completion among girls and boys—documenting joint movement along the margins that Unified Growth Theory identifies as the engine of the transition to sustained growth. Third, it pro-

vides this evidence from a conservative middle-income economy in which cultural constraints are plausibly binding even when modern jobs exist, connecting the findings to the question of why structural transformation is slow and uneven in economies that have not fully transitioned out of a male-breadwinner equilibrium.

The rest of the paper proceeds as follows. Section 2 develops the conceptual framework of the paper and reviews the relevant literature. Section 3 describes the Turkish context and the 1989 refugee inflow. Section 4 presents the data and descriptive evidence. Section 5 outlines the identification strategy. Section 6 presents the main results on women’s entry into modern-sector employment, fertility decline, schooling, and identification checks. Section 7 provides supporting evidence on social interaction and cultural relaxation. Section 8 concludes.

2 Conceptual Framework and Related Literature

2.1 Structural Transformation, Women’s Work, and Development

A central question in development economics is how labor reallocates from low-productivity activities into modern sectors. In many settings, this reallocation is gendered. Women may remain disproportionately outside the labor market, concentrated in home production, or excluded from modern industries even when economies urbanize and industrialize. This matters not only for gender equality but also for aggregate development, because barriers that prevent women from entering market work reduce the size of the effective labor force and slow the movement of labor into higher-productivity sectors.

This paper builds on a literature linking female labor supply to structural transformation. In high-income countries, the long-run rise in women’s employment reflected rising education, technological change, family policies, and shifts in women’s expectations and identity (Goldin, 2006; Olivetti and Petrongolo, 2017). Rendall (2013) emphasizes that structural change can narrow gender gaps by reducing the importance of physical strength in production, while Gaddis and Klasen (2014) demonstrate that the relationship between development and female labor force participation is historically contingent and does not conform to a universal U-shaped pattern (Goldin, 1995). Ngai and Petrongolo (2017) further show that the sectoral shift from goods to services has been a key driver of women’s labor market entry, linking structural transformation directly to gender gaps in employment. In the Turkish context, Tunalı et al. (2021) likewise connect women’s labor supply to the country’s uneven structural transformation.

Our paper complements this literature by focusing on a distinct friction that can impede the reallocation of female labor toward higher-productivity market activities: cultural barriers to women’s market work.² This mechanism is closely related to the broader literature on talent

²A related literature emphasizes the role of household technology in reducing the time required for home production and facilitating women’s labor market entry (Greenwood et al., 2005). Our paper instead focuses on a different friction: even where household technology and modern-sector jobs exist, cultural barriers can prevent women from entering market work.

misallocation. [Hsieh et al. \(2019\)](#), for example, quantify the aggregate productivity losses generated by barriers that restrict women’s access to high-productivity occupations. [Kimura and Yasui \(2010\)](#), similarly, extend the Galor–Weil framework by explicitly modeling how the shift of production from home to market interacts with gender heterogeneity and fertility, showing that this structural reallocation is inseparable from the evolution of gender gaps—the precise joint movement this paper documents empirically.

2.2 Demographic Transition, Fertility, and Human Capital

The second conceptual pillar is the literature on demographic transition and long-run development. In Unified Growth Theory, rising female relative wages, declining fertility, and increased investment in children’s human capital are key ingredients in the transition from stagnation to sustained growth ([Galor and Weil, 1996, 2000](#); [Galor, 2011](#)). A comprehensive review of the mechanisms behind the demographic transition and its role in the emergence of sustained growth is provided by [Galor \(2012\)](#). The quantity–quality trade-off in children is central to this mechanism ([Becker, 1981](#)): when the opportunity cost of childbearing rises and returns to education increase, fertility falls, and investment in children rises. [Lagerlöf \(2003\)](#) formalizes this within a growth model in which greater gender equality in human capital reduces fertility and re-coordinates economies onto higher-growth equilibria. [Doepke \(2004\)](#) shows empirically and theoretically how the rising opportunity cost of children during industrialization can account for the cross-country pattern of fertility decline during the transition to growth.

Our paper does not estimate a full growth model, nor does it claim to identify long-run aggregate growth effects. Nevertheless, the margins we study align closely with that framework. If exposure to refugee women increases native women’s employment in modern sectors, it can raise the opportunity cost of children and contribute to fertility decline. If the same shock also increases children’s middle-school completion, then the shock influences human-capital accumulation as well. These are precisely the types of margins through which broader growth transitions occur.

Our empirical evidence is also consistent with findings from developing-country settings in which manufacturing opportunities affected women’s life-cycle choices. [Heath and Mobarak \(2015\)](#), for example, show that manufacturing growth in Bangladesh delayed marriage and childbearing and increased schooling among girls. Our contribution differs in that the exogenous impulse is not factory openings per se, but an exogenous cultural shock that made female work in modern sectors more socially imaginable and more locally legitimate.

The link between female economic empowerment and demographic transition is also grounded in theoretical work that emphasizes the long-run development benefits of expanding women’s opportunities. [Doepke and Tertilt \(2009\)](#) demonstrate that men’s support for women’s rights is driven by the gains that flow through children: when women have greater economic autonomy,

they invest more in children’s human capital, reducing fertility and raising child quality in a way consistent with the quantity–quality trade-off at the heart of Unified Growth Theory.

2.3 Cultural Constraints as Development Frictions

A large literature documents that gender norms and social expectations shape women’s labor supply, sectoral choices, fertility decisions, and bargaining power within households ([Akerlof and Kranton, 2000](#); [Duflo, 2012](#); [Jayachandran, 2015, 2021](#); [Giuliano, 2020](#)). In this literature, culture is not merely residual taste heterogeneity. It can function as a real constraint that changes occupational choice, family behavior, and the economic returns to schooling. These norms constrain women’s economic opportunities, limiting both individual mobility and aggregate growth. They are especially persistent in regions such as Southwest Asia and North Africa, and South Asia, which continue to exhibit the world’s lowest female labor force participation despite progress on education and urbanization ([Bertrand, 2020](#); [Jayachandran, 2021](#)).³

Türkiye provides a particularly relevant setting in which to study these mechanisms. [İlkkaracan \(2012\)](#) argues that women’s low labor force participation in Türkiye reflects more than weak labor demand or education deficits; it also reflects a male-breadwinner model that assigns women to domestic and caregiving roles. Complementing this microeconomic perspective with macroeconomic evidence, [Kubota \(2026\)](#) develops a quantitative general equilibrium model of sectoral labor allocation by gender and finds that cultural barriers in Türkiye are large enough to require a wage premium of roughly 17 percent to compensate women for the disutility of non-family market work. This provides independent confirmation that the constraint this paper studies was binding in magnitude and not merely in direction.

This paper therefore treats gender attitudes and social interaction as part of a broader developmental mechanism. If cultural constraints are binding, then an exogenous shock that relaxes them should affect not only survey attitudes but also real allocations: who works, in which sector, how many children households have, and how much they invest in children’s schooling. [Alesina and Giuliano \(2010\)](#) provide supporting evidence that family norms and gender attitudes have persistent effects on female labor force participation across countries, consistent with the view that culture operates as a development friction rather than merely as a preference parameter.

2.4 Migration, Social Interaction, and Exogenous Cultural Shocks

The paper is also related to work showing that migration can transmit attitudes and behaviors across groups. Studies of migration, media, and social learning show that exposure to new role models can affect beliefs and behavior, including women’s labor supply and family decisions ([Fernández and Fogli, 2009](#); [Fogli and Veldkamp, 2011](#); [Jensen and Oster, 2009](#); [Fernández et al.,](#)

³The persistence of these constraints has a theoretical foundation in models of cultural transmission, which show that norms can be self-reinforcing across generations even when they impose economic costs ([Bisin and Verdier, 2001](#)).

2004). More directly related are recent papers that study exogenous population movements and the diffusion of gender norms. [Miho et al. \(2024\)](#) analyze the long-term persistence of gender norms following Stalin’s forced ethnic deportations. [Jessen et al. \(2024\)](#) show that internal migration shaped female labor force participation in Germany, with East German migrants raising West German women’s labor supply after reunification, mainly through longer working hours rather than higher employment rates.⁴

These papers establish an important benchmark: between-group exposure can alter women’s labor supply and fertility. Our paper builds on this benchmark to ask a different question: what relaxing cultural constraints does for structural transformation and demographic transition in a setting where the constraints were plausibly binding even where modern-sector jobs existed.⁵

3 Background: Incomplete Structural Transformation in Türkiye and the 1989 Refugee Inflow

3.1 Türkiye Before 1989

Before the 1989 refugee shock, Türkiye combined urbanization and industrialization with strikingly low female labor force participation, especially in urban areas. The country had not completed the transition from a traditional male-breadwinner model to an economy in which women participated broadly in market work. Female labor force participation in urban Türkiye—around 18 percent for the working-age population—remained far below that in many comparator economies, and modern-sector employment was strongly gendered.

This context matters for interpreting the refugee shock: manufacturing jobs already existed, especially in western and northwestern districts, so the shock could relax a barrier to reallocation rather than create new economic opportunities.

3.2 Migration of Ethnic Turks from Bulgaria to Türkiye

The Ottoman Empire, which extended across the Balkans, was home to a significant ethnic Turkish population. The empire’s decline in the late 19th century, along with geopolitical

⁴[Boelmann et al. \(2025\)](#) also examine East–West German migration, showing that West German mothers adapted their employment behavior to resemble that of their East German peers after childbirth. Relative to these papers, our study covers fertility and schooling in addition to labor supply, constructs an instrument from state-directed historical settlement, and documents the response in tradable manufacturing. The related paper by [Tuccio and Wahba \(2018\)](#) studies return migration to Jordan from other Arab countries. It finds that women in households with a return migrant hold more traditional gender norms than women in households without migrants. This effect is driven by returnees from destinations with more conservative gender norms than Jordan. These findings show that migration can move gender norms across settings in either direction, depending on the norms to which migrants are exposed. In our setting, native women are exposed to refugee women with less restrictive norms, and the transfer runs toward greater female market work.

⁵The paper also contributes to the broader literature on the economic effects of mass migration, which has focused primarily on short-run labor market competition ([Card, 1990](#); [Aydemir and Borjas, 2007](#); [Ottaviano and Peri, 2012](#); [Hunt, 1992](#); [Edo, 2020](#); [Boubtane et al., 2015](#)). Unlike that literature, we shift the focus from labor market competition to social learning mechanisms operating over a longer horizon. Consistent with this, [Aydemir and Kırdar \(2017\)](#) find no immediate effects of the 1989 migration shock on native female unemployment, while we show that the cultural shock contributed to long-term increases in native women’s labor force participation a decade later.

upheavals, led to substantial migrations from the region to Türkiye (Karpas, 2001). These migrations intensified following World War I and the establishment of the Republic of Türkiye, resulting in four major episodes of population movement between Türkiye and Balkan states, particularly Bulgaria, driven by treaties and forced migration (Clark, 2006).

The first significant wave of migration from Bulgaria to Türkiye occurred in 1925, with approximately 219,000 individuals relocating under a bilateral agreement (Kandiyoti, 2002). A second wave took place between 1950 and 1951, during which 154,393 ethnic Turks migrated to Türkiye following Bulgaria’s transition to communism. However, this migration was abruptly interrupted by a border closure that left many families separated (Poulton, 1997; Kirisci, 2000). In response, the “Close Relative Migration Agreement” was instituted in 1968, facilitating the migration of 116,521 ethnic Turks to Türkiye over the following decade (Doganay, 1996). However, from the late 1970s, Bulgaria’s communist regime implemented strict emigration controls, halting further migration for a decade.

Bulgaria’s migration restrictions remained in place until 1989, when the largest migration wave to Türkiye was spurred by the aggressive “Revival Process” assimilation policy that began in 1984. This policy involved renaming ethnic Turks with Slavic names, banning the Turkish language, closing mosques, and eliminating Turkish customs, with severe penalties imposed on dissidents (Amnesty International, 1986; Poulton, 1997). In the summer of 1989, escalating tensions led to the forced deportation of ethnic Turks to the Turkish border and a massive exodus. From May 26 to August 21, 1989, approximately 320,000 to 370,000 ethnic Turks sought asylum in Türkiye, marking one of the most rapid demographic shifts in late 20th-century Europe (Vasileva, 1992; Eminov, 1997; Neuburger, 2004). Türkiye responded by opening its borders and implementing supportive measures such as expediting citizenship processes, enabling currency conversion from Bulgarian funds to Turkish lira, and initiating a housing campaign to aid resettlement (Kirisci, 2000).⁶

Historically, state policies have significantly shaped migration and settlement patterns, particularly affecting the distribution of ethnic Turkish migrants from Bulgaria, which aids our identification. Figure 1 illustrates that from 1934 to 1937 the state settled 86 percent of these migrants, a share that rose to 100 percent during the 1950–1951 period (Geray, 1962). The 1968 wave, driven by family reunification, also led migrants to choose settlements near their relatives (DPT, 1990). Further, ethnic Turkish migrants were predominantly settled by the state in northwestern and western parts of Türkiye, particularly in the Marmara region, due to its similar climate and terrain and its proximity to the Bulgarian border. This settlement strategy also aligned with the broader state objective of demographic balancing in specific areas.

⁶The 1990 Turkish Census, conducted after the 1989 migration wave, recorded 460,560 Bulgarian-born individuals. As Bulgarian migration activity had been minimal since the late 1960s, the 1989 surge marked a significant shift, resulting in approximately a 60 percent increase in the Bulgarian-born population in Türkiye (Kirisci, 2000). Not all of the 1989 arrivals appear in this stock: after Bulgaria’s communist regime fell in November 1989, a sizable share of the refugees returned to Bulgaria before the 1990 Census (Vasileva, 1992). The census therefore records the refugees who stayed, and our treatment measures native exposure to these stayers.

Government-funded housing and land allocations under Settlement Law number 2510 further supported this process. Figure 2 demonstrates the distribution of ethnic Turks across Turkish provinces in the 1985 census, confirming that the majority of these migrants settled in western Türkiye. Appendix Figure A1 complements Figure 2 by mapping the realized 1989 exposure at the province level. Panel B of the figure speaks directly to our identifying variation, which comes from contrasts across district centers within the same province (Section 5), and shows that this variation is ample. Appendix Figure A2 presents the first stage as a binned scatter of the 1989 ratio against the 1985 instrument across the 623 district centers.⁷

3.3 Why Refugee Women Represented a Distinct Shock

Although ethnic Turkish women from Bulgaria shared language, religion, and ethnicity with the local population, they arrived with sharply different labor-market behavior and family outcomes. The source of this difference was Bulgaria’s socialist legacy. Turkish women in both Bulgaria and Anatolia had shared common institutions until the dissolution of the Ottoman Empire, but the socialist era in Bulgaria from 1944 to 1989 shaped a distinctly different work culture among ethnic Turkish women. Under Bulgaria’s socialist regime, women’s participation in the labor force was not merely encouraged but effectively expected, supporting both industrial ambitions and ideals of gender equality. By the 1980s, this had produced an 87 percent female labor force participation rate—among the highest globally—supported by advances in women’s education, expanded workplace rights, maternity benefits, and universal childcare (ILO, 2001). Legal reforms in the 1970s further fortified women’s rights in Bulgaria regarding divorce and reproductive autonomy. In contrast, Türkiye during the same period adhered to a “male breadwinner” model in which men were the primary earners and women primarily engaged in domestic and caregiving duties.

The women who arrived in the earlier migration waves were different. They had left Bulgaria before the socialist period fully transformed women’s roles. Höpken (1997) notes that during the post-Balkan Wars and pre-WWII years, the Turkish community in Bulgaria lived as a closed ethnic and religious group, primarily agrarian, with widespread illiteracy—reaching 81 percent among men and 91 percent among women in the 1930s. Women from those earlier cohorts arrived with gender norms broadly similar to those of native Turkish women. The 1989 cohort was fundamentally different. Adult working-age women in this wave had grown up entirely under socialism, which had fostered a work-oriented culture in which labor force participation was central to citizenship (Kaytan, 2014). This shift stemmed from the policies implemented by

⁷The binned scatter conveys three facts that the first-stage coefficient alone cannot. The bin means are close to linear across the entire support, so the linear first stage imposed by 2SLS is a good description throughout rather than an average over a curved relationship. The intermediate bins trace the same line as the extremes, so the relationship is not driven by a single high-leverage district. Finally, the plotted relationship is unconditional, with a slope of 0.34, close to the estimated first stage with the full control set, so the first stage is present in the raw data rather than generated by the covariates. The 387 district centers with a zero instrument have a mean realized ratio of 0.025 percent, and only 9 of the 95 district centers with positive settlement have a zero instrument.

the Bulgarian Communist Party beginning in the late 1940s and early 1950s, which intensified in the 1960s as authorities enforced measures to integrate minorities into a unified socialist citizenry (Zhelyazkova, 1998). The 1989 refugee women therefore embodied a genuinely distinct model of women’s work that set them apart both from earlier migrant cohorts and from the native population.

The descriptive evidence makes this contrast between refugee and native women visible. In our primary analysis sample from the 1990 Turkish census, 72 percent of refugee women were in the labor force compared with only 20 percent of native Turkish women. Table 1 shows that the two groups also differed sharply in sectoral employment, fertility, and education. Specifically, 66 percent of employed refugee women worked in manufacturing upon their arrival in Türkiye, in stark contrast to just 23 percent of employed native women. Refugee women also had fewer births and much higher middle-school and high-school completion rates.

The raw comparison does not show on which margin native women were held back: participation or the choice of sector. Comparing native women with native men, with and without conditioning on employment, answers this. Among the employed, native women’s manufacturing share matched native men’s (22.9 versus 22.3 percent). Unconditionally, however, only 3.9 percent of native women aged 18–39 worked in manufacturing, against 18.5 percent of native men. Because the shares among the employed were equal, the entire gap in the unconditional shares reflects the gap in employment. Whatever kept native women out of manufacturing therefore kept them out of market work altogether. It did not steer working women away from the sector. Textiles, the manufacturing branch in which employed native women were most concentrated, show the same pattern most sharply. Among the employed, native women were more concentrated in textiles than native men (15.1 versus 6.4 percent). Yet only about 2.5 percent of all native women worked in textiles, against roughly a third of all refugee women. In composition, both sectors were male-dominated: native men made up 84 percent of native manufacturing workers and 70 percent of native textile workers.

The refugee–native participation gap is not an artifact of education either. Most refugee women held middle- or high-school degrees, and the heterogeneity analysis in Table 10 later locates the causal response in this education band. Within this band, refugee women’s labor force participation was 71.2 percent against 34.6 percent for natives, and their unconditional textile employment was 35.0 against 2.5 percent. In an individual-level regression with district-center, single-year-age, and education fixed effects, the participation gap falls only from 51.9 to 37.4 percentage points. Education thus accounts for only about a quarter of the raw difference.

Among men, by contrast, refugee and native labor-market attachment was nearly identical.⁸ The refugee–native gap in market work was therefore a gap among women. These contrasts are precisely what the development bottleneck interpretation requires. Native women were not

⁸Among men aged 18–39, 96.6 percent of refugees and 91.8 percent of natives were in the labor force, and 87.5 versus 81.9 percent were employed. Refugee and native men differed mainly in sectoral allocation: refugee men were more concentrated in manufacturing (50.0 versus 22.3 percent) and native men in community services.

absent from modern sectors because jobs did not exist. Refugee women filled such jobs in large numbers upon arrival. Native women were absent because the social environment made their participation in those sectors difficult to imagine or sustain.

Qualitative evidence reinforces these descriptive differences and establishes that refugee women’s participation in modern-sector employment was directly visible in local communities. Drawing on interviews with immigrant women from Bulgaria, both [Parla \(2009\)](#) and [Kaytan \(2014\)](#) document that refugee women worked in manufacturing, contributed equally to household income, and regarded paid employment as a normal part of life—in sharp contrast to prevailing norms among native women. Because refugees settled in towns and cities as neighbors of natives, their work behavior was publicly observable and generated tensions with traditional gender expectations. Several immigrant women reported that “local women have begun working after seeing it from us” and that immigrant women “broke the taboo of women’s working” ([Kaytan, 2014](#), pp. 84, 86, 87). [Kaytan \(2014, p. 81\)](#) notes more broadly that “immigrant women think they set a good example for women in Turkey in terms of paid employment outside the home”—consistent with the interpretation that refugee women made modern-sector employment socially imaginable for native women rather than simply transmitting attitudes.

Although we do not directly observe refugees’ pre-migration attitudes, the available survey evidence points in the same direction. In the early-1990s World Values Survey, only 29 percent of Bulgarian women agreed that men should have priority in employment when jobs are scarce, compared with 57 percent of Turkish women. The comparison is between Bulgaria and Türkiye as countries rather than between ethnic Turks in Bulgaria and Turkish natives, so we treat it as suggestive; the census, historical, and qualitative evidence above does not share this limitation.

Taken together, these contrasts establish that refugee women brought with them a genuinely different model of women’s work and family life. Their visible presence in local communities, as neighbors, coworkers, and eventually spouses of natives, represented an exogenous shift in the local social environment that made modern-sector female employment visible and locally legitimate. Under the interpretation we advance in this paper, this shift relaxed a constraint that had previously limited native women’s entry into modern-sector employment even when jobs existed, and it did so precisely because the two groups shared enough cultural common ground—language, religion, and ethnic identity—for intensive social interaction to take place.

4 Data and Descriptive Statistics

The primary data sources for our analysis are the 1985, 1990, and 2000 Turkish Censuses. We also use the 1990 and 1996 waves of the World Values Survey for complementary analysis of gender norms and attitudes. The Turkish Statistical Institute provides 5% random samples of the population in each census. These samples include information on demographic indicators such as the number of births and educational attainment as well as labor market outcomes,

including employment status, labor force participation, and sector of employment. Importantly, the census data also provide detailed information on individuals' place of birth and current district of residence, which is crucial for our identification framework.

Our analysis is based on labor markets defined by the 1985 classification of districts. In 1985, Türkiye was administratively divided into 67 provinces, each comprising several districts. Additional districts were created between 1985 and 2000 by subdividing existing ones, thereby enabling us to match the districts from the 1990 and 2000 censuses with the 1985 boundaries. The census data report the location of residence of all individuals, identifying both the province and district and indicating whether the area of residence is a district center (a provincial center is also a district center), a town that is not a district center, or a rural area. Using this information, we identify whether each person in a given district lives in the district center or elsewhere in that district.

The unit of analysis in our study is district centers, as in [Aydemir and Kırdar \(2017\)](#).⁹ There are several reasons for this choice. First, in most districts, the population outside the district center is primarily engaged in agriculture and, therefore, lacks exposure to the same labor market as the residents of the district center. In addition, some districts include other towns that are quite far away from the district center, and the residents of these other towns within the same district are not part of the same labor market as the residents of the district center because commuting to a different town for work was very unlikely in Türkiye in 1985.¹⁰ Moreover, most ethnic Turkish migrants settled in urban rather than rural areas.

Crucial to our identification, the censuses also report the place of residence five years prior, indicating the country of residence for those who moved internationally. Using the 1990 Census, we define “1989 ethnic Turkish refugees” as individuals who were in Bulgaria in 1985 but in Türkiye in 1990—virtually all of whom arrived in the 1989 wave. Additionally, the census data include place of birth information, allowing us to identify ethnic Turkish migrants from Bulgaria who had already been residing in Türkiye five years before the census. We refer to this group as “earlier ethnic Turkish migrants.”

In our analysis, we focus on the economic and social outcomes of native women and examine the changes in these outcomes over time using data from the 1990 and 2000 Turkish censuses. We define natives as individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants. Our primary variable of interest is the ratio of 1989 ethnic Turkish refugee women aged 18–39 to native women aged 18–39 in a given district in 1990, measured as a fraction.¹¹

⁹Major cities that house more than one district center are treated as unified metropolitan areas. In 1985, there were three such cities (Istanbul, Ankara, and Izmir) with a population above one million.

¹⁰In fact, 44% of the total country population in 1985 lived in either villages or towns that were not district centers, which we exclude.

¹¹All regressions, including those with male outcomes and the gender-differenced specifications, use this female exposure ratio, because the hypothesized cultural shock is exposure to refugee women; using a common regressor across genders also makes the gender-differenced coefficients directly interpretable as female-minus-male responses to the same shock.

Turkish-born descendants of earlier ethnic Turkish migrants belong to neither group and are therefore included in the native sample. We therefore do not interpret our estimates as isolating horizontal transmission in a narrow sense; our interpretation is that exposure to the 1989 refugees relaxed cultural constraints in receiving communities. The robustness checks in Section 6.5 include estimates that exclude all members of households containing a Bulgarian-born individual.

We generate the variables for labor market outcomes using two questions in the censuses on labor market activity. The first one elicits whether an individual has worked during the reference week (the week preceding the Census date). According to this information, we define employed individuals as i) those with positive hours of work in the reference week, either paid in cash or in-kind, and ii) those who did not work in the reference week but whose attachment to their job continues. The second question identifies individuals actively seeking employment. We use this information, as well as the information on employment status, to establish individuals' labor force participation status. When we compare the labor force participation and employment rates calculated from the 2000 Census with the corresponding official rates calculated from the 2000 Household Labor Force Survey (HLFS), both conducted by the Turkish Statistical Institute, for the urban sample, we find that the employment rates match quite well in the two data sets.¹² In addition, we generate an indicator for employment in the manufacturing sector, which is where refugee women were predominantly employed upon their arrival in Türkiye. This variable takes a value of one if the native woman is employed in manufacturing and zero otherwise.

For fertility, we use the total number of births a woman has had by the time of the census, based on the question about the number of children she has given birth to. We focus on this measure rather than marital status or an indicator for ever giving birth because nearly all Turkish women marry and 98% have at least one child, with the first birth typically occurring about 1.6 years after marriage (Kırdar et al., 2018).

Our analysis focuses on native women aged 18 to 39 when examining female labor market outcomes. This age range captures the adult population while accounting for early retirement trends of the 1990s, during which many women in their early 40s opted for early retirement schemes (Tunalı et al., 2021).¹³ Similarly, in analyzing fertility outcomes, we focus on the same age group, as it aligns with the peak reproductive years during the 2000s in Türkiye. For educational outcomes, we examine four levels of attainment and adjust the age range to the level being assessed: 14- to 19-year-olds for primary school, 17- to 22-year-olds for middle school, 20- to 25-year-olds for high school, and 25- to 30-year-olds for college. The lower bound of each

¹²The employment rates for women aged 15-64 are 16.5% in the census and 16% in the Household Labor Force Survey (HLFS), while for men, the rates are 64% and 68%, respectively. However, unemployment and labor force participation rates show greater discrepancies; participation is higher in the census for both genders (78.5% for men and 23.9% for women) compared to the HLFS (74.0% for men and 18.4% for women). This variation is due to different unemployment definitions: the census simply asks if a person is looking for a job, whereas the HLFS requires a job search within the last three months using certain channels, resulting in lower unemployment rates reported in the HLFS.

¹³We check the robustness of our findings using alternative age intervals as summarized in Appendix Table A1.

bracket ensures that individuals are old enough to have completed the level; the upper bound ensures exposure to the refugee arrival at the relevant school age.¹⁴

4.1 Descriptive Statistics

Table 1 presents descriptive statistics for refugee and native women and men in the 1990 census, conducted shortly after the refugee inflow; Section 3.3 discusses the labor-market contrasts in detail. Within manufacturing, the refugee concentration is driven by textiles, where 47% of employed refugee women worked, compared with 15% of employed native women. Table 1 also documents the demographic contrasts. Refugee women had fewer births than native women (1.49 versus 1.83) and far higher schooling: almost 40% held middle school degrees against less than 9% of native women, and nearly 45% held high school degrees against about 16%.

Appendix Table A2 presents descriptive statistics for our native sample, separately for the 1990 and 2000 censuses. The fraction of women in the labor market increased from 19.6% to 28.7% between 1990 and 2000. Similarly, the fraction of women employed rose from 16.9% to 18.7%, and the fraction employed in manufacturing increased from 3.9% to 4.3%. In contrast, the fraction of men in the labor market remained relatively stable, at around 90% in both censuses. Consistent with these findings, the gender gap in labor market participation narrowed over time. Specifically, the gap in labor market participation decreased from 72 to 62 percentage points, the employment rate gap declined from 65 to 53 percentage points, and the gap in the manufacturing employment rate dropped from 15 to 13 percentage points.

Appendix Table A2 also reveals a positive trend in education, with significant increases in the fractions holding high school and college degrees, which rose from 21.3% to 32.4% and from 5.6% to 11.8%, respectively, over the decade. These gains occurred at the expense of the fraction of women with only primary school degrees, while the fraction with middle school degrees remained stable. Additionally, Appendix Table A2 highlights a secular decline in fertility, with the number of children per woman falling from 1.83 in 1990 to 1.46 in 2000.

Some of these nationwide trends reflect secular patterns of education and rural-to-urban migration rather than the refugee shock; the province fixed effects in our specification absorb such province-level trends, as Section 5 details and the placebo checks in Section 6.4 confirm.

5 Identification Method and Estimation

To examine the long-term effects of the forced migration—and the cultural shock it induced—on native women’s entry into modern-sector employment, fertility, and schooling, we estimate a difference-in-differences model. This method exploits the spatial distribution of refugee women

¹⁴For middle school, for example, the upper limit of 22 ensures that the oldest person in the sample, born in 1978 and surveyed in the 2000 Census, was 11 years old in 1989 when the refugees arrived, below the typical middle school starting age of 12. The minimum ages for each attainment level follow conventions established in other studies (Aydemir et al., 2022; Akyol and Kırdar, 2022).

at their time of arrival and the changes in economic and social outcomes of native women over two census periods. Since we use two waves of census data, we present our analysis as changes in the outcomes of interest from 1990 to 2000 as follows:

$$\Delta(\text{Native Outcome})_{pd} = \alpha + \beta(\text{Ethnic Turkish Refugees/Natives})_{pd,90} + X_{pd,90}\Gamma + \mu_p + \varepsilon_{pd} \quad (1)$$

The unit of analysis in equation (1) is the 623 province and district centers defined by the 1985 administrative classification. For each district d in province p and census year t , we compute the shares among native women (men) aged 18 to 39 who are (a) employed, (b) in the labor force, and (c) employed in manufacturing, excluding all individuals born in Bulgaria. Each outcome is measured as the change between the 1990 and 2000 censuses. The key variable of interest is the ratio of 1989 ethnic Turkish refugee women aged 18–39 to native women aged 18–39 in the district in 1990; the same female-based exposure ratio is used in the male-outcome and gender-differenced regressions. As defined in Section 4, the 1989 ethnic Turkish refugees are individuals who resided in Bulgaria in 1985 but were enumerated in Türkiye in the 1990 Census—virtually all of whom arrived with the 1989 wave. The specification in equation (1) essentially compares first differences (time differences) between treatment districts (high-intensity migrant inflows) and control districts (low-intensity migrant inflows).

The control variables, $X_{pd,90}$, include district-level characteristics such as the shares of five age groups (18–19, 20–24, 25–29, 30–34, 35–39), six education groups (illiterate, less than primary, primary, junior high, high school, and college graduates), and nine employment sectors in the labor force, as well as the logarithm of population in 1990. In equation (1), μ_p represents province fixed effects, which capture province-specific trends in outcomes across the two censuses, and ε_{pd} is the error term. We report heteroskedasticity-robust standard errors in all district-center-level regressions. Because equation (1) is estimated as a long difference with one observation per district center, clustering at the district level would coincide with heteroskedasticity-robust inference. Section 6 assesses the robustness of inference to spatial correlation across district centers.

Because μ_p absorbs province-specific trends, the identifying variation comes from district-center level changes within the same province. The key parameter of interest in equation (1), β , quantifies the impact of the concentration of 1989 refugee women in a given district in the 1990 census on the changes in outcomes for native women from 1990 to 2000 across district centers in Türkiye. Since the 1989 flow accounts for all ethnic Turkish migrants who arrived in Türkiye within the last five years recorded in the 1990 census, the 1989 refugee wave is essentially the only relevant shock captured by our treatment variable.

We estimate equation (1) for the sample of native women and men separately. We also estimate equation (1) using a triple-difference specification where we define the outcome as the

difference in mean outcomes of native women and men in district d in province p in year t . In this specification, the dependent variable is the change between 1990 and 2000 in the difference between the share of native Turkish women and the share of native men who are: a) employed, b) in the labor force, and c) employed in the manufacturing sector. We weight the district-center level observations by $[1/(1/pop1990 + 1/pop2000)]$, where $pop1990$ and $pop2000$ refer to the population size in 1990 and 2000, respectively.¹⁵ In the gender-specific regressions, the composition-share controls and the populations entering the weights are computed within the indicated gender; in the gender-differenced regressions, they are computed over men and women combined, so the differenced coefficients need not equal the difference between the gender-specific coefficients.

The 1989 ethnic Turkish refugees could have chosen their settlement locations based on some unobserved factors correlated with both our main variable of interest and the outcomes we study. For example, they could have chosen locations with better labor market prospects conducive to labor force participation and employment growth for both men and women. Although our specification accounts for province-fixed effects by utilizing multiple waves of census data, we also employ an instrumental variable strategy to account for the potential endogeneity in the settlement of the 1989 ethnic Turkish refugees. The instrument is defined as the ratio of earlier ethnic Turkish migrants in 1985 (those born in Bulgaria but residing in Türkiye in 1985) to natives (excluding all born in Bulgaria) in the adult sample (individuals 18 and above) in a given district in 1985. Hence, the instrument captures the settlement patterns of earlier ethnic Turkish migrants who arrived in Türkiye with the 1968 wave or earlier.

Our proposed instrument is motivated by historical settlement patterns of ethnic Turkish migrants from Bulgaria and state-led settlement policies. As discussed in Section 3.2, the latest migration wave from Bulgaria came under the 1968 agreement; because of strict border control by the communist state, there was almost no migration from the late 1970s until the mass migration of 1989, which the 1985 census corroborates. Moreover, the Turkish government had a significant role in the settlement of earlier flows of ethnic Turkish migrants from Bulgaria.

Although some ethnic Turkish migrants who arrived during earlier waves might have resettled after their initial arrival, the persistence of the original settlement pattern enhances the credibility of our instrument. We find a strong correlation between the settlement provinces of those who arrived in 1950-51 and their places of residence in 1985: most of the earlier ethnic Turkish migrants remained in their original settlement provinces, thereby shaping the settlement patterns of future migration flows from Bulgaria.¹⁶ This finding is not surprising given the state-led integration policies and housing campaigns.

¹⁵Since district centers have different populations in 1990 and 2000, we use a weighted average of the population sizes in the two survey years. We also examine whether district-center populations responded endogenously to the refugee shock via internal migration, as discussed later in the Identification Checks section.

¹⁶A regression of the provincial shares of ethnic Turkish migrants in 1985 on the provincial shares of those who arrived during the 1950-51 wave yields an R^2 of 0.72 in the sample of provinces where the share of ethnic Turkish migrants in 1985 exceeds 0.01.

Still, the government-mandated settlement patterns of refugees could have been influenced by economic conditions. In that case, we would expect a correlation between the settlement patterns of earlier ethnic Turkish migrants in 1985 and the socioeconomic conditions of locations in the same year. To address this concern, we use the 1985 Census to examine the association between several socioeconomic outcomes and our instrument across 623 district centers, controlling for the 1985 values of the same set of variables as in equation (1). Appendix Table A3 shows no evidence of an association, across locations, between our instrument and the average number of births or labor market outcomes, including the unemployment rate, share in the labor force, share employed, and share employed in manufacturing. Taken together, these findings support the use of an instrument based on the historical settlement of ethnic Turkish refugees, which was largely determined by the government and remained in place until the forced migration of 1989.

A related concern is that earlier ethnic Turkish migrants may themselves have carried distinct gender norms, so that their settlement pattern could affect native outcomes directly. We assess this concern with descriptive evidence from the pre-shock 1985 census. Appendix Table A4 compares earlier ethnic Turkish migrants with natives at ages 18–59, using the same outcomes as Table 1. Appendix Table A5 reports the corresponding differences from individual-level regressions with district-center, age, and education fixed effects, alongside the identical specification for the 1989 refugees in the 1990 census.

Earlier ethnic Turkish women display stronger labor force attachment than native women (27.9% versus 14.7%) and share the textile-intensive employment profile of the 1989 arrivals. The differences are, however, much smaller than those associated with the 1989 refugees. The female labor force participation gap is 13 percentage points for earlier migrants, against 52 percentage points for the 1989 refugees; conditional on district-center, age, and education fixed effects, the gaps are 13 and 37 percentage points, respectively. The ordering of the three groups is consistent with their exposure to socialist Bulgaria: the earlier waves arrived primarily in 1950–51 and 1968–79, before or during the consolidation of Bulgaria’s socialist gender regime, whereas the 1989 arrivals were socialized under its mature form. The persistence of the earlier settlement pattern also underpins the relevance of the instrument. The 1989 refugees settled where established ethnic Turkish communities could absorb them—through family ties, community institutions, and the housing legacy of the state-led settlement programs.

These level differences do not pose a threat to our identification. Because the outcomes in equation (1) are changes from 1990 to 2000, any influence of the earlier stock on the level of local norms—realized over the decades before 1990—is absorbed in the baseline district environment. What the design requires is the absence of differential post-1990 trends associated with earlier-migrant settlement; the placebo tests below, including a direct test that regresses pre-shock changes on the instrument itself (Appendix Table A6), address precisely this margin.

The most important supporting evidence for the validity of our instrument comes from placebo

checks. The identifying assumption is that, in the absence of the refugee shock, the trends in native women’s outcomes in district centers with high and low values of the instrument would have been the same, conditional on province fixed effects and the covariates. Section 6.4 tests this assumption with a battery of placebo exercises based on pre-shock data.

6 Main Results

This section presents our estimation results on labor market, fertility, and schooling outcomes, the three margins introduced above. It also summarizes identification checks, including placebo tests of the main identification assumption, and explores the heterogeneity of estimated labor market impacts by native women’s education levels.

Before discussing the second-stage results, we first summarize the first-stage findings. Appendix Table A7 provides the first-stage results for labor market, fertility, and schooling outcomes. The first-stage results indicate a strong and positive relationship between the share of earlier ethnic Turkish migrants in 1985 and the share of 1989 ethnic Turkish refugee women in a given district center across all outcomes. This relationship also holds consistently across all sub-samples analyzed. The F-statistics, ranging from 60 to 115, exceed the thresholds recommended in the literature, reinforcing the strength of the instrument. These findings indicate that the 1989 ethnic Turkish refugees were significantly more likely to settle in districts where earlier waves of ethnic Turkish migrants had settled, which was facilitated by state-led policies.

6.1 Women’s Entry into Modern-Sector Employment

Table 2 presents the OLS and 2SLS estimates of the impacts of the 1989 refugee shock on native women’s and men’s labor market outcomes a decade after their arrival. Panels (A) and (B) summarize the results for the full sample of district centers, whereas Panels (C) and (D) focus only on urban district centers, defined as locations with a population above 20,000 by TurkStat. This restriction to urban district centers is crucial in our analysis of labor market outcomes because rural district centers are mostly agricultural. In addition, the female labor force participation rate is much higher in rural areas due to family farming. For instance, according to the 1989 Turkish Household Labor Force Survey, the female labor force participation rate was 55% in rural areas compared to only 18% in urban areas for the working-age population (15+).

Panel (A) reports results for native women and Panel (B) for native men, for the full sample. Both the OLS and 2SLS estimates indicate that a higher concentration of refugee women led to a significant improvement in the labor market outcomes of native women a decade later. In contrast, although the estimated 2SLS effects on native men are also positive, they are smaller and not statistically significant. Specifically, focusing on Panel (A), our 2SLS estimates show

that a one percentage point increase in the ratio of 1989 ethnic Turkish refugee women to native women in a given district brings about roughly a 0.6 percentage point increase in the employment rate of native women, a 0.7 percentage point increase in their labor force participation rate, and a 0.9 percentage point increase in the manufacturing employment rate of native women a decade later.¹⁷ The results from the sample of urban district centers presented in Panels (C) and (D) of Table 2 indicate that our findings are both quantitatively and statistically similar to those for the full sample.

In relative terms, the manufacturing effect is the most economically important result of our paper. We find that a one-percentage-point increase in the refugee-to-native ratio raises native women’s manufacturing employment by 0.9 percentage points, roughly a 23 percent increase over the 1990 baseline of 3.9 percent (16.9 percent employment times a 22.9 percent manufacturing share among the employed as summarized in Table 1). The treatment is highly skewed across district centers—the median center has zero exposure, and the 95 centers with positive exposure contain 62 percent of the 1990 population (Appendix Table A8)—so we also report effects per standard deviation of the treatment (0.91 percentage points): employment rises by 0.52 percentage points (3.1 percent of the 1990 baseline), labor force participation by 0.65 (3.3 percent), and manufacturing employment by 0.84 (21.4 percent). Appendix Table A9 collectively presents the per-percentage-point and per-standard-deviation effect sizes.¹⁸ The sectoral specificity is the distinctive feature of these magnitudes: the cultural barrier to entry was tightest precisely on the manufacturing margin.

The male manufacturing coefficient deserves discussion because it is not negligible in size. The 2SLS estimate for men is 0.51 in the full sample, against 0.92 for women, and the corresponding OLS estimate of 0.84 is significant at the 5 percent level. We therefore do not read it as a zero. The sectoral decomposition in Section 6.1.1 shows that the male coefficient comes from non-textile manufacturing and that it shrinks as the sample is restricted to comparable districts, to 0.32 in the urban sample and 0.14 in western Türkiye. Men show no response in textiles in any sample. Our interpretation therefore does not rest on the absence of a male response. It rests on the larger and more precisely estimated female response and on the gender-differenced

¹⁷Appendix Table A1 reports the corresponding results when individuals aged i) 18 to 49 and ii) 18 to 59 are considered, instead of the baseline group of 18 to 39 years, in constructing the district-center-level averages. The results with the alternative age restrictions reveal similar patterns but somewhat smaller coefficients—although the coefficients for women’s participation, employment, and employment in manufacturing remain statistically significant. The smaller coefficients are expected, as labor market outcomes beyond age 40 (particularly for women) may be less relevant due to the early retirement schemes available during this period, as discussed earlier.

¹⁸For comparison, [Miho et al. \(2024\)](#) report that a one-standard-deviation increase in the share of Protestant deportees raises labor force participation among working-age women by 0.8 percentage points, or 1 percent of the mean of 74 percent; our corresponding per-standard-deviation effect is 3.3 percent of the 1990 mean of 19.6 percent, about three times the relative magnitude. On fertility, they report a 0.9 percentage-point decline per standard deviation of exposure in the probability that women under 30 have children, 2 percent of the 41 percent mean; our per-standard-deviation effect on births per woman is 0.6 percent, smaller but of the same order of magnitude. [Jessen et al. \(2024\)](#) find precisely estimated zeros at the extensive margin for West German women and an intensive-margin increase of about 0.8 hours per week (2.3 percent of the pre-unification mean) per 1.05 percentage-point migrant inflow, or 0.14 hours among working mothers (a 0.16 percentage-point within-household shift) per standard deviation of the inflow; our effect operates on the extensive margin itself (0.52 percentage points, or 3.1 percent of the 1990 mean), and the census does not record hours. These comparisons are indicative rather than exact: exposure metrics differ across settings, and baseline participation differs (74 percent in the Soviet destinations against 19.6 percent here), so equal relative effects imply very different absolute scope.

estimates below: women’s manufacturing employment rose relative to men’s in the urban and western samples, and the textile component of this relative gain is significant in every sample. The placebo test in Section 6.4.1 shows a pre-period coefficient of the same size for men’s manufacturing employment, which points to a pre-existing trend rather than a response to the shock.

Table 3 presents a triple-difference specification that uses gender- and time-differenced dependent variables (native women minus native men) instead of the time-differenced measures used in Table 2. The findings in Table 3 for the full sample demonstrate significant gains in labor force participation and employment rates for native women compared to native men in the same district, a decade after the arrival of refugees in 1989. The 2SLS estimates suggest that a one-percentage-point increase in the refugee-to-native ratio increases women’s employment rate by 0.6 percentage points more than men’s and women’s labor force participation rate by 0.8 percentage points more than men’s. While the improvement in employment in manufacturing for native women relative to native men is also sizable, it is marginally statistically insignificant.

However, the improvement in women’s employment in manufacturing relative to men becomes statistically significant when we restrict the sample to urban district centers, where the manufacturing sector constitutes a more integral part of the overall economy. As shown in Panel (B) of Table 3, a one-percentage-point increase in the refugee-to-native ratio raises women’s employment in manufacturing by more than 0.4 percentage points and their labor force participation rate by 0.8 percentage points relative to native men. The increase in women’s overall employment relative to men is similar to the change in manufacturing employment but falls just short of statistical significance.

Next, we restrict the sample to regions where ethnic Turkish migrants were most heavily concentrated. Maintaining the restriction to urban areas, Panel (C) of Table 3 excludes eastern Türkiye (NUTS-1 regions 10 to 12), where only a small share of refugees settled, while Panel (D) further restricts the geographical scope to the western half of the country (NUTS-1 regions 1 to 6). In both Panels (C) and (D), the restriction to urban district centers is retained for the reasons discussed at the beginning of this section. These restrictions allow us to narrow the analysis to regions with a higher concentration of the 1989 ethnic Turkish refugees and to areas where manufacturing plays a more significant role in the economy.

Our findings on the impact on manufacturing employment become even stronger when we make these regional restrictions. The 2SLS estimates show that a one-percentage-point increase in the refugee-to-native ratio increases native women’s employment in manufacturing by 0.51 percentage points more than men’s in Panel (C) and by 0.64 percentage points more than men’s in Panel (D), the most restricted sample. Additionally, the 2SLS estimates for labor force participation and employment in the regionally restricted samples (Panels (C) and (D)) are similar to those for the total urban district center sample in Panel (B) both in magnitude and statistical significance.

Finally, we assess whether these gender-relative findings are sensitive to the choice of the outcome measure. We use within-district gender differences as the primary gender-relative specification because they are less sensitive than ratios to small denominators and to baseline differences in gender gaps across district centers. As a robustness check, Appendix Table A10 reports estimates in which the dependent variable is the change between 1990 and 2000 in the ratio of the female share to the male share of natives aged 18–39 who are employed, in the labor force, or employed in manufacturing. The results confirm the gender-differenced findings in Table 3: the female-to-male employment and labor force participation ratios rise significantly with refugee exposure across samples and specifications, and the manufacturing ratio also rises, although less precisely.¹⁹

We next examine heterogeneity by predicted exposure. This exercise is descriptive, and we do not model a critical threshold. It serves two purposes. First, the treatment is highly skewed across district centers (Appendix Table A8), with the median center at zero exposure, so contrasting high-predicted-exposure centers with low- and zero-exposure centers concentrates the identifying variation. Second, if the effect per unit of exposure rises with the dose, estimated effects should be larger where predicted exposure is higher; one plausible channel is that diffusion operates in low- and high-exposure locations alike but proceeds faster where refugee women become more visible in local society. We therefore categorize district centers into low, medium, and high exposure groups and compare high- versus low-exposure locations. We group district centers by their *predicted* exposure to the shock, that is, by the value of the instrument. The instrument is the exogenous predictor of the 1989 inflow in our first stage; grouping on the realized refugee-to-native ratio would instead select the sample on the endogenous treatment.²⁰ Appendix Table A11 replicates Table 3 using this grouping. Panel (A) excludes district centers with instrument values between 0 and 0.02, Panel (B) excludes those with values between 0 and 0.04, and Panel (C) excludes those with values between 0 and 0.06. Approximately 62% of the district centers have an instrument value of zero, and these are classified as low-exposure district centers. The number of district centers in the high-exposure group is 52 in Panel (A), 21 in Panel (B), and 14 in Panel (C). The estimates in Appendix Table A11 show larger and more precisely estimated effects of the refugee influx on all three labor market outcomes, a pattern consistent with a convex dose response. Additionally, while the coefficient for manufacturing employment is marginally statistically insignificant for the full sample in Table 3, it becomes statistically significant at the 10% level in Panel (A) and at the 5% level in Panels (B) and (C).

¹⁹In the full sample, the manufacturing regressions in Appendix Table A10 exclude 59 district centers in which male manufacturing employment is zero in 1990 or 2000, illustrating the small-denominator problem that motivates our preference for gender differences. The ratio outcomes are also on a different scale than the difference outcomes, so the coefficients in Appendix Table A10 are not directly comparable to those in Table 3.

²⁰When we group district centers by realized 1990 exposure, the 2SLS estimates for employment and labor force participation at the 0.02 cutoff are as large as or larger than the full-sample estimates in Table 3 and remain statistically significant, while the manufacturing coefficient is positive but imprecise. Approximately 85% of district centers have zero realized exposure, compared with 62% for the instrument, so few district centers remain in the high-exposure group at each cutoff. The full set of results is available upon request.

of Appendix Table A11.

Overall, the findings in Table 2, Table 3, and Appendix Table A11 show that a decade after the refugee shock, exposure to refugee women led to greater labor market participation and higher employment rates among native Turkish women, concentrated in manufacturing and most pronounced in western Türkiye. The gender contrast is informative for the mechanism: native men’s participation and employment were already high and close to refugee levels, whereas native women’s participation was exceptionally low and manufacturing employment rare, so exposure to refugee women operated on the margin where social barriers were most likely binding. Consistent with this, the estimated effects are substantially larger for women, and the gender-differenced estimates show that women’s outcomes improved relative to men’s in more exposed districts.

6.1.1 Effects by Sector of Employment

Table 4 decomposes the gender-differenced employment response of Table 3 into its sectoral components, with manufacturing split into textiles and other manufacturing. Because sector shares sum to the employment share, the sector coefficients sum to the employment coefficient within each column. Textiles account for the entire relative employment gain: in the full sample, the differenced textile coefficient is 0.658 against a total employment effect of 0.656, and it rises to 0.870 in western urban districts, remaining significant at the 5% level in every sample. Non-textile manufacturing is, if anything, negative. Appendix Table A12 reports all nine census sectors, and Appendix Tables A13 and A14 report the level estimates for women and for men across the same four samples, including the aggregate employment and labor force participation rates of Table 2 alongside the sectoral decomposition; their first columns report the full-sample estimates.²¹

The level decompositions establish two facts behind the differenced estimates. For women, the pattern is essentially unchanged across the four samples (Appendix Table A13): the manufacturing coefficient ranges from 0.641 to 0.719 and the textile coefficient from 0.517 to 0.606 in the urban and western samples, all significant at the 1% level, while agriculture and services remain statistical zeros throughout. For men, the full-sample reallocation away from services does not survive restriction to comparable districts (Appendix Table A14): the services coefficient shrinks from -0.685 to -0.433 and -0.284 in the urban samples and turns positive (0.222) in the westernmost sample. The other-manufacturing coefficient for men remains positive and similar in size across samples (0.34 to 0.43) but is imprecise, and no male sectoral coefficient is significant at the 5% level in any restricted sample. Men show no response in textiles in any sample. The differenced textile estimates therefore essentially isolate women’s entry, and the differenced other-manufacturing coefficients are negative because men, not women, account for

²¹ Among the sectors omitted from Table 4, the one precisely estimated set of coefficients is a negative differenced infrastructure (electricity, gas, and water) response in the restricted samples (Appendix Table A12), the mirror image of a small male-directed utilities demand effect of the population inflow; it works against, rather than inflates, the positive differenced estimates.

the growth in that sub-sector. Consistent with this, the marginal differenced services coefficient in the full sample (0.576) disappears in the restricted samples (0.366, 0.279, -0.246).

The restricted samples also show an off-farm margin. As the sample is homogenized to comparable urban districts (columns 2–4 of Table 4), relative female agricultural employment turns negative and marginally significant (-0.305 and -0.380 in the two NUTS1-restricted samples), precisely where the textile coefficient peaks. In levels, neither gender’s agricultural coefficient is individually significant in the restricted samples (Appendix Tables A13–A14); the differenced decline combines women’s small negative and men’s small positive movements. We therefore read the western pattern as a relative movement of women out of agriculture and into textile manufacturing compared with men, an off-farm modernization margin rather than aggregate structural transformation. Services and the remaining sectors show no robust differenced response.

6.1.2 Effects by Marital Status

Women’s labor supply decisions in a conservative setting are likely to be influenced by husbands, fathers, employers, and broader community norms. To assess whether the response extends into households, we estimate the labor market effects separately by marital status, replicating the specification of Table 2 on district-level panels constructed for currently married, never-married, and ever-married native women aged 18–39. Appendix Table A15 reports OLS and 2SLS estimates for the full and urban samples; the first-stage robust F statistic exceeds 100 in every full-sample panel and 60 in every urban panel.

We find that married women respond on every margin. In the full sample, a one-percentage-point increase in the refugee-to-native ratio raises married native women’s employment by 0.63 percentage points, labor force participation by 0.65, and manufacturing employment by 0.70; the urban estimates are 0.69, 0.65, and 0.63. The relaxation of cultural constraints therefore extended into household decision-making and was not limited to unmarried women.

Never-married women display a different margin. Their extensive-margin estimates are imprecise—never-married cells are small in many district centers, and standard errors are roughly twice those for married women—while their sectoral response is the largest we estimate: manufacturing employment rises by 1.66 percentage points in the full sample and 1.33 in the urban sample, of which textiles account for 1.31 and 0.98. For single women, whose participation was less constrained to begin with, the shock operated on where they worked; for married women, it operated on whether they worked. Estimates for ever-married women are nearly identical to those for currently married women. Because marital status is measured contemporaneously in each census and may itself respond to the shock, we interpret the split as heterogeneity rather than as a causal decomposition.²²

²²We confine the marital split to labor market outcomes. Non-marital fertility is negligible in Türkiye, so the fertility results already pertain to ever-married women; schooling decisions are made before marriage, under parental rather than spousal influence,

6.1.3 Why Manufacturing Matters

Manufacturing is the most important labor-market margin in our analysis for two reasons. First, as a tradable sector, it is less likely than retail or personal services to expand simply because the refugee inflow increased local consumer demand. An increase in manufacturing employment is therefore harder to attribute to a standard local demand channel. Second, manufacturing jobs in this context typically required exactly the kind of mid-level schooling in which refugee women were relatively abundant and native women were underrepresented. The sector therefore provides a natural test of whether the cultural constraints are strongest where women had the skills to respond but may have lacked social permission, information, or role models. The heterogeneity analysis of Table 10, discussed below, confirms this prediction: the employment response concentrates among native women with middle- or high-school degrees, whose education most closely resembled refugee women’s education levels.

6.1.4 Demand-Side Explanations

An alternative explanation for our findings on women’s improved employment outcomes is a potential demand-side effect. The refugee shock increases local product demand—most naturally for services—and the resulting job creation could favor women. However, the tradability of manufacturing, discussed above, already weakens this channel for the sector in which the female response concentrates. Moreover, native men’s aggregate labor market outcomes are unchanged: their employment and labor force participation show no response to the refugee shock (Table 2), and their sectoral coefficients are imprecise, with no response in textiles in any sample (Appendix Table A14). Men’s employment therefore provides no robust evidence of a local demand effect; the one precise exception, the small utilities (infrastructure) response noted with the decomposition, is male-directed and enters the differenced estimates negatively. The gender-differenced estimates additionally absorb any demand component common to men and women, and the remaining female-specific gain is concentrated in textiles, the sector in which nearly half of employed refugee women worked (Table 1).

A second alternative is a shift in labor demand that favored native women over native men in the districts where the refugees settled. The refugees brought a different set of skills and were concentrated in manufacturing (Table 1), so they could have raised productivity more in the branches that employ more women, such as textiles: among natives, 30% of textile workers were female in 1990 compared to 8% in other manufacturing sectors.²³

We therefore investigate whether the influx of refugee women in 1989 boosted textile production more than other sectors by separately estimating the impact of the refugee shock on total employment (men and women) in textiles and in other manufacturing. Table 5 presents the

and married teenagers are a small and highly selected group.

²³Among manufacturing workers in 1990, the fraction working in textiles was slightly higher for 1989 refugees than for natives: 31.2% versus 28.7% for men and 71.1% versus 66.0% for women.

impact of the concentration of 1989 ethnic Turkish refugees on total employment in aggregate manufacturing, textiles, and manufacturing other than textiles. The total-employment coefficients for textiles and other manufacturing are both positive. The textile coefficient is imprecise; relative to the sector’s smaller base, it is at least as large as the other-manufacturing coefficient. What distinguishes the two sectors is who fills the jobs. The gender decompositions in Table 4 and Appendix Tables A13–A14 show this. Women’s gains are concentrated in textiles, where men show no response in any sample. Growth in other manufacturing comes mainly from men; their coefficient is positive and stable in size across samples but imprecisely estimated, and significant only at the 10 percent level in the full sample. A textile-specific demand or productivity shock would have drawn men as well as women into the sector; native men were 70 percent of native textile workers in 1990. The absence of any male response in textiles therefore indicates that a differential increase in the demand for female labor in textiles is unlikely to explain our results. This pattern is consistent with the interpretation that cultural relaxation, rather than a sector-specific productivity shock, underlies the employment gains for native women.

Another potential explanation for women’s increased employment and labor force participation is a change on the employer side. Two changes should be distinguished. The first is a shift in men’s normative attitudes toward women’s work. Since most employers in our context are men, such a shift would appear in men’s stated attitudes. Our analysis of the World Values Survey (Section 7) shows no improvement in men’s views on female employment, unlike the case for women. A broad change in what men think women should do is therefore unlikely to explain our results, although the survey covers men in general rather than employers specifically. The second change is that employers may have updated their beliefs about women as workers after observing refugee women’s performance in the workplace. The survey does not measure such beliefs. If employers did learn in this way, the cause was still the refugee women’s example. We therefore count such learning as part of the mechanism we study, even though it works through employers’ hiring decisions rather than through women’s own choices. What this subsection rules out is different: an increase in the demand for female labor that would have occurred even without the refugees’ example, such as a local product-demand boom or a textile-specific productivity shock.

Finally, refugee women providing childcare services could generate employment opportunities for native women ([Cortés and Tessada, 2011](#)); however, this is improbable in our context: refugee women worked predominantly in manufacturing (Table 1) and were, on average, much more educated than native women. When mothers entered the labor force during the 1990s, grandparents rather than paid caregivers typically provided childcare, and grandmother proximity still significantly influences women’s labor force participation in Türkiye today ([Akyol and Yılmaz, 2024](#)). Qualitative studies also show that this family-based care system, rooted in strong kinship ties, has historically filled the gap left by limited public childcare provision in Türkiye ([Can, 2019](#); [Akkan et al., 2023](#)). Taken together, the evidence in this subsection makes

a local product-demand boom and a textile-specific productivity shock unlikely as standalone explanations, and it is consistent with the interpretation that the employment gains for native women reflect a relaxation of cultural barriers to modern-sector work rather than a shift in labor demand.

6.2 Fertility Decline

Fertility decline is the second of the three central margins we study in our paper. The arrival of refugee women could have lowered the fertility of native women through two main channels. First, the increase in native women’s labor market attachment and employment following the refugee influx raised the opportunity cost of children. As employment became a viable alternative, women may have delayed or reduced childbearing in favor of market work. Second, refugee women themselves had lower fertility than native women (Table 1). Exposure to their family behavior may have shifted local expectations about family size and led native women to revise their own fertility decisions. Through either channel, we would expect fertility to fall in districts with greater refugee exposure. To investigate this possibility, we estimate the effects on the fertility behavior of native women, focusing on the total number of births a woman has had by the time of the census, for the reasons given in Section 4.

Table 6 presents estimates of the fertility effects for 18–39-year-old native women, where the dependent variable is the change in the number of live births per woman between 1990 and 2000. Results are reported for the full sample and for two geographic subsamples that exclude eastern Türkiye ($\text{NUTS1} \leq 9$) and restrict to the western half of the country ($\text{NUTS1} \leq 6$), without the urban restriction of the labor market tables.²⁴ The estimates indicate a statistically significant reduction in fertility a decade after the refugee shock. In particular, the 2SLS estimate in column (2) for the full sample shows that a one-percentage-point increase in the 1990 refugee-to-native ratio causes a 0.011 decrease in the number of live births per woman ten years later (the ratio enters the regressions as a fraction, so the printed coefficient, -1.138 , is the effect of a one-unit increase in the ratio; dividing by 100 gives the effect per percentage point). The effect is modest in the average district center but not in exposed ones: at the 90th percentile of exposure among the 95 exposed district centers (3.2 percentage points, Appendix Table A8), it amounts to 0.036 fewer births per woman, about 2 percent of the 1990 mean.

6.3 Schooling and Human-Capital Accumulation

The third margin we study is children’s middle-school continuation, with particular attention to girls. Refugee children of both genders had far more schooling than native children, so exposure could raise parental aspirations for children generally. Exposure to refugee women in market

²⁴The urban restriction was needed for the labor market outcomes because rural district centers are agricultural and family farming inflates measured female participation. Neither concern applies to the number of births, so we use all district centers, as we do for schooling below.

employment may have added a daughter-specific component, by raising the perceived returns to girls' schooling and the local feasibility of women's subsequent labor market participation. Under either channel, we would expect schooling to rise in districts with greater refugee exposure. To assess the impacts on native women's schooling outcomes, we define the dependent variable as the change between 1990 and 2000 in the share of native women in each district who are: a) primary school graduates, b) middle school graduates, c) high school graduates, and d) college graduates. Table 7 presents the OLS and 2SLS results for these schooling levels.

We find evidence that the refugee influx increased the share of native women with middle school degrees. Middle school was the margin at which schooling decisions were actually made in this period: under the pre-1997 system only the five primary grades were compulsory, middle school was the first optional level, and roughly half of students did not continue into it (Kirdar et al., 2016). A one-percentage-point increase in the refugee-native ratio raises the share of middle school graduates by 0.48 percentage points (equivalent to a 3.5% increase given the 1990 mean of 13.7 percent, reported in Appendix Table A2). Moreover, this increase does not come at the expense of the shares of higher schooling levels. The 2SLS coefficients for high school and college degrees are close to zero. The increase in middle school completion is consistent with exposure to a more educated and economically active group raising the perceived returns to schooling. Viewed through the lens of unified growth theory, this result connects the refugee shock directly to human-capital accumulation: the same districts in which women entered modern-sector employment are the districts in which investment in children's middle schooling rose, suggesting that the cultural shock affected both the supply of educated workers and the barriers to their employment.

We also examine schooling outcomes for native boys over the same age ranges (Appendix Table A16). In the 2SLS estimates, middle school completion rises by 0.81 percentage points, while the share with primary school as the highest level of attainment falls by 0.84 percentage points. The near one-for-one offset indicates greater continuation beyond primary school rather than a reduction in overall schooling. High school and college completion show no significant response. Relative to 1990 baseline levels, the proportional effects are similar for boys and girls.²⁵ This symmetry is what the household-level channel described above predicts: the refugee-native schooling gap was largest at the middle school level for both genders, and native parents who observed it had reason to revise their views for sons and daughters alike. The similar relative magnitudes indicate that any daughter-specific component was secondary for completion at this margin. The gender-specific evidence for the cultural channel therefore lies in the labor market, fertility, and attitude results rather than in an asymmetry in schooling.

²⁵ Boys' middle-school coefficient of 0.807 on a 19.2 percent 1990 base (Appendix Table A16) is a 4.2 percent effect per percentage point of exposure; girls' 0.484 on 13.7 percent (Appendix Table A2) is 3.5 percent, with overlapping confidence intervals. Our outcome cohorts made the continuation decision before the 1997 extension of compulsory schooling, and the national reform is absorbed by the year structure of the design in any case.

6.4 Identification Checks

The subsections above addressed the interpretation of the estimates—which mechanisms they reflect. This subsection turns to causal identification and the robustness of the empirical design.

6.4.1 Placebo Tests of the Main Identification Assumption

This subsection tests the identification assumption stated in Section 5 with several placebo exercises. Using micro-level data from the 1985 and 1990 Turkish censuses and treating both as pre-periods, we redefine the dependent variable as the change in outcomes between 1985 and 1990 rather than between 1990 and 2000.²⁶ The definition of the key independent variable, the ratio of 1989 ethnic Turkish refugee women to native women, remains unchanged, and the specification follows the baseline model. In the absence of pre-trends correlated with the 1989 refugee shock, these placebo experiments should yield null effects.

Table 8 performs a placebo test for the labor market outcomes analyzed in Table 2, for both the full and urban samples. For Panel A (B), the dependent variable measures the change from 1985 to 1990 in the share of native Turkish women (men) in each district who are a) employed, b) in the labor force, and c) employed in manufacturing. The analysis is similarly conducted for the urban sample in the bottom two panels. None of the 2SLS estimates is statistically significant. For women, the placebo coefficients are much smaller than the corresponding estimates in Table 2; the largest is the full-sample manufacturing coefficient (0.24, against 0.92 in Table 2), and it disappears in the urban sample (0.02). For men, the full-sample manufacturing placebo coefficient (0.53) is as large as the Table 2 estimate (0.51). This indicates that the male manufacturing coefficient reflects a pre-existing trend in the districts where refugees settled rather than the refugee shock. Because the trend appears for both genders, it is removed in the gender-differenced specification, and the placebo for that specification below is negative.

The placebo triple-difference analysis presented in Appendix Table C1 further supports these null findings. Similar to previous placebo checks, in the placebo exercise summarized in Appendix Table C1, we define the dependent variable as the change between 1985 and 1990 in the difference between the share of native women and the share of native men who are: a) employed, b) in the labor force, and c) employed in manufacturing. The 2SLS estimates are all insignificant, and the manufacturing coefficient is negative (-0.38), so the level pre-trend noted above does not carry into the differenced specification. These results confirm that our findings are not driven by differential pre-trends in outcomes.

In addition, we perform several placebo tests for fertility outcomes. In the first placebo experiment, we focus on 40- to 59-year-old native women as the treated group. We do not

²⁶The 1990 Census comes one year after the refugee shock, which occurred primarily between May 26 and August 21, 1989; we do not expect shifts in societal norms to affect outcomes within less than a single year. Moreover, since we have no data prior to 1985 and social norms are slow-moving, treating the 1985–1990 difference as a placebo is a demanding version of the test: if the shock had already affected outcomes by 1990, the tests would fail.

expect any fertility effect of refugee exposure on this age group because most native women in this age range are expected to have completed their fertility. The 2SLS coefficients presented in the top panel of Appendix Table C2 indicate no reduction in fertility. In fact, compared to Table 6, the coefficients switch signs and become insignificant. In Panel (B) of Appendix Table C2, we conducted another robustness check for fertility using data from the 1985 and 1990 Censuses. In this placebo analysis, the dependent variable is defined as the change in the number of live births per woman from 1985 to 1990 among 18- to 39-year-old native women. The point estimates are uniformly positive and statistically insignificant at the 5 percent level; the 2SLS estimate in the western sample ($\text{NUTS1} \leq 6$) is marginally significant at the 10 percent level. If anything, this mild positive pre-period association implies that any differential pre-existing trend would bias our 1990–2000 fertility estimates toward zero, so the negative effects in Table 6 are, if anything, conservative.

Finally, Appendix Table C3 presents the results of placebo tests for native women’s schooling outcomes using data from the 1985 and 1990 censuses. The 2SLS estimates show no statistically significant impact on any schooling outcome. In particular, the coefficients for middle school degrees—for which we find a positive effect in Table 7—are much smaller than those reported in Table 7.

As a more direct test of the exclusion restriction, we also regress the 1985–1990 changes in each outcome on the instrument itself rather than on the 1989 exposure measure. Appendix Table A6 reports these reduced-form estimates for all eight outcome families: the three gender-differenced labor market outcomes, fertility, and the four schooling levels. The estimates are uniformly small relative to the corresponding treatment effects, and none is statistically significant at the 10 percent level. The settlement pattern of earlier ethnic Turkish migrants therefore does not predict pre-shock trends in any outcome family.

Taken together, the placebo exercises in Table 8 and Appendix Tables A6 and C1–C3 provide no evidence of pre-existing trends in the outcomes that carry our conclusions: the gender-differenced labor market outcomes, fertility, and schooling. The one pre-trend we detect, in manufacturing employment in levels, is common to men and women and does not enter the gender-differenced estimates. Across these specifications, none of the 2SLS or reduced-form estimates is statistically significant at the 5 percent level, supporting the identifying assumption that earlier settlement patterns were not correlated with differential outcome trends prior to the 1989 influx.

6.4.2 Critical Role of Identification via Variation within Provinces

The placebo checks in the previous subsection confirm that the key identification assumption holds in our specification with province fixed effects. To further assess the importance of accounting for regional trends, we next illustrate what would happen if these fixed effects were

omitted. Careful consideration of potential time trends in the outcome variables is crucial in this setting, as regional trends may differ markedly for outcomes with national time trends.²⁷ Therefore, our specification includes province fixed effects, and the identifying variation comes from comparing districts within the same province, which share similar socioeconomic conditions.

Appendix Table C4 reports the results of the placebo tests from Table 8 without province fixed effects. We also conduct similar analyses for the placebo experiments on gendered labor market outcomes, as well as schooling and fertility, as summarized in Appendix Tables C5–C7. These tables show that the key identification assumption fails in several cases when province fixed effects are omitted. Comparing the placebo tests with and without province dummies underscores the importance of accounting for differential time trends in outcomes across provinces by including province dummies in our analysis.

Within-province variation in exposure is also ample, as Appendix Figure A1 (Panel B) shows. Tekirdağ province in northwestern Türkiye illustrates this variation. Across its eight district centers, the refugee-to-native ratio ranges from 0.9 to 10.8 percent. It is 10 percent or higher in two district centers, 9.0 percent in one, between 1 and 4 percent in four, and 0.9 percent in the remaining one. The 1985 instrument also varies widely, from 0.7 to 17.5 percent. The two measures agree on which three district centers are the most exposed, and they rank the remaining five identically.

6.4.3 Internal Migration

Our identification strategy is based on comparing district-center-level native populations in 1990 and 2000. If the 2000 populations responded endogenously to the refugee shock through changes in internal migration, the populations we compare might differ in nontrivial ways. A potential concern is that the 1989 refugee influx might have discouraged other potential migrants from relocating. Because fewer competing workers would then have arrived, native women in these districts could show higher overall employment and greater participation in manufacturing jobs ten years later. This concern is particularly relevant in our setting, where internal migration levels are high: in 1990, 19.9% of 18–39-year-olds living in the district centers in our sample had not resided in the same district center five years earlier.

We therefore investigate whether the arrival of the refugees in 1989 influenced the migration decisions of natives in other areas. This analysis defines movers as those who did not reside in the same district center five years ago. These movers encompass both internal and international migrants, although international migration was relatively limited during this period. Table 9 shows the effect of the 1989 refugee shock on the change in the fraction of movers from 1990

²⁷For example, fertility shows a national downward trend, but the decline is steeper in eastern Türkiye, where initial levels are higher. From 1990 to 2000, the number of live births per woman fell by 0.25 in the district centers of NUTS-1 region 2 (northwestern Türkiye, which hosts many ethnic Turkish migrants) but by more than 0.5 in each of NUTS-1 regions 10–12 (eastern Türkiye). Similar differences exist for female labor force participation: between 1990 and 2000, the rate rose by 11.5 percentage points (53%) in the district centers of western Türkiye (NUTS-1 regions 1–4) compared with 6.3 percentage points (29%) in northern Türkiye (NUTS-1 regions 8–9).

to 2000 in a given district, using the same specification as in the previous tables. The results indicate a positive and marginally significant (at the 10 percent level) 2SLS coefficient for the full sample. For the urban sample and for the sample restricted to the western half of the country (where the majority of the refugees settled), the point estimates cease to be economically and statistically significant. We thus find no evidence that the refugee influx reduced the arrival of other migrants. If anything, the full-sample coefficient points to more rather than fewer movers, the opposite of the diversion concern.

The direction of any remaining bias also works against our findings. Internal migrants are, on average, less-skilled workers who substitute more easily for young native women than for prime-aged native men; consistent with this, [Aksu et al. \(2022\)](#) find that Syrian refugees in Türkiye reduced native employment more among women than among men. If the refugee inflow had diverted internal migrants away from exposed districts, weaker competition could have raised native women’s employment there. Since exposed districts received, if anything, more movers, any competition effect would depress rather than raise native women’s employment. A competition channel would also raise women’s employment across sectors rather than concentrate it in manufacturing, the pattern we document. Internal migration is therefore unlikely to threaten the causal interpretation of our results.

As a further check, Appendix Table C8 replicates Table 3 controlling for the change in the share of movers between 1990 and 2000. We note that this control is measured after the refugee shock and may itself respond to it, so Table 3 remains our preferred specification. The estimates for employment and labor force participation are as large as or larger than the baseline estimates and remain statistically significant, and the manufacturing estimates in the regionally restricted samples are essentially unchanged.

6.4.4 Comparison Group, Overlap, and Binary Treatment

Our design has a single treatment date and a single long difference, so the staggered-adoption concerns of the recent difference-in-differences literature do not arise. For a continuous dose, comparisons across positive exposure levels require stronger assumptions than comparisons with unexposed locations ([Callaway et al., 2024](#)). Three features of our setting are protective. First, 85% of district centers have zero realized exposure, so the comparison group consists overwhelmingly of true zeros and the identifying variation is dominated by the exposed-versus-unexposed contrast. Second, Appendix Table A11 excludes district centers in the intermediate range of predicted exposure and contrasts high-predicted-exposure locations with unexposed ones, which is the clean dose comparison recommended by this literature. Third, our headline estimates are 2SLS. Under instrument validity and monotonicity, 2SLS with a continuous endogenous dose identifies a positively weighted average of causal responses ([Angrist and Imbens, 1995](#); [Angrist et al., 2000](#)). Treatment-effect heterogeneity therefore affects the interpretation of this weighted

average rather than its validity.

We probe the comparison group directly with two exercises, reported in Appendix Tables C9 (labor market and fertility) and C10 (schooling). The first restricts the sample to provinces with strictly positive 1989 refugee settlement, retaining zero-exposure district centers within them because the continuous-treatment literature identifies unexposed locations as the cleanest controls; the restriction keeps 370 of the 623 district centers. The second replaces the continuous ratio with binary treatments: an indicator for any 1989 exposure, instrumented with an indicator for any 1985 earlier-migrant presence, and a high-exposure indicator for exposure above the median among positive-exposure centers, instrumented analogously. The restricted comparison group reproduces the baseline results. The 2SLS coefficients are 0.632 for employment, 0.645 for labor force participation, and -1.118 for fertility, all significant at the 5% level. The any-exposure indicator has the expected sign for the labor outcomes but is imprecise by construction, since most district centers have zero exposure and the binary first stage is weak ($F = 7.6$ for the labor outcomes). The high-exposure indicator has a stronger first stage and preserves the results, with coefficients of 0.165 for employment and 0.124 for participation, both significant at the 5% level, even though all dose variation above the threshold is discarded. Schooling tracks the baseline level by level: middle school retains a stable point estimate in the restricted sample (0.381, against 0.484 in the full sample), and no exercise produces significance where the baseline has none.

6.5 Robustness

6.5.1 Robustness to the Definition of Natives

As noted in Section 4, the census defines natives by birthplace, so Turkish-born descendants of earlier ethnic Turkish migrants are classified as natives. The census records neither parental birthplace nor ethnicity, so descendants cannot be identified directly. We therefore re-estimate the labor market specifications excluding every member of a household that contains a Bulgarian-born individual—whether a 1989 refugee or an earlier ethnic Turkish migrant.²⁸

Appendix Table A17 compares the baseline Table 2 estimates for native women with the family-exclusion estimates in the full and urban samples. Every conclusion survives, and all twelve coefficients move upward: full-sample 2SLS employment rises from 0.574 to 0.675, labor force participation from 0.713 to 0.817, and manufacturing employment from 0.922 to 0.953, with essentially unchanged standard errors. Textiles continue to account for the bulk of the manufacturing response, and men’s estimates are unchanged. Panel C repeats the exercise for fertility using the specification of Table 6: all six coefficients strengthen in magnitude, and the

²⁸Household linkage is constructed within identifiable households (enumeration cells of at most 30 people, which cover 99 percent of individuals and whose implied sizes track the census roster count with a correlation of 0.84); records without valid household identifiers retain the individual-level exclusion. The additional exclusion removes 1.15 percent of the 1990 population and 0.51 percent of the 2000 population beyond the Bulgarian-born themselves.

estimates in the two western subsamples become significant at the 5 percent level. The direction mirrors the attenuation logic explained below: native women in Bulgarian-linked households were already closer to the relaxed-norm equilibrium, including its lower fertility. Appendix Table A18 repeats the exercise for the four schooling outcomes of Table 7: the middle-school effect survives with nearly identical magnitude, and the remaining null results are unchanged.

The direction of the movement is consistent with within-household transmission, whose premise can be documented directly. Turkish-born women aged 18–39 who live with a Bulgarian-born family member are employed at 25.9 percent in 1990, against 16.8 percent for other native women; conditional on district-center and single-year-of-age fixed effects, the gap is 7.3 percentage points, and it already exists in 1985. Whether this elevation reflects transmission from Bulgarian-born family members or the selection of less constrained women into mixed households, these women were partway to the relaxed-norm equilibrium before the shock and had little room to respond, so their inclusion among natives attenuates the estimates; the baseline results are, if anything, conservative.

Descendants who no longer co-reside with a Bulgarian-born family member remain in the native sample, and three complementary arguments bound this residual channel. First, the placebo in Appendix Table A6 shows that earlier-migrant settlement does not predict 1985–1990 changes in any outcome family, which constrains the magnitude of any vertical-transmission channel operating through earlier cohorts. Second, Appendix Tables A4–A5 show that the earlier-migrant cohorts and the 1989 refugees were generationally different, so vertical transmission from earlier cohorts cannot account for the 1990–2000 changes. Third, the substantive interpretation—cultural relaxation in receiving communities—does not require pure horizontal transmission.

6.5.2 Robustness to Alternative Standard-Error Structures

Our main tables report heteroskedasticity-robust standard errors, which Section 5 motivates: the regressions are long differences with one observation per district center, so there is no within-district dimension to cluster on. Exposure is nonetheless spatially concentrated, and the errors of neighboring district centers may be correlated. We therefore re-estimate the main results under two more demanding error structures: standard errors clustered at the level of the 67 provinces of 1985, and Conley spatial HAC standard errors with a Bartlett kernel at 100 and 150 km distance cutoffs, chosen so that the shorter cutoff spans the treated Thrace–Marmara cluster and the longer connects essentially all neighboring provinces. Online Appendix Tables B1–B8 report the complete exercise: the outcomes of Tables 2, 3, 6, and 7 re-estimated under province-level clustering (Tables B1–B4) and under the Conley correction at both cutoffs (Tables B5–B8).

The main results are robust to these alternative inference procedures. The gender-differenced participation effect is significant at the 1% level in every sample under every error structure. The level effect on women’s manufacturing employment is significant at the 5% level in both

samples under both error structures, and the gender-differenced manufacturing effect keeps its baseline pattern: significant at the 5% level or better in the western sample, at the 10% level or just short of it in the other two urban samples, and insignificant in the full sample. The fertility effect strengthens under the spatial correction, where it is significant at the 5% level or better in all three samples and reaches the 1% level at the wider cutoff; under province clustering it remains significant at the 5% level in the full and NUTS1 ≤ 9 samples and at the 10% level in the western sample. The middle school effect retains its baseline significance at the 10% level. The weakest result is the level of women’s aggregate employment in the full sample, which is significant at the 10% level at the 150 km cutoff and just short of it under province clustering and the 100 km cutoff, while remaining significant at the 5% level in the urban sample and in the gender-differenced specification.

6.6 Heterogeneity by Schooling Level

In this subsection, we examine the impact of the arrival of refugee women in 1989 on native women’s labor market outcomes separately for three educational groups: i) primary school degree or lower education, ii) middle school or high school degree, and iii) college degree. Educational attainment figures in Table 1 indicate that while almost 70 percent of native women have a primary school degree or lower, only 8 percent of refugee women do. The large majority of refugee women belong to the second group, compared with about a quarter of native women. Finally, the share of college graduates is more comparable across refugee women (7.3%) and native women (6.1%).

Table 10 replicates the main results of the 1989 refugee shock on the labor market outcomes for native women by education level.²⁹ We find that the estimated effects are considerably more pronounced for native women with middle school or high school degrees. This is the education group to which most refugee women also belong. Therefore, the estimation results are highly consistent with the interpretation that cultural relaxation operated most strongly where native women could closely associate with refugee neighbors and friends who shared similar educational backgrounds. For native women who are college graduates, the results are more mixed. While the impact on employment is large and positive, it is not statistically significant at conventional levels. Similarly, there is no evidence of an effect on labor market participation of college-educated women, which is expected given that this group already has a high participation rate (Tunali et al., 2021). However, we also observe a significant and positive impact on employment in manufacturing for this group, suggesting that the visible presence of refugee women in the male-dominated manufacturing sector relaxed entry barriers even for native women at higher education levels.

In contrast, we find no evidence suggesting any labor market impacts among native women

²⁹Here, we provide the results based on the urban sample because when we divide the sample by educational attainment, few observations remain for some education groups (particularly for college graduates) in small district centers.

with primary or lower levels of education. This group likely has fewer role models to interact with and lacks the skills needed for manufacturing employment, both of which limit the scope for cultural relaxation to translate into labor market entry. Taken together, the heterogeneity results in Table 10 demonstrate that the arrival of refugee women, who are strongly attached to the labor market and predominantly employed in male-dominated manufacturing, is associated with increased workforce participation among similarly educated native women, particularly in manufacturing.

7 Supporting Evidence on Cultural Relaxation

The evidence presented in Section 6 establishes that exposure to refugee women moved three margins central to structural and demographic transition: women’s entry into modern-sector employment, fertility decline, and middle-school completion. The marital-status results in Section 6.1 indicate that the relaxation of cultural constraints operated within households: married women’s employment responded as strongly as the average. This section provides supporting evidence on the mechanisms. We document high rates of social integration between refugees and natives through intermarriage, and we show that exposure to refugee women is associated with shifts in gender attitudes among women. As we discuss below, the attitudinal evidence is asymmetric: attitudes shift among women, while average male attitudes show no clear movement over 1990–1996, suggesting that behavior and female attitudes moved ahead of stated male attitudes.

7.1 Evidence of Social Interactions: Intermarriage

Intermarriage provides direct evidence of social integration between refugees and natives and captures one of the most immediate forms of first-hand exposure to the norms and behaviors brought by the refugee population. Using the 2000 Census, we examine intermarriage between the two groups. We focus on households in which either the household head or his/her spouse is an ethnic Turkish migrant. We find that, among ethnic Turkish migrants in a spousal relationship, 23.3% are married to natives. However, ethnic Turkish migrants include individuals who arrived in Türkiye at various times. To increase the likelihood of capturing the refugees who arrived in 1989 (as opposed to earlier waves in 1950–51 and 1968), we also examine younger migrants. The share married to natives rises to 25.6% when we restrict the sample to those born after 1950, and to 34.8% when we restrict the sample to those born after 1960. Finally, when we restrict it to those born after 1970—essentially ruling out arrivals in the 1950–51 and 1968 waves—the share increases to 56.9%. In other words, within the group composed mainly of refugees who arrived in 1989, more than half are married to natives.

These remarkably high intermarriage rates are perhaps not surprising among groups shar-

ing the same language and religion, and they confirm that refugees were embedded in the same neighborhoods, families, and social networks as native women—exactly the environment in which previously binding constraints on women’s work can weaken. Intermarriage may have reinforced these effects by facilitating the transmission of attitudes and behaviors within households, exposing native families to alternative views regarding women’s economic roles and labor-market participation.

7.2 Shifts in Attitudes

Cultural relaxation, as the paper conceives it, operates through multiple channels: the visibility of a new equilibrium in which women work in modern sectors, shifts in local expectations about what is socially acceptable, and changes in gender attitudes more broadly. This subsection focuses on the last of these. If the refugee shock relaxed cultural constraints on women’s work, we would expect to find corroborating evidence in attitudinal data.

To explore this, we analyze whether the presence of ethnic Turkish refugee women influenced local gender norms, using detailed data from the World Values Survey (WVS) conducted in Türkiye in 1990 and 1996. The WVS provides detailed information on attitudes toward work and job priority for men, as well as an Autonomy Index, which assesses perceptions of personal autonomy. These attitudes are shown to closely relate to women’s labor market participation and fertility decisions, particularly in traditional and religiously conservative societies (Bertrand, 2020; Fortin, 2015; Fernández, 2013).

We estimate a DiD specification where we exploit the spatial distribution of ethnic Turkish refugees at their time of arrival and the changes in attitudes and norms of women between 1990 and 1996 as follows:

$$(Outcome)_{irt} = \alpha + \beta [(Ethnic\ Turkish\ Refugees/Native)_{r,90} \times Post_t] + X_{irt}\Gamma + \mu_r + \theta_t + \varepsilon_{irt} \quad (2)$$

where i is the individual in region r in year t , and $Post_t$ indicates the 1996 survey wave. The 1990 wave serves as the pre-period: it was fielded within a year of the mid-1989 arrivals, before slow-moving norms could plausibly respond, consistent with our treatment of 1990 in the census placebos. The coefficient β therefore captures the difference-in-differences effect of regional exposure on the 1990–1996 change in attitudes. Regressions control for age, year fixed effects (θ_t) and region fixed effects (μ_r). Since the finest location information in the WVS is at the region level,³⁰ refugee density in equation (2) varies at this level, which is more aggregate than in equation (1). We estimate equation (2) using 2SLS, employing the same instrument as in equation (1)—the ratio of earlier ethnic Turkish migrants to natives in 1985, defined at the

³⁰In the WVS surveys, regional information is classified as follows: Adana, Ankara, Bursa, Istanbul, Izmir, Konya, Aegean-Marmara, Black Sea, Central Anatolia, Eastern and Southeastern Anatolia, and Mediterranean.

regional level and likewise interacted with $Post_t$. Standard errors are clustered at the regional level. With eleven regions, the number of clusters is small, and we read the standard errors with corresponding caution. The first-stage estimates are reported in Appendix Table A19.

The WVS records country of birth, so the sample in Table 11 includes the refugees themselves as well as natives. Appendix Table A20 re-estimates the analysis excluding respondents born outside Türkiye, about 3 percent of the sample, which brings it close to the census definition of natives. The women’s coefficients are nearly unchanged, so the attitudinal shifts are not driven by the refugees’ own responses. As in the census, Türkiye-born descendants of earlier migrants cannot be identified and remain in the sample (Section 4). We therefore interpret equation (2) as we do the census estimates: as the effect of exposure to refugee women on attitudes in receiving communities, rather than as horizontal transmission in a narrow sense.

Outcomes include whether an individual considers work very important or rather important in their life, whether they agree that men should have greater employment rights than women when jobs are scarce, and whether they strongly agree or agree that working mothers can have relationships with their children that are as warm and secure as those of non-working mothers. Additionally, we include the WVS autonomy index, which measures the degree of individuals’ adherence to autonomy norms. The index is based on the importance that individuals place on religious faith, obedience, independence, and perseverance.

Table 11 presents the estimation results for changes in cultural values, beliefs, and societal norms among women and men. The results summarized in Panel (A) indicate that women in regions with a higher presence of refugee women are more likely to view work as important and are less supportive of male job priority after the arrival of refugee women. Specifically, a one percentage point increase in the ratio of refugee women to natives in a region results in an eight percentage point rise in the importance placed on work and a 10 percentage point decline in the support for male job priority among women. A larger ratio of refugee women to natives also increases the autonomy index score among women. However, the data do not show a statistically significant result on whether working mothers’ relationships with their children can be as warm and secure as those of non-working mothers.

Panel (B) repeats the same analysis for men and demonstrates that the arrival of refugee women does not significantly impact men’s perceptions of the importance of work, their support for male job priority, or their scores on the autonomy index. However, we find that men are less likely to agree that a working mother can establish a warm and secure relationship with her children as much as a non-working mother. In Appendix Table A20, which excludes respondents born outside Türkiye, men’s support for male job priority also rises significantly; like the mother–child result, this points to a reaction against greater female employment rather than to an improvement in men’s views. These findings locate the attitudinal movement among women rather than men: whatever the direction of causality between attitudes and behavior, the margin that shifted is women’s own views, not men’s perceptions of working women. Our finding of no

improvement in men’s views of working women suggests that a broad shift in men’s normative attitudes, including those of employers, is unlikely to have driven our main results; we discuss the employer channel in Section 6.1.4. The contrast between women’s and men’s responses also helps explain a pattern in the labor market results. Married women responded strongly to the shock (Appendix Table A15), even though men’s average stated views in the same regions did not improve. This is not a contradiction. A married woman’s decision to work depends on her own preferences and on how acceptable female employment is in her community. Both of these shifted. Husbands’ stated ideals can adjust more slowly than household behavior (Fernández, 2013). Finally, the less favorable male response on the mother–child question may itself be a reaction to seeing more women at work, rather than evidence that the shock had no cultural effect.

Panel (C) addresses the natural concern that men’s attitudes should be measured against exposure to refugee men rather than refugee women. We re-estimate the male specifications replacing the female-based exposure measure with the ratio of 1989 refugee men to native men aged 18–39, instrumented by the same 1985 settlement instrument as in all other regressions. Since refugee men and women largely migrated together as family units, the two exposure measures are nearly collinear at the regional level of the WVS, and the corresponding first stages are very strong (Appendix Table A19). The results are qualitatively unchanged from Panel (B): the working-mother coefficient remains negative and significant, and no attitude item improves among men under either exposure measure.

Overall, the results in Table 11 show that women in areas with greater refugee exposure became more likely to value work and more willing to challenge traditional gender hierarchies. Because labor-market behavior and attitudes may co-evolve and reinforce each other, we interpret these results as corroborating evidence of a changing local cultural environment rather than as a separate causal estimate of the mechanism.

Our interpretation is closer to a relaxation of social constraints and uncertainty than to a complete rewriting of deep preferences. A decade is short for intergenerational preference change, and our claims do not require it: behavior can respond quickly once binding constraints relax, while deep preferences may evolve slowly. Consistent with this reading, the three outcomes we study operate over different timescales—employment can respond within years once barriers fall, whereas fertility and schooling reflect cumulative decisions.

8 Conclusion

This paper studies whether cultural barriers can operate as a development bottleneck by constraining women’s entry into modern sectors and by slowing fertility decline and human-capital accumulation. We exploit the forced inflow of ethnic Turks from Bulgaria to Türkiye in 1989 as an exogenous shock to local social environments in a conservative middle-income economy.

Refugee women shared language and religion with natives but arrived with markedly stronger labor-market attachment, much higher participation in manufacturing, lower fertility, and higher schooling.

Our main results show that districts with greater exposure to refugee women experienced larger gains in native women’s labor force participation and employment, especially in tradable manufacturing, with no significant gains for native men. Exposure also reduced fertility, and it increased middle-school completion among native girls and boys alike. We interpret these three margins jointly: the refugee shock relaxed a previously binding cultural constraint on women’s entry into modern-sector work in a setting where modern jobs existed but social constraints remained strong, and in doing so it moved the economy along margins that development theory identifies as foundational. Whereas the norm-diffusion literature establishes that exposure between groups can shift women’s labor supply and fertility, our contribution is to trace the development consequences of relaxing such constraints in a conservative middle-income economy.

Two qualifications are in order. The paper does not claim to identify long-run aggregate growth directly, and it does not claim to isolate a single transmission mechanism with certainty. The contribution lies in showing that an exogenous cultural shock shifted economically meaningful allocations in ways that are hard to reconcile with standard labor-demand explanations alone.

More broadly, the findings suggest that persistent cultural barriers may help explain why some middle-income economies experience slow and uneven structural transformation. When women’s work in modern sectors becomes socially feasible, the effects may extend beyond employment itself to fertility and human-capital investment. In that sense, culture is not peripheral to development; it can be one of the frictions that determine how quickly development proceeds.

Author Declarations

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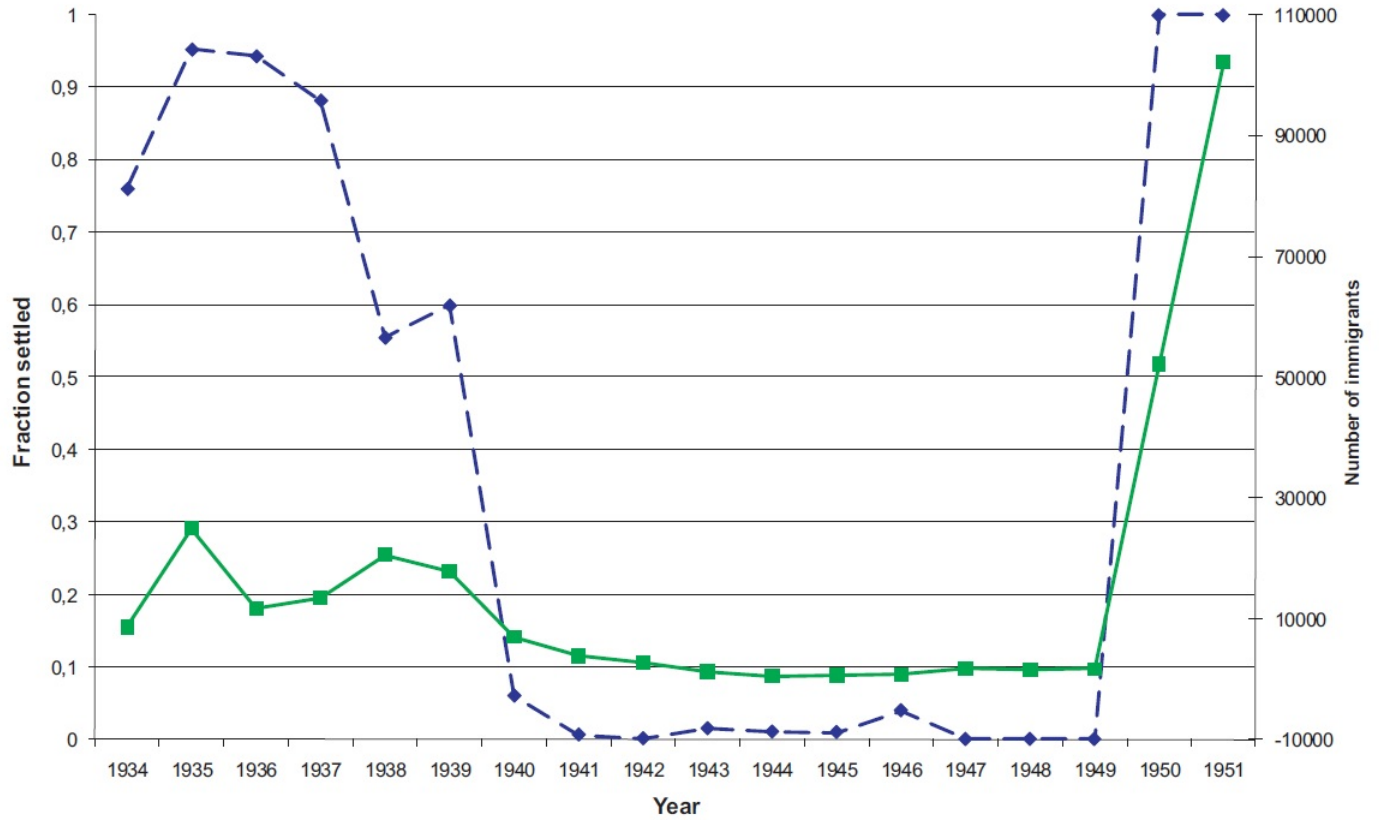
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Figures

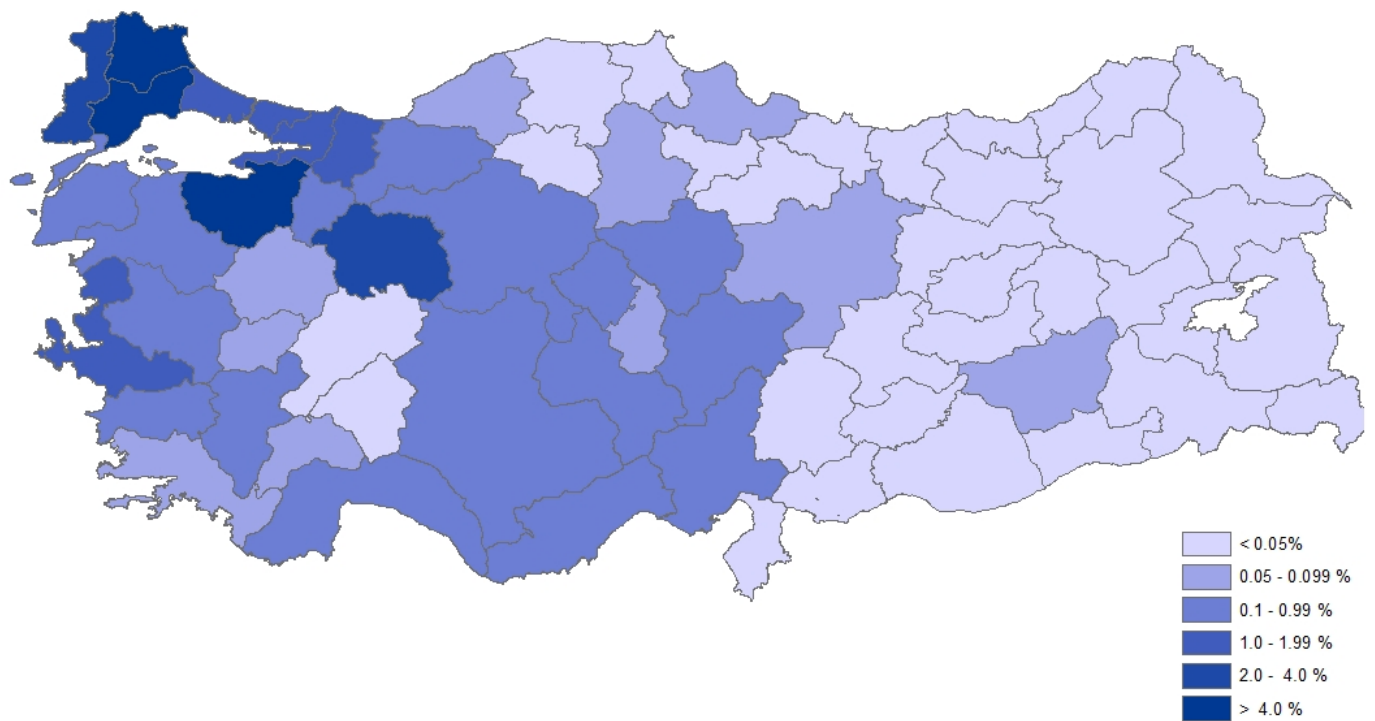
Figure 1: Immigrant flows from Bulgaria 1934–1951



Notes: The dashed line represents the "Fraction settled" while the solid line corresponds to the "Number of immigrants." Data on the migrants who were settled by the state is accessible for the period between 1934 and 1960. The majority of the 1968 cohort, who arrived as part of the family reunification agreement, were not officially accommodated by the state, although specific figures are unavailable. Similarly, information regarding the settlement of the 1989 cohort is also unknown. Migration from Bulgaria significantly declined after 1951, except for the 1968 and 1989 flows. A small number of migrants may have left the country illegally, but exact numbers are not provided.

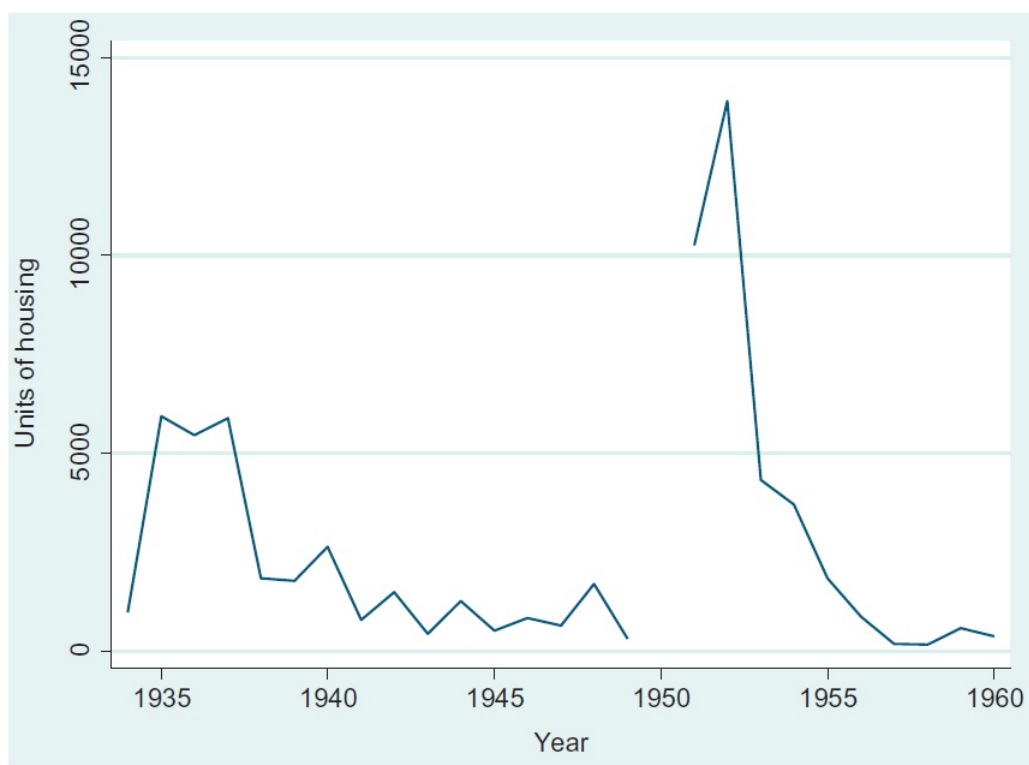
Source: Geray (1962), Türkiye'den ve Türkiye'ye Göçler, Ankara.

Figure 2: Ethnic Turkish to Native Turkish Ratio across Provinces in 1985



Source: The 1985 Turkish Census Data

Figure 3: Housing construction for immigrants, 1934–1960



Source: Geray (1962), Türkiye’den ve Türkiye’ye Göçler, Ankara. Data for 1950 is unavailable.

Tables

Table 1: Ethnic Turkish vs Native Turkish Samples

	Women		Men	
	1989 Refugees	Natives	1989 Refugees	Natives
Share Employed	0.683	0.169	0.875	0.819
Share in Labor Force	0.715	0.196	0.966	0.918
Share Employed in the Labor Force	0.956	0.862	0.906	0.892
Sector of Employment				
Agriculture	0.013	0.100	0.010	0.046
Mining and Quarrying	0.000	0.001	0.004	0.007
Manufacturing	0.663	0.229	0.500	0.223
Textile Manufacturing	0.471	0.151	0.156	0.064
Non-textile Manufacturing	0.192	0.078	0.343	0.159
Electricity, Gas, and Water	0.001	0.004	0.002	0.008
Construction	0.004	0.006	0.149	0.104
Wholesale and Retail Trade, Restaurants, Hotels	0.100	0.085	0.105	0.168
Transportation, Communications, and Storage	0.004	0.031	0.077	0.071
Financial Institutions	0.031	0.127	0.026	0.045
Community, Social, and Personal Services	0.173	0.406	0.115	0.316
Unspecified Activities	0.010	0.012	0.012	0.012
Number of Births	1.488	1.829	–	–
Education				
Share Primary School Degree	0.060	0.531	0.030	0.497
Share Middle School Degree	0.386	0.081	0.253	0.136
Share High School Degree	0.455	0.162	0.644	0.226
Share College Degree	0.073	0.061	0.068	0.121
Observations	1,708	289,169	1,558	333,127
Observations, Employed	1,167	48,953	1,363	272,742

Notes: The sample is restricted to 18- to 39-year-olds living in all 623 district centers (based on the 1985 classification) in the 1990 Türkiye Census. The “1989 Refugees” sample comprises individuals who were in Bulgaria in 1985 but in Türkiye in 1990; the “Natives” sample comprises individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants. Shares across sectors of employment are computed among the employed who report an industry. Textile and non-textile manufacturing sum to total manufacturing. The number of births is the total number of children ever born. Each education row reports the share of individuals whose highest completed degree is the one indicated; these shares are computed among 18- to 39-year-olds for the primary and middle school degrees, among 20- to 39-year-olds for the high school degree, and among 25- to 39-year-olds for the college degree. The first observations row refers to the full 18–39 sample; the second refers to the employed reporting an industry.

Table 2: The Long-term Labor Market Impact of the 1989 Refugee Shock on Native Population by Gender

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Panel A: Impact on Native Turkish Women aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.459** (0.206)	0.574** (0.267)	0.545*** (0.210)	0.713** (0.292)	0.884*** (0.173)	0.922*** (0.246)
Observations	623	623	623	623	623	623
R^2	0.685	0.684	0.648	0.648	0.637	0.637
Panel B: Impact on Native Turkish Men aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.031 (0.230)	0.185 (0.272)	0.164 (0.137)	0.248 (0.176)	0.842** (0.370)	0.510 (0.374)
Observations	623	623	623	623	623	623
R^2	0.627	0.627	0.537	0.536	0.555	0.551
Urban Areas (Population above 20,000)						
Panel C: Impact on Native Turkish Women aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.590** (0.254)	0.616*** (0.223)	0.665** (0.287)	0.739** (0.289)	0.850*** (0.210)	0.712*** (0.213)
Observations	225	225	225	225	225	225
R^2	0.846	0.846	0.810	0.810	0.791	0.790
Panel D: Impact on Native Turkish Men aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.281 (0.318)	0.255 (0.309)	0.200 (0.221)	0.228 (0.254)	0.868* (0.502)	0.318 (0.425)
Observations	225	225	225	225	225	225
R^2	0.79	0.79	0.769	0.769	0.668	0.660

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. The sample is further restricted to women in panel (A) and (C) and to men in panel (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels (A) and (B) and 225 province and district centers with populations above 20,000 in Panels (C) and (D) based on the administrative classification in 1985.

ii) In panels A and C (B and D), the dependent variable represents the changes from 1990 to 2000 in the proportion of native Turkish women (men) in each district who are: a) employed, b) in the labor force, and c) employed in manufacturing. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. The control shares and the populations entering the weights are computed within the indicated gender. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 3: The Long-term Impact of the 1989 Refugee Shock on Gender-Differenced Labor Market Outcomes (Women - Men)

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.475* (0.266)	0.656** (0.279)	0.571*** (0.207)	0.811*** (0.251)	-0.102 (0.282)	0.379 (0.289)
Observations	623	623	623	623	623	623
R^2	0.442	0.442	0.490	0.489	0.401	0.395
Panel B: Urban Areas (Population above 20,000)						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.366 (0.396)	0.474 (0.310)	0.697** (0.312)	0.820*** (0.271)	-0.058 (0.341)	0.465* (0.273)
Observations	225	225	225	225	225	225
R^2	0.653	0.652	0.657	0.656	0.560	0.552
Panel C: Urban Areas and NUTS1 ≤ 9 (Excluding Eastern Türkiye)						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.504 (0.413)	0.553 (0.345)	0.760** (0.332)	0.902*** (0.290)	-0.041 (0.350)	0.513* (0.280)
Observations	176	176	176	176	176	176
R^2	0.566	0.565	0.644	0.644	0.566	0.557
Panel D: Urban Areas and NUTS1 ≤ 6 (Western half of Türkiye)						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.202 (0.467)	0.108 (0.405)	0.654* (0.375)	0.751** (0.334)	0.137 (0.350)	0.638** (0.312)
Observations	120	120	120	120	120	120
R^2	0.589	0.589	0.660	0.660	0.579	0.570

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers in Panel (A) and to 225 province and district centers with populations above 20,000 in Panels (B) to (D) based on the administrative classification in 1985.

ii) The dependent variable is the difference between native women and men in the change between 1990 and 2000 in the share of: a) employed b) in the labor market, and c) employed in manufacturing. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. The control shares and the populations entering the weights are computed over men and women combined; because the gender-specific regressions of Table 2 use own-gender shares and weights, the gender-differenced coefficients need not equal the difference between the corresponding coefficients of Table 2. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 4: Sectoral Decomposition of the Gender-Differenced Employment Response (Women - Men)

	All		Urban		Urban, NUTS1 ≤ 9		Urban, NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Employment (total)	0.475* (0.266)	0.656** (0.279)	0.366 (0.396)	0.474 (0.310)	0.504 (0.413)	0.553 (0.345)	0.202 (0.467)	0.108 (0.405)
Agriculture	-0.107 (0.113)	-0.100 (0.156)	-0.214 (0.168)	-0.301 (0.193)	-0.222 (0.163)	-0.305* (0.178)	-0.246 (0.184)	-0.380* (0.204)
Manufacturing	-0.102 (0.282)	0.379 (0.289)	-0.058 (0.341)	0.465* (0.273)	-0.041 (0.350)	0.513* (0.280)	0.137 (0.350)	0.638** (0.312)
of which: Textile	0.299 (0.248)	0.658** (0.308)	0.423 (0.311)	0.761** (0.340)	0.407 (0.320)	0.786** (0.357)	0.425 (0.326)	0.870** (0.399)
of which: Other manufacturing	-0.401** (0.174)	-0.280 (0.251)	-0.481** (0.243)	-0.296 (0.250)	-0.448* (0.269)	-0.273 (0.277)	-0.288 (0.248)	-0.231 (0.296)
Services	0.660 (0.440)	0.576* (0.317)	0.543 (0.573)	0.366 (0.374)	0.545 (0.528)	0.279 (0.375)	0.152 (0.542)	-0.246 (0.425)
Observations	623	623	225	225	176	176	120	120

Notes: i) Each cell reports the coefficient on the treatment ratio from a separate regression. The dependent variable is the difference between native women and men in the change between 1990 and 2000 in the employment share of the indicated sector (employed in the sector over all natives of the given gender aged 18–39); the Employment row reproduces Table 3. The specification, controls, weights, and instrument are identical to Table 3. Urban denotes district centers with 1990 population above 20,000.

ii) Because sector shares sum to the employment share, the sector coefficients sum to the Employment coefficient within each column; the Textile and Other manufacturing rows partition Manufacturing and lie outside the sum. Mining, infrastructure, and construction are omitted from the table; their coefficients are small in absolute value — the differenced infrastructure coefficients are negative and significant in the restricted samples, as discussed in the text — and are reported, with the full nine-sector decomposition, in Appendix Table A12. Appendix Tables A13 and A14 report the decomposition separately for women and for men across the same four samples. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 5: Examining Potential Labor Demand Shifts: The Long-term Impact of the 1989 Refugee Shock on Sector-Specific Total Employment

	Employed in Manufacturing		Employed in Textiles		Employed in Manufacturing other than Textiles	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.759*** (0.246)	0.641** (0.273)	0.458* (0.248)	0.344 (0.306)	0.301** (0.119)	0.296** (0.142)
Observations	623	623	623	623	623	623
R^2	0.580	0.579	0.670	0.669	0.437	0.437
Panel B: Urban Areas						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.812** (0.339)	0.456 (0.298)	0.475 (0.341)	0.198 (0.350)	0.337** (0.169)	0.258 (0.171)
Observations	225	225	225	225	225	225
R^2	0.708	0.701	0.772	0.767	0.598	0.597

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

ii) The dependent variable is the change between 1990 and 2000 in the share of native men and women in each district who are employed in a) manufacturing, b) textiles, and c) manufacturing other than textiles. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. Both OLS and 2SLS regressions are run. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 6: Impact of the 1989 Refugee Shock on Women's Fertility: Number of Live Births

	Full Sample		NUTS1 ≤ 9		NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.995* (0.554)	-1.138** (0.566)	-0.930 (0.573)	-1.077* (0.577)	-0.830 (0.553)	-0.942* (0.562)
Observations	623	623	465	465	289	289
R^2	0.496	0.496	0.433	0.433	0.419	0.419

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish women. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

ii) The dependent variable is the number of live births per woman. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39) and shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates), as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. The ratio is measured as a fraction; a printed coefficient therefore gives the effect of a one-unit (100 percentage point) increase in the ratio, and dividing by 100 yields the effect per percentage point (e.g., the full-sample 2SLS coefficient of -1.138 corresponds to 0.011 fewer births per woman per percentage point). The labor market coefficients are unaffected by this convention because their outcomes are also measured as fractions, so they read directly as percentage-point effects per percentage point of the ratio. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 7: The Long-term Impact of the 1989 Refugee Shock on Native Women's Schooling Outcomes

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.286 (0.522)	-0.142 (0.528)	0.563** (0.233)	0.484* (0.292)	0.101 (0.258)	-0.043 (0.298)	-0.161 (0.158)	0.001 (0.201)
Observations	623	623	623	623	622	622	622	622
R^2	0.458	0.457	0.307	0.307	0.300	0.300	0.400	0.399

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to 14- to 19-year-olds in Columns (1) and (2), 17- to 22-year-olds in Columns (3) and (4), 20- to 25-year-olds in Columns (5) and (6), and 25- to 30-year-olds in Columns (7) and (8). Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

ii) The dependent variable is the change between 1990 and 2000 in the share of native women in each district who are: a) primary school graduates in Columns (1) and (2), b) middle school graduates in Columns (3) and (4), c) high school graduates in Columns (5) and (6), and d) college graduates in Columns (7) and (8). The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 8: Placebo Test on the Impact on Labor Market Outcomes: Using the 1985 and 1990 Censuses

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Panel A: Impact on Native Turkish Women aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.207 (0.208)	0.152 (0.271)	0.263 (0.232)	0.172 (0.275)	0.275** (0.110)	0.236 (0.145)
Observations	623	623	623	623	623	623
R^2	0.185	0.185	0.171	0.170	0.267	0.267
Panel B: Impact on Native Turkish Men aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.270 (0.169)	-0.013 (0.219)	-0.035 (0.130)	0.152 (0.144)	0.409 (0.255)	0.530 (0.343)
Observations	623	623	623	623	623	623
R^2	0.347	0.345	0.292	0.290	0.503	0.502
Urban Areas						
Panel C: Impact on Native Turkish Women aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.112 (0.283)	-0.084 (0.239)	-0.031 (0.362)	0.034 (0.301)	0.134 (0.123)	0.019 (0.134)
Observations	225	225	225	225	225	225
R^2	0.361	0.361	0.362	0.362	0.441	0.438
Panel D: Impact on Native Turkish Men aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.338* (0.195)	-0.273 (0.179)	0.022 (0.135)	0.147 (0.107)	0.312 (0.382)	0.187 (0.388)
Observations	225	225	225	225	225	225
R^2	0.573	0.573	0.493	0.492	0.642	0.642

Notes: i) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. The sample is further restricted to women in panel (A) and (C) and to men in panel (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels (A) and (B) and 225 province and district centers with a population above 20,000 in Panels (C) and (D) according to the administrative classification in 1985.

ii) The dependent variable in panels A and C (B and D) are the changes between 1985 and 1990 in the share of native women (men) in each district who are: a) employed b) in the labor force, and c) employed in manufacturing. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 9: The Impact of the 1989 Refugee Shock on Internal Migration

	Full Sample		Urban Areas		NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.157 (0.476)	0.556* (0.314)	-0.495 (0.625)	0.227 (0.358)	-0.293 (0.471)	0.374 (0.305)
Observations	623	623	225	225	289	289
R^2	0.516	0.511	0.668	0.662	0.540	0.532

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

ii) The dependent variable is the change between 1990 and 2000 in the share of migrants (individuals who did not live in this district center five years ago). The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 10: Heterogeneity by Native Women's Education Level

	Employed		In the Labor Force		Employed in Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Primary School or Lower						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.003 (0.296)	-0.078 (0.246)	-0.007 (0.278)	0.021 (0.280)	0.502** (0.239)	0.328 (0.200)
Observations	225	225	225	225	225	225
R^2	0.611	0.611	0.643	0.643	0.723	0.721
Panel B: Middle School or High School						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	1.579*** (0.453)	1.917*** (0.377)	2.069*** (0.585)	2.538*** (0.473)	1.035*** (0.232)	1.011*** (0.298)
Observations	225	225	225	225	225	225
R^2	0.811	0.811	0.823	0.822	0.795	0.795
Panel C: College Graduate						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.966 (1.163)	1.072 (1.132)	0.502 (0.676)	0.167 (0.750)	1.603*** (0.429)	2.010*** (0.509)
Observations	221	221	221	221	221	221
R^2	0.502	0.502	0.587	0.587	0.660	0.656

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish women. Using the individual-level data, the unit of analysis is reduced to 225 province and district centers with a population above 20,000. Panels (A) to (C) present the results for different educational groups.

ii) The dependent variable is the change between 1990 and 2000 in the share of native women in each district who are a) employed, b) in the labor force, and c) employed in manufacturing. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table 11: The Impact of the 1989 Refugee Shock on Turkish Women's Gender Norms and Attitudes

	Work is Important	Approves Men's Priority in Jobs	Working Mother Child Bond	Autonomy Index
Panel A: World Value Surveys (1990 and 1996): Women				
1989 Refugees to Natives in 1990 among Women aged 18-39	8.380** (3.876)	-10.943*** (2.322)	-2.716 (3.708)	5.602*** (1.992)
Observations	842	834	872	892
R^2	0.083	0.117	0.052	0.042
Panel B: World Value Surveys (1990 and 1996): Men, Female-Based Exposure				
1989 Refugees to Natives in 1990 among Women aged 18-39	1.179 (0.986)	2.946 (2.545)	-6.930** (3.000)	0.950 (2.035)
Observations	848	804	855	864
R^2	0.053	0.124	0.076	0.047
Panel C: World Value Surveys (1990 and 1996): Men, Male-Based Exposure				
1989 Refugees to Natives in 1990 among Men aged 18-39	1.332 (1.105)	3.325 (2.921)	-7.824** (3.262)	1.068 (2.299)
Observations	848	804	855	864
R^2	0.053	0.123	0.076	0.047

Notes: The sample includes men and women aged 18-39 from the 1990 and 1996 Turkish World Values Surveys. Panel A reports results for women; Panels B and C report results for men. The 2SLS results from individual level regressions that control for age dummies, region, and year-fixed effects are reported. Ethnic Turks are defined as individuals who were born in Bulgaria. The endogenous variable in Panels A and B is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) among women aged 18-39; in Panel C it is the corresponding ratio among men aged 18-39; in each case the ratio is interacted with an indicator for the 1996 survey wave, as in equation (2). In all panels, the instrument is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census, interacted with the same indicator; the first stages are reported in Appendix Table A19. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the region.

Online Appendix A: Supplementary Tables and Figures

Table A1: The Labor Market Impact of the 1989 Refugee Shock on Native Population for Alternative Age Groups

	Employed		In the Labor Force		Employed in Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
I) Ages: 18-49						
Panel A: Impact on Native Turkish Women aged 18-49						
Ratio of 1989 Refugees to Natives	0.352*	0.407	0.431**	0.531*	0.692***	0.727***
	(0.188)	(0.254)	(0.189)	(0.278)	(0.131)	(0.197)
Observations	623	623	623	623	623	623
R^2	0.716	0.716	0.687	0.687	0.647	0.647
Panel B: Impact on Native Turkish Men aged 18-49						
Ratio of 1989 Refugees to Natives	0.022	0.198	0.143	0.243	0.698**	0.442
	(0.190)	(0.253)	(0.133)	(0.173)	(0.329)	(0.350)
Observations	623	623	623	623	623	623
R^2	0.652	0.652	0.59	0.589	0.614	0.612
II) Ages: 18-59						
Panel C: Impact on Native Turkish Women aged 18-59						
Ratio of 1989 Refugees to Natives	0.414**	0.456**	0.461***	0.538**	0.633***	0.653***
	(0.164)	(0.226)	(0.168)	(0.244)	(0.115)	(0.168)
Observations	623	623	623	623	623	623
R^2	0.72	0.72	0.697	0.697	0.637	0.637
Panel D: Impact on Native Turkish Men aged 18-59						
Ratio of 1989 Refugees to Natives	0.062	0.077	0.188	0.170	0.595**	0.338
	(0.183)	(0.241)	(0.133)	(0.185)	(0.303)	(0.307)
Observations	623	623	623	623	623	623
R^2	0.656	0.656	0.614	0.614	0.625	0.622

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to 18- to 49-year-old natives in Panels A and B and to 18- to 59-year-old natives in Panels C and D; it is further restricted to women in Panels A and C and to men in Panels B and D. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

b) The dependent variable in Panels A and C (B and D) is the change between 1990 and 2000 in the share of native women (men) in each district who are: a) employed, b) in the labor market, and c) employed in manufacturing.

c) The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18- to 39-year-old women. In the 2SLS regressions, the instrument is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census.

d) Control variables include the shares for six age groups (18-19, 20-24, 25-29, 30-34, 35-39, and the rest), for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and for 9 sectors of employment in the labor force, as well as log population and province dummies. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table A2: Descriptive Statistics

	1990 Census				2000 Census			
	Mean	SD	Min	Max	Mean	SD	Min	Max
A) Labor Market Outcomes								
Share Women Employed	0.169	0.065	0.000	0.646	0.187	0.082	0.000	0.482
Share Women in the Labor Market	0.196	0.067	0.000	0.677	0.287	0.090	0.026	0.643
Share Women in Manufacturing	0.039	0.030	0.000	0.432	0.043	0.038	0.000	0.266
Share Men Employed	0.817	0.063	0.504	1.000	0.718	0.105	0.253	0.946
Share Men in the Labor Market	0.917	0.031	0.609	1.000	0.902	0.042	0.473	1.000
Share Men in Manufacturing	0.185	0.096	0.000	0.505	0.173	0.097	0.000	0.464
(Share Women - Share Men) Employed	-0.648	0.071	-0.972	-0.137	-0.531	0.074	-0.866	-0.131
(Share Women - Share Men) in Labor Market	-0.721	0.077	-1.000	-0.275	-0.615	0.085	-0.900	-0.236
(Share Women - Share Men) in Manufacturing	-0.146	0.079	-0.433	0.238	-0.131	0.071	-0.383	0.167
B) Fertility Outcomes								
Number of Children	1.834	0.379	1.032	3.755	1.459	0.295	0.825	3.156
C) Schooling Outcomes								
Primary School Degree	0.510	0.095	0.000	1.000	0.357	0.092	0.000	1.000
Middle School Degree	0.137	0.043	0.000	1.000	0.137	0.035	0.000	0.500
High School Degree	0.213	0.078	0.000	0.667	0.324	0.094	0.000	1.000
College Degree	0.056	0.031	0.000	0.286	0.118	0.050	0.000	0.429

Notes: The data come from the 1990 and 2000 censuses. The samples in panels (B) and (C) include only women. The sample is restricted to 18- to 39-year-olds in panels (A) and (B). In panel (C), The sample is restricted to 14- to 19-year-olds for primary school degree, 17- to 22-year-olds for the middle school degree variable, 20- to 25-year-olds for the high school degree variable, and 25- to 30-year-olds for the college degree variable. The sample is further restricted to individuals living in district centers, and the individual-level data are aggregated to district center-level data. The unit of observation is the district center, and the number of observations is 623. District-level observations are weighted by $1/(1/\text{pop}(1990) + 1/\text{pop}(2000))$.

Table A3: Balance Tests for the Instrument: Association with Pre-Migration Local Characteristics

	Unemployment Rate	Share Labor Force	Share Employed	Share Manufacturing	Number of Births
Panel A: Full Sample					
Instrument (Earlier Ethnic Turkish to Natives in 1985)	0.018 [0.024]	-0.008 [0.027]	-0.011 [0.025]	0.116 [0.132]	0.001 [0.005]
Observations	623	623	623	623	623
R-squared	0.772	0.772	0.772	0.772	0.772
Panel B: Urban Areas (Population > 20,000)					
Instrument (Earlier Ethnic Turkish to Natives in 1985)	0.010 [0.057]	0.010 [0.078]	0.004 [0.063]	0.303 [0.247]	-0.016 [0.018]
Observations	225	225	225	225	225
R-squared	0.846	0.846	0.846	0.849	0.847

Notes: a) The micro-level data come from the 1985 Turkish census. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to individuals who are not ethnic Turks. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable for each regression is given in each column heading. The variable of interest is our instrument: the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. Each cell comes from a separate OLS regression. The control variables include the shares for five age-groups (18–19, 20–24, 25–29, 30–34, 35–39), for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and for nine sectors of employment in the labor force, as well as log population and province dummies. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table A4: Earlier Ethnic Turkish vs Native Turkish Samples in the Pre-Shock Period

	Women		Men	
	Earlier Ethnic Turkish	Natives	Earlier Ethnic Turkish	Natives
Mean Age	41.2	33.4	41.8	33.2
Share Employed	0.271	0.130	0.765	0.780
Share in Labor Force	0.279	0.147	0.808	0.866
Share Employed in the Labor Force	0.972	0.887	0.948	0.901
Sector of Employment				
Agriculture	0.029	0.120	0.030	0.063
Mining and Quarrying	0.000	0.001	0.003	0.009
Manufacturing	0.613	0.216	0.378	0.224
Textile Manufacturing	0.415	0.120	0.147	0.058
Non-textile Manufacturing	0.198	0.096	0.231	0.167
Electricity, Gas, and Water	0.000	0.001	0.002	0.003
Construction	0.004	0.005	0.120	0.084
Wholesale and Retail Trade, Restaurants, Hotels	0.076	0.073	0.146	0.163
Transportation, Communications, and Storage	0.012	0.033	0.078	0.074
Financial Institutions	0.034	0.107	0.030	0.044
Community, Social, and Personal Services	0.226	0.434	0.196	0.324
Unspecified Activities	0.005	0.008	0.015	0.012
Number of Births	2.896	2.858	–	–
Education				
Share Primary School Degree	0.428	0.473	0.416	0.528
Share Middle School Degree	0.212	0.063	0.270	0.115
Share High School Degree	0.104	0.119	0.168	0.171
Share College Degree	0.021	0.035	0.058	0.100
Observations	3,658	331,262	3,851	392,325
Observations, Employed	990	43,091	2,947	305,985

Notes: The sample is restricted to 18- to 59-year-olds living in all 623 district centers (based on the 1985 classification) in the 1985 Türkiye Census, i.e., before the 1989 refugee inflow. The “Earlier Ethnic Turkish” sample comprises earlier ethnic Turkish migrants—individuals born in Bulgaria and already residing in Türkiye in 1985, who arrived with the pre-1989 migration waves (primarily 1950–51 and 1968–79); the “Natives” sample comprises all remaining individuals. The wider age band is used because earlier ethnic Turkish migrants are substantially older than the 18–39 operating sample of Table 1; the mean-age row documents the remaining within-band difference. Shares across sectors of employment are computed among the employed who report an industry. Textile and non-textile manufacturing sum to total manufacturing. The number of births is the total number of children ever born. Each education row reports the share of individuals whose highest completed degree is the one indicated; these shares are computed among 18- to 59-year-olds for the primary and middle school degrees, among 20- to 59-year-olds for the high school degree, and among 25- to 59-year-olds for the college degree. The first observations row refers to the full 18–59 sample; the second refers to the employed reporting an industry.

Table A5: Ethnic Turkish–Native Differences in Women’s Labor Market Outcomes: Individual-Level Regressions

	Earlier Ethnic Turkish 1985 Census, 18–59		Earlier Ethnic Turkish 1985 Census, 18–39		1989 Ethnic Turkish 1990 Census, 18–39	
	Employed	In LF	Employed	In LF	Employed	In LF
No controls	0.141 (0.007)	0.132 (0.007)	0.274 (0.013)	0.266 (0.013)	0.514 (0.011)	0.519 (0.011)
District-center fixed effects	0.126 (0.007)	0.120 (0.007)	0.252 (0.013)	0.250 (0.013)	0.493 (0.011)	0.504 (0.011)
+ Age fixed effects	0.153 (0.007)	0.156 (0.007)	0.253 (0.013)	0.257 (0.013)	0.491 (0.011)	0.505 (0.011)
+ Education fixed effects	0.134 (0.007)	0.134 (0.007)	0.202 (0.012)	0.199 (0.012)	0.382 (0.011)	0.374 (0.011)
Observations	334,803		235,903		290,624	

Notes: Each cell reports the coefficient on the ethnic Turkish indicator from a separate individual-level regression of the outcome on the indicator and the listed controls, estimated on women in the indicated census year, age band, and comparison sample (the indicated ethnic Turkish migrant group vs natives) within the 623 district centers. District-center fixed effects correspond to the 623 province and district centers based on the 1985 classification. Age fixed effects are single-year-of-age dummies; education fixed effects are dummies for the six schooling categories. Heteroskedasticity-robust standard errors in parentheses. Observations refer to the richest specification; sample sizes in the sparser specifications differ by less than 0.1 percent. All coefficients are statistically significant at the 1 percent level.

Table A6: Placebo Test: The 1985 Instrument and Pre-Shock (1985–1990) Changes in Native Outcomes

	Employed	In the Labor Force	In Manufacturing	Fertility	Primary School	Middle School	High School	College
Instrument (Earlier Ethnic Turkish to Natives in 1985)	0.134 (0.136)	0.045 (0.133)	−0.163 (0.138)	0.474 (0.424)	−0.004 (0.186)	0.051 (0.116)	−0.190 (0.172)	0.083 (0.056)
Observations	623	623	623	623	622	623	622	622

Notes: Each cell reports the reduced-form coefficient on the instrument from a separate regression of the 1985–1990 change in the outcome, defined as in the corresponding manuscript table: the labor market outcomes are differences between native women and men in the change in the share employed, in the labor force, and employed in manufacturing; fertility is the number of live births per woman aged 18–39; the schooling outcomes are completion shares of native women in the level-specific age brackets. Controls, province fixed effects, and weights follow the corresponding manuscript tables. Heteroskedasticity-robust standard errors are shown in parentheses. No estimate is statistically significant at the 10 percent level.

Table A7: First-Stage Results

Table 2: Labor Market Outcomes by Gender				
	Women		Men	
	Full Sample	Urban Sample	Full Sample	Urban Sample
Instrument	0.399*** (0.037)	0.451*** (0.053)	0.402*** (0.041)	0.432*** (0.055)
F-Stat	114.808	71.266	97.570	62.447
Observations	623	225	623	225
R^2	0.923	0.951	0.915	0.947

Table 3: Labor Market Outcomes, Gendered Difference				
	Full Sample	Urban Sample	NUTS1 ≤ 9	NUTS1 ≤ 6
Instrument	0.431*** (0.045)	0.469*** (0.060)	0.460*** (0.055)	0.445*** (0.048)
F-Stat	89.979	60.012	70.262	85.381
Observations	623	225	176	120
R^2	0.913	0.943	0.945	0.947

Tables 6 and 7: Socioeconomic Outcomes				
	Fertility			Schooling
	Full Sample	NUTS1 ≤ 9	NUTS1 ≤ 6	Full Sample
Instrument	0.444*** (0.047)	0.444*** (0.047)	0.447*** (0.048)	0.397*** (0.040)
F-Stat	89.482	88.251	85.301	99.700
Observations	623	465	289	623
R^2	0.911	0.908	0.906	0.919

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. The sample restrictions are as defined in Tables 2, 3, 6, and 7. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. Then, further restrictions are made on the sample of district centers as defined in column headings.

b) The dependent variable is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. The instrument is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables are the same as those defined in individual tables. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. The Schooling column reports the first stage of the Table 7 specification for the middle-school cohort; across the four schooling cohorts, the F statistics range from 99.7 to 106.6. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table A8: Distribution of the Treatment and the Instrument across District Centers

	1989 refugee-to-native ratio		1985 settlement instrument	
	All districts	Positive only	All districts	Positive only
Mean	0.22	1.41	0.65	1.72
Standard deviation	0.91	1.93	2.02	3.00
p10	0.00	0.12	0.00	0.12
p25	0.00	0.28	0.00	0.33
p50	0.00	0.87	0.00	0.72
p75	0.00	1.57	0.46	1.75
p90	0.41	3.19	1.55	3.79
Maximum	10.83	10.83	22.67	22.67
Share positive (percent)	15.2	–	37.9	–
District centers positive	95	–	236	–
Population-weighted mean	0.59	–	1.36	–

Notes: Statistics are computed across the 623 district centers using the exposure variables of the main analysis, in percent. The treatment is the ratio of 1989 ethnic Turkish refugee women to native women aged 18–39 in 1990; the instrument is the 1985 settlement ratio of earlier ethnic Turkish migrants to the native adult population. “Positive only” columns condition on strictly positive values (95 and 236 district centers, respectively). The population-weighted mean uses 1990 district population. The correlation between the treatment and the instrument is 0.76, and district centers with positive treatment contain 62 percent of the 1990 population.

Table A9: Effect Sizes: Per Percentage Point and Per Standard Deviation of the Treatment

	+1 percentage point		+1 standard deviation (0.91 pp)	
	Effect	Percent of 1990 baseline	Effect	Percent of 1990 baseline
Employment	0.57 pp	3.4	0.52 pp	3.1
Labor force participation	0.71 pp	3.6	0.65 pp	3.3
Manufacturing employment	0.92 pp	23.6	0.84 pp	21.4
Births per woman	−0.011	−0.6	−0.010	−0.6

Notes: Effects use the full-sample 2SLS coefficients of Tables 2 and 6 (0.574, 0.713, 0.922, and −1.138). The standard deviation of the treatment across the 623 district centers is 0.91 percentage points; within the 95 positive district centers it is 1.93 percentage points, roughly doubling the one-standard-deviation effects. The 1990 baselines are from Table 1: employment 16.9 percent, labor force participation 19.6 percent, a manufacturing employment rate of 3.9 percent (16.9 percent employment times a 22.9 percent manufacturing share among the employed), and 1.829 births per woman. Fertility effects are in births per woman.

Table A10: Robustness to Ratio-Based Outcomes: Gender-Relative Labor Market Outcomes (Ratio of Female Share to Male Share)

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Refugees to Natives	0.625***	0.999***	0.709***	0.982***	1.652*	2.804*
in 1990 among Women aged 18-39	(0.210)	(0.301)	(0.181)	(0.264)	(0.895)	(1.482)
Observations	623	623	623	623	564	564
R^2	0.677	0.676	0.651	0.651	0.250	0.249
Panel B: Urban Areas (Population above 20,000)						
Ratio of 1989 Refugees to Natives	0.760***	0.940***	0.844***	1.010***	2.456**	2.108*
in 1990 among Women aged 18-39	(0.283)	(0.242)	(0.264)	(0.262)	(1.119)	(1.172)
Observations	225	225	225	225	225	225
R^2	0.784	0.784	0.772	0.772	0.379	0.379
Panel C: Urban Areas and NUTS1 ≤ 9 (Excluding Eastern Türkiye)						
Ratio of 1989 Refugees to Natives	0.662**	0.833***	0.881***	1.075***	1.471	1.312
in 1990 among Women aged 18-39	(0.300)	(0.255)	(0.273)	(0.275)	(1.072)	(1.104)
Observations	176	176	176	176	176	176
R^2	0.792	0.792	0.767	0.766	0.384	0.384
Panel D: Urban Areas and NUTS1 ≤ 6 (Western half of Türkiye)						
Ratio of 1989 Refugees to Natives	0.526	0.720**	0.883***	1.059***	1.242	0.718
in 1990 among Women aged 18-39	(0.351)	(0.294)	(0.313)	(0.311)	(1.086)	(0.945)
Observations	120	120	120	120	120	120
R^2	0.801	0.800	0.780	0.779	0.584	0.583

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers in Panel (A) and to 225 province and district centers with populations above 20,000 in Panels (B) to (D) based on the administrative classification in 1985. ii) The dependent variable is the change between 1990 and 2000 in the ratio of the female share to the male share of natives aged 18–39 who are: a) employed, b) in the labor force, and c) employed in manufacturing. In Panel (A), the manufacturing regressions exclude 59 district centers in which male manufacturing employment is zero in 1990 or 2000. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18- to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table A11: Gender-Differenced Labor Market Outcomes (Women - Men): High- versus Low-Exposure Locations, Grouped by Predicted Exposure (the Instrument)

	Employed		In the Labor Force		Employed in Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Exclude district centers where $0 < \text{instrument} < 0.02$						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.835** (0.374)	1.068*** (0.413)	0.577* (0.304)	1.021** (0.421)	0.243 (0.451)	0.923* (0.530)
Observations	439	439	439	439	439	439
R^2	0.466	0.466	0.472	0.471	0.356	0.344
Panel B: Exclude district centers where $0 < \text{instrument} < 0.04$						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.930 (0.848)	2.255** (0.973)	0.770 (0.826)	2.349** (1.050)	0.360 (0.994)	2.640** (1.303)
Observations	408	408	408	408	408	408
R^2	0.471	0.468	0.496	0.490	0.345	0.290
Panel C: Exclude district centers where $0 < \text{instrument} < 0.06$						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.734 (0.950)	2.194* (1.203)	0.218 (0.760)	2.009 (1.232)	0.334 (1.239)	3.313** (1.680)
Observations	401	401	401	401	401	401
R^2	0.469	0.465	0.485	0.478	0.329	0.246

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to 18- to 39-year-old individuals who are natives. Using individual-level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

b) The dependent variable is the difference between native women and men in the change between 1990 and 2000 in the share of: a) employed, b) in the labor market, and c) employed in manufacturing. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18- to 39-year-old women. In each panel, district centers are grouped by predicted exposure to the refugee shock, i.e., by the value of the instrument; grouping on the realized refugee-to-native ratio would select the sample on the endogenous treatment. In the 2SLS regressions, the instrument is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates), and for nine employment sectors, as well as log population and province dummies. District-level observations are weighted by $1/(1/\text{pop}(1990) + 1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table A12: Full Sectoral Decomposition of the Gender-Differenced Employment Response (Women - Men), All Samples

	All		Urban		Urban, NUTS1 ≤ 9		Urban, NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Employment (total)	0.475* (0.266)	0.656** (0.279)	0.366 (0.396)	0.474 (0.310)	0.504 (0.413)	0.553 (0.345)	0.202 (0.467)	0.108 (0.405)
Agriculture	-0.107 (0.113)	-0.100 (0.156)	-0.214 (0.168)	-0.301 (0.193)	-0.222 (0.163)	-0.305* (0.178)	-0.246 (0.184)	-0.380* (0.204)
Mining	0.013 (0.026)	-0.008 (0.037)	0.037 (0.036)	0.014 (0.043)	0.033 (0.040)	0.006 (0.048)	-0.019 (0.051)	-0.037 (0.057)
Manufacturing	-0.102 (0.282)	0.379 (0.289)	-0.058 (0.341)	0.465* (0.273)	-0.041 (0.350)	0.513* (0.280)	0.137 (0.350)	0.638** (0.312)
of which: Textile	0.299 (0.248)	0.658** (0.308)	0.423 (0.311)	0.761** (0.340)	0.407 (0.320)	0.786** (0.357)	0.425 (0.326)	0.870** (0.399)
of which: Other manufacturing	-0.401** (0.174)	-0.280 (0.251)	-0.481** (0.243)	-0.296 (0.250)	-0.448* (0.269)	-0.273 (0.277)	-0.288 (0.248)	-0.231 (0.296)
Infrastructure	-0.001 (0.023)	-0.003 (0.025)	-0.031 (0.022)	-0.056*** (0.019)	-0.027 (0.024)	-0.058*** (0.022)	-0.040* (0.024)	-0.071*** (0.027)
Construction	-0.021 (0.168)	-0.201 (0.137)	0.061 (0.230)	-0.062 (0.173)	0.186 (0.221)	0.067 (0.166)	0.174 (0.216)	0.140 (0.171)
Services	0.660 (0.440)	0.576* (0.317)	0.543 (0.573)	0.366 (0.374)	0.545 (0.528)	0.279 (0.375)	0.152 (0.542)	-0.246 (0.425)
Observations	623	623	225	225	176	176	120	120

Notes: This table reports all nine census sectors for the decomposition summarized in Table 4; see the notes to Table 4 for definitions. Infrastructure denotes the Electricity, Gas, and Water category of Table 1; its base share is below one percent. The differenced infrastructure coefficients in the restricted samples are negative and precisely estimated, mirroring the small male-directed utilities response discussed in the text. Samples follow the corresponding Table 3 panels; Urban denotes district centers with 1990 population above 20,000. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table A13: Employment, Participation, and Sectoral Decomposition for Native Women, across the Table 3 Samples

	All		Urban		Urban, NUTS1 ≤ 9		Urban, NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Employment (total)	0.459** (0.206)	0.574** (0.267)	0.590** (0.254)	0.616*** (0.223)	0.581** (0.264)	0.607*** (0.229)	0.400* (0.225)	0.470** (0.198)
Labor force participation	0.545*** (0.210)	0.713** (0.292)	0.665** (0.287)	0.739** (0.289)	0.673** (0.297)	0.771*** (0.284)	0.560* (0.289)	0.614** (0.276)
Agriculture	-0.119* (0.069)	-0.088 (0.108)	-0.107 (0.082)	-0.030 (0.078)	-0.111 (0.085)	-0.023 (0.081)	-0.139 (0.085)	-0.053 (0.078)
Mining	-0.006 (0.004)	-0.003 (0.007)	0.000 (0.004)	0.005 (0.007)	0.001 (0.005)	0.005 (0.007)	0.001 (0.006)	0.005 (0.008)
Manufacturing	0.884*** (0.173)	0.922*** (0.246)	0.850*** (0.210)	0.712*** (0.213)	0.854*** (0.206)	0.719*** (0.207)	0.727*** (0.186)	0.641*** (0.179)
of which: Textile	0.721*** (0.150)	0.732*** (0.193)	0.739*** (0.186)	0.600*** (0.206)	0.759*** (0.189)	0.606*** (0.206)	0.644*** (0.179)	0.517*** (0.183)
of which: Other manufacturing	0.164* (0.086)	0.190* (0.113)	0.111 (0.103)	0.112 (0.111)	0.095 (0.094)	0.114 (0.101)	0.083 (0.088)	0.124 (0.092)
Infrastructure	-0.002 (0.008)	-0.003 (0.006)	-0.007 (0.010)	-0.011 (0.007)	-0.006 (0.010)	-0.007 (0.007)	-0.007 (0.010)	-0.007 (0.007)
Construction	-0.002 (0.010)	-0.006 (0.010)	0.004 (0.014)	0.004 (0.012)	-0.001 (0.013)	0.002 (0.011)	-0.002 (0.014)	0.002 (0.013)
Services	-0.290 (0.178)	-0.219 (0.227)	-0.153 (0.230)	-0.066 (0.210)	-0.159 (0.235)	-0.092 (0.219)	-0.180 (0.223)	-0.120 (0.219)
Observations	623	623	225	225	176	176	120	120

Notes: Each cell is from a separate regression of the 1990–2000 change in the outcome among native women aged 18–39: the employment rate, the labor force participation rate, or the sector’s employment share (employment in the sector over all women in the sample). Sector shares sum to the employment share, so the six sector coefficients (excluding the textile and other-manufacturing memo rows, which partition manufacturing) sum to the employment coefficient up to the small unclassified-sector share. Urban denotes district centers with 1990 population above 20,000; the NUTS1 restrictions follow the corresponding Table 3 panels. Controls, weights, and instruments follow Tables 2 and 3. Heteroskedasticity-robust standard errors are shown in parentheses. Infrastructure denotes the Electricity, Gas, and Water category of Table 1. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level.

Table A14: Employment, Participation, and Sectoral Decomposition for Native Men, across the Table 3 Samples

	All		Urban		Urban, NUTS1 ≤ 9		Urban, NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Employment (total)	0.031 (0.230)	0.185 (0.272)	0.281 (0.318)	0.255 (0.309)	0.117 (0.331)	0.166 (0.330)	0.297 (0.328)	0.516 (0.362)
Labor force participation	0.164 (0.137)	0.248 (0.176)	0.200 (0.221)	0.228 (0.254)	0.171 (0.237)	0.203 (0.259)	0.254 (0.248)	0.342 (0.287)
Agriculture	0.104 (0.070)	0.216** (0.099)	0.110 (0.117)	0.226* (0.122)	0.083 (0.113)	0.178 (0.117)	0.069 (0.156)	0.173 (0.161)
Mining	-0.024 (0.025)	-0.003 (0.037)	-0.046 (0.042)	-0.021 (0.043)	-0.035 (0.050)	-0.012 (0.047)	-0.016 (0.058)	0.014 (0.053)
Manufacturing	0.842** (0.370)	0.510 (0.374)	0.868* (0.502)	0.318 (0.425)	0.814 (0.508)	0.249 (0.432)	0.661 (0.503)	0.139 (0.403)
of which: Textile	0.356 (0.353)	0.079 (0.430)	0.301 (0.492)	-0.108 (0.493)	0.326 (0.504)	-0.132 (0.508)	0.328 (0.500)	-0.196 (0.489)
of which: Other manufacturing	0.486** (0.189)	0.431* (0.233)	0.566** (0.263)	0.426 (0.271)	0.487* (0.271)	0.381 (0.277)	0.334 (0.245)	0.336 (0.263)
Infrastructure	0.005 (0.020)	0.007 (0.023)	0.017 (0.018)	0.040*** (0.014)	0.013 (0.020)	0.037** (0.015)	0.017 (0.021)	0.037** (0.016)
Construction	-0.019 (0.172)	0.144 (0.138)	-0.019 (0.212)	0.116 (0.158)	-0.134 (0.207)	-0.012 (0.152)	-0.131 (0.201)	-0.081 (0.162)
Services	-0.877* (0.476)	-0.685* (0.395)	-0.658 (0.616)	-0.433 (0.436)	-0.634 (0.597)	-0.284 (0.485)	-0.314 (0.598)	0.222 (0.506)
Observations	623	623	225	225	176	176	120	120

Notes: Each cell is from a separate regression of the 1990–2000 change in the outcome among native men aged 18–39: the employment rate, the labor force participation rate, or the sector’s employment share (employment in the sector over all men in the sample). Sector shares sum to the employment share, so the six sector coefficients (excluding the textile and other-manufacturing memo rows, which partition manufacturing) sum to the employment coefficient up to the small unclassified-sector share. Urban denotes district centers with 1990 population above 20,000; the NUTS1 restrictions follow the corresponding Table 3 panels. Controls, weights, and instruments follow Tables 2 and 3. Heteroskedasticity-robust standard errors are shown in parentheses. Infrastructure denotes the Electricity, Gas, and Water category of Table 1. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level.

Table A15: Labor Market Effects by Marital Status: Native Women Aged 18–39

	Employed		In the Labor Force		In Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A. Full sample						
Married	0.518*** (0.199)	0.632** (0.265)	0.526** (0.212)	0.648** (0.294)	0.678*** (0.153)	0.698*** (0.197)
Never married	0.481 (0.624)	0.167 (0.617)	0.902 (0.603)	0.754 (0.633)	1.642*** (0.329)	1.662*** (0.487)
Ever married	0.460** (0.197)	0.566** (0.259)	0.518** (0.210)	0.618** (0.286)	0.676*** (0.152)	0.680*** (0.195)
Panel B. Urban sample (1990 population above 20,000)						
Married	0.688*** (0.249)	0.690*** (0.228)	0.666** (0.267)	0.651** (0.265)	0.738*** (0.200)	0.632*** (0.192)
Never married	0.445 (0.683)	0.334 (0.593)	1.131 (0.795)	1.266* (0.707)	1.443*** (0.406)	1.332*** (0.492)
Ever married	0.637*** (0.242)	0.653*** (0.220)	0.717*** (0.260)	0.703*** (0.261)	0.713*** (0.198)	0.593*** (0.189)

Notes: Each cell reports the coefficient on the 1989 refugee-to-native ratio from a separate district-level regression of the 1990–2000 change in the indicated outcome for the indicated marital group of native women aged 18–39, using the specification of Table 2: lagged age, education, and sector composition of the group, lagged log district population, province fixed effects, and weights based on the harmonic mean of the group’s 1990 and 2000 cell populations. 2SLS instruments the ratio with the 1985 settlement of earlier ethnic Turkish migrants. Currently married women have medeni durumu “married”; never-married women have never married; ever-married women add the small divorced and widowed groups. The full sample comprises 623 district centers (620 with never-married cells in both years); the urban sample comprises the 225 district centers with 1990 population above 20,000. First-stage robust F statistics are 112.3, 104.7, and 108.8 (full sample) and 67.6, 67.1, and 63.3 (urban sample) for the married, never-married, and ever-married panels, respectively. Marital status is measured contemporaneously in each census. Heteroskedasticity-robust standard errors are shown in parentheses. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level.

Table A16: The 1989 Refugee Shock and Native Men's Schooling Outcomes

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18–39	−0.293 (0.311)	−0.838* (0.463)	0.468* (0.262)	0.807** (0.334)	0.167 (0.280)	−0.422 (0.357)	−0.061 (0.249)	0.034 (0.207)
Observations	622	622	623	623	623	623	623	623
Mean of outcome in 1990	0.493		0.192		0.272		0.098	

Notes: Outcomes are the 1990–2000 changes in the share of native men whose highest completed level is the one indicated, in the age brackets of the corresponding manuscript table (14–19, 17–22, 20–25, and 25–30). The treatment is the baseline ratio of 1989 refugee women to native women aged 18–39, instrumented by the baseline 1985 instrument. The Mean of outcome row reports the weighted 1990 mean of each outcome; the corresponding means for women are in Appendix Table A2, Panel C. Controls, weights, and samples follow Table 7. Heteroskedasticity-robust standard errors are shown in parentheses. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level.

Table A17: Robustness to the Definition of Natives: Excluding All Members of Households with a Bulgarian-Born Individual

	Employed		In the Labor Force		In Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A. Full sample (623 district centers)						
Baseline (Table 2)	0.459** (0.206)	0.574** (0.267)	0.545*** (0.210)	0.713** (0.292)	0.884*** (0.173)	0.922*** (0.246)
Excluding Bulgarian-linked households	0.554*** (0.202)	0.675*** (0.251)	0.653*** (0.198)	0.817*** (0.277)	0.915*** (0.173)	0.953*** (0.243)
Panel B. Urban sample (225 district centers)						
Baseline (Table 2)	0.590** (0.254)	0.616*** (0.223)	0.665** (0.287)	0.739** (0.289)	0.850*** (0.210)	0.712*** (0.213)
Excluding Bulgarian-linked households	0.686*** (0.252)	0.691*** (0.219)	0.758*** (0.269)	0.815*** (0.272)	0.880*** (0.211)	0.734*** (0.215)
Panel C. Fertility: number of live births per woman						
	Full Sample		NUTS1 ≤ 9		NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Baseline (Table 6)	-0.995* (0.554)	-1.138** (0.566)	-0.930 (0.573)	-1.077* (0.577)	-0.830 (0.553)	-0.942* (0.562)
Excluding Bulgarian-linked households	-1.058* (0.552)	-1.281** (0.563)	-1.001* (0.567)	-1.224** (0.571)	-0.911* (0.541)	-1.093** (0.552)

Notes: Each cell reports the coefficient on the 1989 refugee-to-native ratio for native women aged 18–39 using the specification of Table 2, with identical controls, weights, and inference; Panel C reports the number of live births per woman using the specification of Table 6, with its columns corresponding to the full sample and the NUTS1 ≤ 9 and NUTS1 ≤ 6 subsamples. The “Excluding Bulgarian-linked households” rows drop every member of a household containing a Bulgarian-born individual, whether a 1989 ethnic Turkish refugee or an earlier ethnic Turkish migrant. Family linkage is constructed within identifiable households (enumeration cells of at most 30 people, covering 99 percent of individuals; implied household sizes track the census roster count with a correlation of 0.84); records without valid household identifiers retain the individual-level exclusion. The additional exclusion removes 1.15 percent of the 1990 population and 0.51 percent of the 2000 population beyond the Bulgarian-born themselves. The ratio is measured as a fraction; dividing the Panel C fertility coefficients by 100 gives effects per percentage point, while the share outcomes in Panels A and B read directly as percentage-point effects per percentage point (as in Table 6). Heteroskedasticity-robust standard errors are shown in parentheses. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level.

Table A18: Robustness to the Definition of Natives: Native Women's Schooling Outcomes

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Baseline (Table 7)	0.286 (0.522)	-0.142 (0.528)	0.563** (0.233)	0.484* (0.292)	0.101 (0.258)	-0.043 (0.298)	-0.161 (0.158)	0.001 (0.201)
Excluding Bulgarian-linked households	0.410 (0.569)	-0.035 (0.549)	0.563** (0.226)	0.461* (0.273)	0.160 (0.276)	-0.065 (0.332)	-0.131 (0.163)	0.048 (0.201)

Notes: Each cell reports the coefficient on the 1989 refugee-to-native ratio for native women using the specification of Table 7, with identical cohort definitions, controls, weights, and inference. The "Excluding Bulgarian-linked households" row applies the family-exclusion rule of Appendix Table A17. The number of district centers is 623 for primary school (622 under the exclusion) and middle school, and 622 for high school and college in both rows. Heteroskedasticity-robust standard errors are shown in parentheses. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level.

Table A19: First-Stage Results for the WVS Exposure Measures

	(A)	(B)
	Exposure among women aged 18–39	Exposure among men aged 18–39
Instrument	0.434*** (0.015)	0.384*** (0.005)
F-Stat	893	7257
Observations	842	848
R^2	0.975	0.999

Notes: a) The data come from the individual-level estimation samples of the 1990 and 1996 Turkish World Values Surveys, respondents aged 18–39, as in Table 11.

b) The dependent variable is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants), computed among women aged 18–39 in Column A and among men aged 18–39 in Column B, in each case interacted with the 1996 indicator as in equation (2). Column A is estimated on the women’s sample of Panel A of Table 11 and Column B on the men’s sample of Panel C, in both cases for the work-importance outcome. The first stage for the female-based measure on the men’s sample (Panel B) is not reported separately: the exposure and instrument vary only across the eleven WVS regions, so it uses the same regional values as Column A and differs only in sample weights. In both columns, the instrument is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables are the same as in Table 11. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors, clustered at the level of the region as in Table 11, are shown in parentheses.

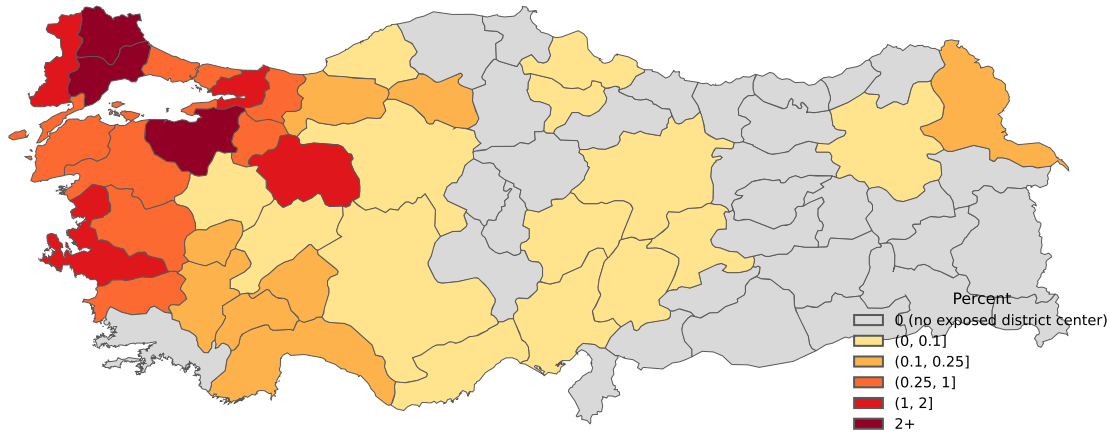
Table A20: The Impact of the 1989 Refugee Shock on Turkish Women’s Gender Norms and Attitudes—Excluding Respondents Born outside Türkiye

	Work is Important	Approves Men’s Priority in Jobs	Working Mother Child Bond	Autonomy Index
Panel A: World Value Surveys (1990 and 1996): Women				
1989 Refugees to Natives in 1990 among Women aged 18-39	7.929** (3.987)	-10.728*** (2.132)	-2.810 (3.824)	5.311** (2.259)
Observations R^2	815 0.092	811 0.119	850 0.054	865 0.042
Panel B: World Value Surveys (1990 and 1996): Men				
1989 Refugees to Natives in 1990 among Women aged 18-39	1.607 (1.141)	4.849** (2.007)	-7.348** (2.855)	-0.250 (2.357)
Observations R^2	829 0.052	785 0.133	836 0.085	843 0.048

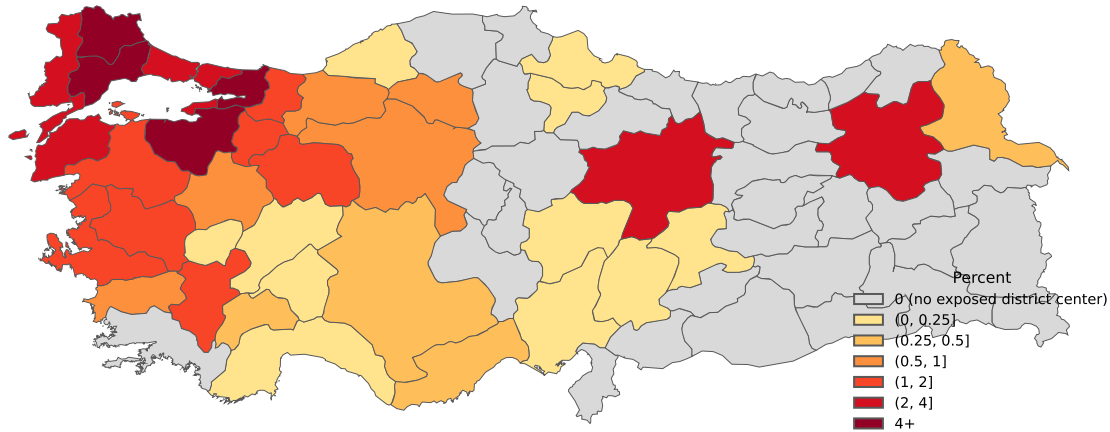
Notes: The sample includes men and women aged 18-39 from the 1990 and 1996 Turkish World Values Surveys who were born in Türkiye; respondents born outside Türkiye are excluded. Results are presented separately for women and men in Panels A and B, respectively. The 2SLS results from individual level regressions that control for age dummies, region, and year-fixed effects are reported. Ethnic Turks are defined as individuals who were born in Bulgaria. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) among women aged 18-39, interacted with an indicator for the 1996 survey wave, as in equation (2). In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the region.

Figure A1: Province-Level Heat Map of 1989 Refugee Exposure

Panel A. 1989 refugee-to-native ratio, population-weighted province mean (percent)



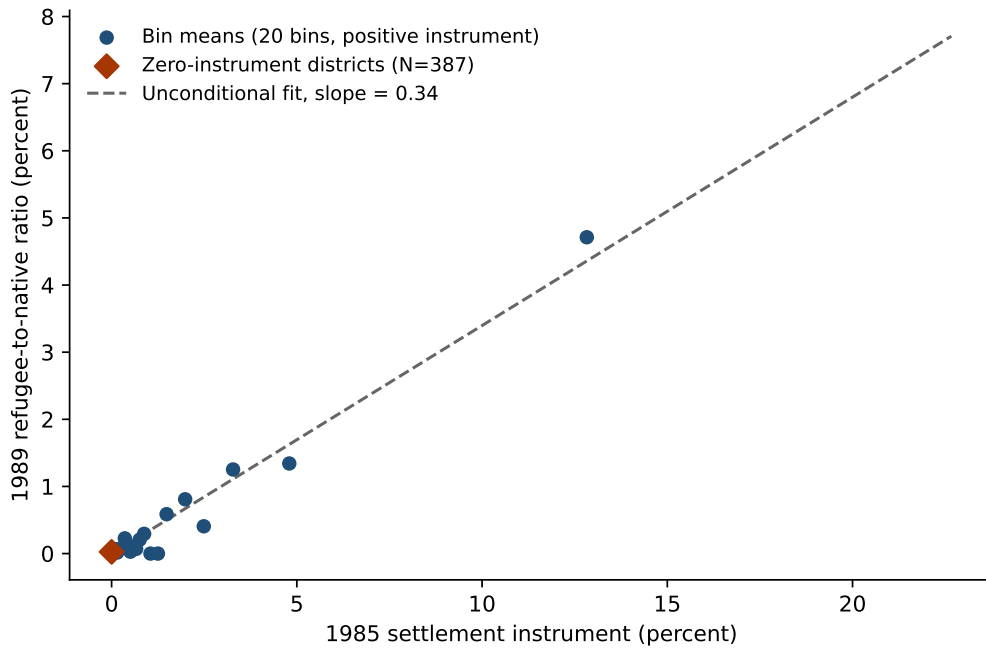
Panel B. Within-province range of district-center exposure (max minus min, percent)



Notes:

Both panels are computed from the district-center exposure data of the main analysis and are drawn on the 67-province 1985 administrative classification; post-1985 provinces are merged into their 1985 parents. Panel A shades each province by the population-weighted (1990 population) mean of the district-center refugee-to-native ratio, in percent. Panel B shades each province by the within-province range (maximum minus minimum) of district-center exposure, in percent. Provinces with no exposed district center (31 of 67) are shown in gray, and positive values are grouped into the discrete intervals shown in each legend, chosen finer at low values to reflect the skewed distribution of exposure.

Figure A2: First Stage as a Binned Scatter



Notes: Each circle is a bin mean over the 236 district centers with a positive instrument (20 quantile bins); the diamond is the mean over the 387 zero-instrument district centers. The dashed line is the unconditional least-squares fit across all 623 district centers (slope 0.34). The estimated first stage with the full control set is reported in Appendix Table A7.

Online Appendix B: Robustness of Inference

Table B1: Table 2 Outcomes with Province-Clustered Standard Errors

	Women			Men		
	Coef.	Robust	Cluster	Coef.	Robust	Cluster
Panel A: Full Sample						
Employment, OLS	0.459	[0.206]**	[0.276]	0.031	[0.230]	[0.227]
Employment, 2SLS	0.574	[0.267]**	[0.391]	0.185	[0.272]	[0.293]
LFP, OLS	0.545	[0.210]***	[0.216]**	0.164	[0.137]	[0.119]
LFP, 2SLS	0.713	[0.292]**	[0.311]**	0.248	[0.176]	[0.166]
Manufacturing, OLS	0.884	[0.173]***	[0.275]***	0.842	[0.370]**	[0.610]
Manufacturing, 2SLS	0.922	[0.246]***	[0.413]**	0.510	[0.374]	[0.635]
Panel B: Urban Areas						
Employment, OLS	0.590	[0.254]**	[0.290]**	0.281	[0.318]	[0.342]
Employment, 2SLS	0.616	[0.223]***	[0.267]**	0.255	[0.309]	[0.259]
LFP, OLS	0.665	[0.287]**	[0.285]**	0.200	[0.221]	[0.174]
LFP, 2SLS	0.739	[0.289]**	[0.222]***	0.228	[0.254]	[0.147]
Manufacturing, OLS	0.850	[0.210]***	[0.340]**	0.868	[0.502]*	[0.808]
Manufacturing, 2SLS	0.712	[0.213]***	[0.321]**	0.318	[0.425]	[0.641]

Notes: Coefficients are identical to Table 2; only the standard errors differ across columns. “Robust” reproduces the heteroskedasticity-robust standard errors of Table 2; “Cluster” reports standard errors clustered at the province level, the 67 provinces of the 1985 classification. Stars refer to the inference in the same column: *** p<0.01, ** p<0.05, * p<0.1.

Table B2: Table 3 Outcomes with Province-Clustered Standard Errors

	Employed		In the Labor Force		In Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
All district centers (N = 623)						
Ratio of 1989 Refugees to Natives	0.475*	0.656**	0.571***	0.811***	-0.102	0.379
in 1990 among Women aged 18–39	(0.245)	(0.269)	(0.178)	(0.271)	(0.366)	(0.303)
Urban (N = 225)						
Ratio of 1989 Refugees to Natives	0.366	0.474*	0.697**	0.820***	-0.058	0.465
in 1990 among Women aged 18–39	(0.461)	(0.284)	(0.293)	(0.248)	(0.444)	(0.283)
Urban, NUTS1 ≤ 9 (N = 176)						
Ratio of 1989 Refugees to Natives	0.504	0.553*	0.760**	0.902***	-0.041	0.513*
in 1990 among Women aged 18–39	(0.437)	(0.294)	(0.303)	(0.254)	(0.452)	(0.294)
Urban, NUTS1 ≤ 6 (N = 120)						
Ratio of 1989 Refugees to Natives	0.202	0.108	0.654*	0.751***	0.137	0.638**
in 1990 among Women aged 18–39	(0.457)	(0.260)	(0.355)	(0.285)	(0.386)	(0.261)

Notes: Specification, samples, controls, weights, and instrument are identical to Table 3. Standard errors clustered at the province level (1985 classification) in parentheses; the samples span 67 provinces (49 in the NUTS1 ≤ 9 sample and 29 in the NUTS1 ≤ 6 sample). *** p_i0.01, ** p_i0.05, * p_i0.10.

Table B3: Fertility (Table 6 Outcomes) with Province-Clustered Standard Errors

	All		NUTS1 ≤ 9		NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives	-0.995**	-1.138**	-0.930*	-1.077**	-0.830*	-0.942*
in 1990 among Women aged 18–39	(0.451)	(0.497)	(0.488)	(0.522)	(0.449)	(0.515)
Observations	623	623	465	465	289	289

Notes: The dependent variable is the 1990–2000 change in live births per woman aged 18–39; specification, controls, weights, and instrument follow the fertility table in the manuscript. The ratio is measured as a fraction, so a printed coefficient gives the effect of a one-unit (100 percentage point) increase; dividing by 100 yields the effect per percentage point (as in Table 6). Standard errors clustered at the province level (1985 classification) in parentheses; the samples span 67, 49, and 29 provinces. *** p $\leq$ 0.01, ** p $\leq$ 0.05, * p $\leq$ 0.10.

Table B4: Native Women's Schooling (Table 7 Outcomes) with Province-Clustered Standard Errors

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18–39	0.286 (0.522)	−0.142 (0.528)	0.563** (0.273)	0.484* (0.284)	0.101 (0.306)	−0.043 (0.358)	−0.161 (0.181)	0.001 (0.213)
Observations	623	623	623	623	622	622	622	622

Notes: Outcomes are the 1990–2000 changes in the share of native women completing each level, in the age brackets of the corresponding manuscript table; specification, controls, weights, and instrument are unchanged. Standard errors clustered at the province level (1985 classification; 67 clusters) in parentheses. *** p|0.01, ** p|0.05, * p|0.10.

Table B5: Table 2 Outcomes with Conley Spatial HAC Standard Errors

	Women				Men			
	Coef.	Robust	100 km	150 km	Coef.	Robust	100 km	150 km
Panel A: Full Sample								
Employment, OLS	0.459	[0.206]**	[0.247]*	[0.230]**	0.031	[0.230]	[0.207]	[0.190]
Employment, 2SLS	0.574	[0.267]**	[0.364]	[0.343]*	0.185	[0.272]	[0.305]	[0.298]
LFP, OLS	0.545	[0.210]***	[0.195]***	[0.177]***	0.164	[0.137]	[0.110]	[0.096]*
LFP, 2SLS	0.713	[0.292]**	[0.262]***	[0.218]***	0.248	[0.176]	[0.168]	[0.167]
Manufacturing, OLS	0.884	[0.173]***	[0.252]***	[0.248]***	0.842	[0.370]**	[0.560]	[0.537]
Manufacturing, 2SLS	0.922	[0.246]***	[0.415]**	[0.422]**	0.510	[0.374]	[0.647]	[0.660]
Panel B: Urban Areas								
Employment, OLS	0.590	[0.254]**	[0.220]***	[0.191]***	0.281	[0.318]	[0.273]	[0.260]
Employment, 2SLS	0.616	[0.223]***	[0.261]**	[0.224]***	0.255	[0.309]	[0.262]	[0.255]
LFP, OLS	0.665	[0.287]**	[0.222]***	[0.199]***	0.200	[0.221]	[0.135]	[0.118]*
LFP, 2SLS	0.739	[0.289]**	[0.218]***	[0.181]***	0.228	[0.254]	[0.133]*	[0.126]*
Manufacturing, OLS	0.850	[0.210]***	[0.263]***	[0.248]***	0.868	[0.502]*	[0.624]	[0.588]
Manufacturing, 2SLS	0.712	[0.213]***	[0.322]**	[0.319]**	0.318	[0.425]	[0.645]	[0.643]

Notes: Coefficients are identical to Table 2; only the standard errors differ across columns. “Robust” reproduces the heteroskedasticity-robust standard errors of Table 2. The Conley columns report spatial HAC standard errors computed with a Bartlett kernel at distance cutoffs of 100 and 150 km, with coordinates at the centroid of the 1985 province. The minimum distance between province centroids is 56 km, so within-province pairs receive full weight and the estimator nests province-level clustering; a 50 km cutoff captures no cross-province pairs and would duplicate the clustering in Table B1, which is why it is not reported. At 100 km, 37 cross-province centroid pairs enter, including the treated Thrace–Marmara cluster; at 150 km, 145 pairs enter and essentially all neighbouring provinces are connected. Stars refer to the inference in the same column: *** p<0.01, ** p<0.05, * p<0.1.

Table B6: Table 3 (Gender-Differenced) Outcomes with Conley Spatial HAC Standard Errors

	All	Urban	Urban, NUTS1 ≤ 9	Urban, NUTS1 ≤ 6
Employment, OLS	0.475	0.366	0.504	0.202
Conley 100 km	[0.240]**	[0.376]	[0.355]	[0.364]
Conley 150 km	[0.234]**	[0.358]	[0.335]	[0.336]
Employment, 2SLS	0.656	0.474	0.553	0.108
Conley 100 km	[0.250]***	[0.298]	[0.310]*	[0.260]
Conley 150 km	[0.260]**	[0.303]	[0.320]*	[0.250]
LFP, OLS	0.571	0.697	0.760	0.654
Conley 100 km	[0.173]***	[0.231]***	[0.233]***	[0.277]**
Conley 150 km	[0.174]***	[0.212]***	[0.213]***	[0.253]***
LFP, 2SLS	0.811	0.820	0.902	0.751
Conley 100 km	[0.247]***	[0.243]***	[0.246]***	[0.276]***
Conley 150 km	[0.236]***	[0.210]***	[0.221]***	[0.239]***
Manufacturing, OLS	-0.102	-0.058	-0.041	0.137
Conley 100 km	[0.337]	[0.341]	[0.345]	[0.291]
Conley 150 km	[0.308]	[0.306]	[0.315]	[0.281]
Manufacturing, 2SLS	0.379	0.465	0.513	0.638
Conley 100 km	[0.296]	[0.276]*	[0.282]*	[0.242]***
Conley 150 km	[0.300]	[0.273]*	[0.276]*	[0.242]***

Notes: Coefficients are identical to Table 3, panel by panel; the baseline heteroskedasticity-robust standard errors are those reported in Table 3. Each column is a Table 3 sample (623, 225, 176, and 120 district centers). The Conley rows report spatial HAC standard errors computed with a Bartlett kernel at 100 and 150 km cutoffs, with province-centroid coordinates. Stars refer to the inference in the same row: *** p_i0.01, ** p_i0.05, * p_i0.1.

Table B7: Fertility (Table 6 Outcomes) with Conley Spatial HAC Standard Errors

	Full Sample	NUTS1 ≤ 9	NUTS1 ≤ 6
Births per woman, OLS	-0.995	-0.930	-0.830
Conley 100 km	[0.432]**	[0.455]**	[0.406]**
Conley 150 km	[0.419]**	[0.432]**	[0.387]**
Births per woman, 2SLS	-1.138	-1.077	-0.942
Conley 100 km	[0.402]***	[0.422]**	[0.403]**
Conley 150 km	[0.370]***	[0.381]***	[0.363]***

Notes: Coefficients are identical to Table 6; the baseline heteroskedasticity-robust standard errors are those reported there. The ratio is measured as a fraction, so the coefficients give the effect of a one-unit (100 percentage point) increase; dividing by 100 yields the effect per percentage point. Each column is a Table 6 sample (623, 465, and 289 district centers; Table 6 applies no urban restriction). The Conley rows report spatial HAC standard errors computed with a Bartlett kernel at 100 and 150 km cutoffs, with province-centroid coordinates. Stars refer to the inference in the same row: *** p<0.01, ** p<0.05, * p<0.1.

Table B8: Native Women's Schooling (Table 7 Outcomes) with Conley Spatial HAC Standard Errors

	Primary School	Middle School	High School	College
Completion, OLS	0.286	0.563	0.101	−0.161
Conley 100 km	[0.747]	[0.252]**	[0.296]	[0.166]
Conley 150 km	[0.720]	[0.227]**	[0.272]	[0.153]
Completion, 2SLS	−0.142	0.484	−0.043	0.001
Conley 100 km	[0.762]	[0.286]*	[0.380]	[0.199]
Conley 150 km	[0.756]	[0.274]*	[0.357]	[0.186]

Notes: Coefficients are identical to Table 7; the baseline heteroskedasticity-robust standard errors are those reported there. The sample is the Table 7 full sample (623 district centers for primary and middle school; 622 for high school and college, where one district center lacks the age bracket). The Conley rows report spatial HAC standard errors computed with a Bartlett kernel at 100 and 150 km cutoffs, with province-centroid coordinates. Stars refer to the inference in the same row: *** p<0.01, ** p<0.05, * p<0.1.

Online Appendix C: Identification Checks

Table C1: Placebo Test on the Gendered Impact of the 1989 Refugee Shock on Labor Market Outcomes

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.518** (0.230)	0.310 (0.282)	0.280 (0.241)	0.103 (0.283)	-0.233 (0.231)	-0.377 (0.287)
Observations	623	623	623	623	623	623
R^2	0.218	0.217	0.204	0.204	0.398	0.397
Panel B: Urban Areas						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.230 (0.328)	0.269 (0.258)	-0.033 (0.315)	-0.109 (0.249)	-0.164 (0.330)	-0.190 (0.311)
Observations	225	225	225	225	225	225
R^2	0.454	0.454	0.477	0.477	0.593	0.593

Notes: i) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers in Panel A and 225 province and district centers with a population above 20,000 in Panel B.

ii) The dependent variable is the difference between native women and men in the change between 1985 and 1990 in the share of: a) employed b) in the labor market, and c) employed in manufacturing. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C2: Placebo Check for Number of Live Births per Woman

	Full Sample		NUTS1 ≤ 9		NUTS1 ≤ 6	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Using 40- to 59-year-old Native Women						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.456 (1.155)	0.522 (1.515)	0.338 (1.103)	0.590 (1.497)	0.560 (1.174)	0.613 (1.556)
Observations	623	623	465	465	289	289
R^2	0.483	0.483	0.541	0.541	0.639	0.639
Panel B: Using the 1985 and 1990 Censuses						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.142 (0.851)	1.200 (1.049)	0.446 (0.848)	1.546 (1.033)	0.640 (0.856)	1.772* (1.025)
Observations	623	623	465	465	289	289
R^2	0.353	0.352	0.345	0.343	0.352	0.348

Notes: i) The micro-level data come from the 1990 and 2000 Turkish censuses in Panel A and 1985 and 1990 Turkish censuses in Panel B. Ethnic Turks are defined as individuals who were born in Bulgaria. In Panel A the sample is restricted to 40-to 59-year-old women who are native Turkish and in Panel B 18-to 39-year-old women who are native Turkish. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

ii) The dependent variable is the number of live births per woman. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39) and shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates), as well as log population and province fixed effects; in Panel A, the age-group controls are the analogous brackets for the older cohort (40-44, 45-49, 50-54, 55-59, 60-64), and the age shares, education shares, and weights are computed within the 40- to 59-year-old sample. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. The ratio is measured as a fraction, so a printed coefficient gives the effect of a one-unit (100 percentage point) increase; dividing by 100 yields the effect per percentage point (as in Table 6). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C3: Placebo Checks for Native Women's Schooling Outcomes

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.063 (0.355)	-0.010 (0.457)	0.085 (0.260)	0.132 (0.288)	-0.603* (0.323)	-0.488 (0.416)	0.038 (0.131)	0.204 (0.132)
Observations	622	622	623	623	622	622	622	622
R^2	0.255	0.255	0.114	0.114	0.137	0.137	0.228	0.227

Notes: i) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to 14- to 19-year-olds in Columns (1) and (2), 17- to 22-year-olds in Columns (3) and (4), 20- to 25-year-olds in Columns (5) and (6), and 25- to 30-year-olds in Columns (7) and (8). Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985.

ii) The dependent variable is the change between 1985 and 1990 in the share of native women in each district who are: a) primary school graduates in Columns (1) and (2), b) middle school graduates in Columns (3) and (4), c) high school graduates in Columns (5) and (6), and d) college graduates in Columns (7) and (8). The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C4: Placebo Check on the Impact on Labor Market Outcomes: Without Province Dummies

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Full Sample						
Panel A: Impact on Native Turkish Women aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.126 (0.105)	0.074 (0.102)	0.095 (0.106)	0.082 (0.108)	0.228*** (0.084)	0.226*** (0.069))
Observations	623	623	623	623	623	623
R^2	0.053	0.053	0.035	0.035	0.089	0.089
Panel B: Impact on Native Turkish Men aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.157* (0.093)	0.246** (0.114)	0.173** (0.068)	0.205*** (0.068)	0.655*** (0.136)	0.812*** (0.151)
Observations	623	623	623	623	623	623
R^2	0.139	0.138	0.115	0.115	0.277	0.274
Urban Areas						
Panel C: Impact on Native Turkish Women aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.079 (0.105)	0.112 (0.091)	0.077 (0.131)	0.161 (0.103)	0.156* (0.083)	0.161** (0.071)
Observations	225	225	225	225	225	225
R^2	0.089	0.089	0.067	0.066	0.133	0.133
Panel D: Impact on Native Turkish Men aged 18–39						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.154 (0.110)	0.225* (0.118)	0.218*** (0.072)	0.232*** (0.071)	0.471*** (0.176)	0.577*** (0.147)
Observations	225	225	225	225	225	225
R^2	0.243	0.243	0.185	0.185	0.325	0.323

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. The sample is further restricted to women in panels (A) and (C) and to men in panels (B) and (D). Using the individual level data, the unit of analysis is reduced to 623 province and district centers in Panels A and B and 225 in Panels C and D according to the administrative classification in 1985. b) The dependent variable in panels A and C (B and D) is the change between 1985 and 1990 in the share of native women (men) in each district who are: a) employed b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C5: Placebo Check on the Gender-Specific Impact of the 1989 Refugee Shock on Labor Market Outcomes: Excluding Province Dummies

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.131 (0.098)	0.053 (0.108)	-0.009 (0.113)	0.014 (0.118)	-0.483*** (0.116)	-0.601*** (0.159)
Observations	623	623	623	623	623	623
R^2	0.066	0.065	0.040	0.040	0.207	0.205
Panel B: Urban Areas						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.004 (0.123)	0.007 (0.121)	-0.153 (0.151)	-0.039 (0.137)	-0.347** (0.160)	-0.409** (0.168)
Observations	225	225	225	225	225	225
R^2	0.137	0.137	0.121	0.120	0.273	0.272

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The outcomes are presented for the 18- to 39-year-old native Turkish respondents. Using the individual-level data, the unit of analysis is reduced to 623 province and district centers in Panel A and 225 province and district centers with a population above 20,000. b) The dependent variable is the change between 1985 and 1990 in the difference between the share of native women and the share of native men who are: a) employed b) in the labor force, and c) employed in manufacturing. c) The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C6: Placebo Check for Number of Live Births: Excluding Province Dummies

	Full Sample		NUTS1 ≤ 9		NUTS1 ≤ 6		Urban Areas	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Using 40–59-Year-Old Native Women								
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	2.985** (1.250)	2.345** (1.133)	1.052 (0.926)	0.180 (0.811)	0.724 (0.899)	-0.231 (0.791)	3.253** (1.480)	2.403* (1.227)
Observations	623	623	465	465	289	289	225	225
R^2	0.142	0.142	0.337	0.336	0.455	0.453	0.233	0.232
Panel B: Using the 1985 and 1990 Censuses								
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	2.738* (1.620)	3.383** (1.453)	2.502 (1.747)	3.131* (1.608)	2.731 (1.755)	3.592** (1.485)	3.366** (1.596)	4.270*** (1.188)
Observations	623	623	465	465	289	289	225	225
R^2	0.174	0.174	0.215	0.215	0.217	0.216	0.252	0.251

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses in Panel A and 1985 and 1990 Turkish censuses in Panel B. Ethnic Turks are defined as individuals who were born in Bulgaria. In Panel A the sample is restricted to 40-to 59-year-old women who are native Turkish and in Panel B 18-to 39-year-old women who are native Turkish. Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. In each panel, we make further restrictions as indicated in panel headings. b) The dependent variable is the number of live births per woman. The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, as well as log population and province fixed effects. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C7: Placebo Checks for Native Women's Schooling Outcomes: Excluding Province Dummies

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	-0.721*** (0.237)	-0.990*** (0.364)	-0.011 (0.144)	0.046 (0.113)	-0.338 (0.219)	-0.371 (0.243)	-0.050 (0.062)	0.023 (0.058)
Observations	622	622	623	623	622	622	622	622
R^2	0.011	0.009	0.013	0.013	0.013	0.013	0.059	0.058

Notes: a) The micro-level data come from the 1985 and 1990 Turkish censuses. Ethnic Turks are defined as individuals who were born in Bulgaria. The sample is restricted to 14- to 19-year-olds in Columns (1) and (2), 17- to 22-year-olds in Columns (3) and (4), 20- to 25-year-olds in Columns (5) and (6), and 25- to 30-year-olds in Columns (7) and (8). Using the individual level data, the unit of analysis is reduced to 623 province and district centers according to the administrative classification in 1985. b) The dependent variable is the change between 1985 and 1990 in the share of native women in each district who are: a) primary school graduates in Columns (1) and (2), b) middle school graduates in Columns (3) and (4), c) high school graduates in Columns (5) and (6), and d) college graduates in Columns (7) and (8). c) The key variable of interest is the ratio of 1989 ethnic Turkish refugees (individuals who were in Bulgaria in 1985 but in Türkiye in 1990) to natives (individuals who are neither 1989 ethnic Turkish refugees nor earlier ethnic Turkish migrants) in the sample of 18 to 39-year-old women. In the 2SLS regressions, the instrument used is the ratio of ethnic Turks (aged 18 and above, residing in Türkiye as of 1985, but born in Bulgaria) to the native adult population (aged 18 and above) in the 1985 Census. The control variables include the shares for five age groups (18-19, 20-24, 25-29, 30-34, 35-39), shares for six education groups (illiterate, less than primary, primary, junior high, high school, university graduates) and shares for 9 sectors of employment in the labor force, and log population. District-level observations are weighted by $1/(1/\text{pop}(1990)+1/\text{pop}(2000))$. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C8: Robustness to Controlling for Internal Migration: Gender-Differenced Labor Market Outcomes (Women - Men)

	Employed		In the Labor Force		In the Manufacturing	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A: Full Sample						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.696*** (0.225)	0.978*** (0.267)	0.605*** (0.187)	0.809*** (0.238)	-0.145 (0.265)	0.324 (0.276)
Change in Share of Movers, 1990-2000	-0.312*** (0.065)	-0.320*** (0.061)	-0.045 (0.059)	-0.050 (0.054)	0.036 (0.042)	0.023 (0.040)
Observations	623	623	623	623	623	623
R^2	0.471	0.471	0.491	0.491	0.403	0.395
Panel B: Urban Areas (Population above 20,000)						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.546 (0.332)	0.714** (0.284)	0.646** (0.289)	0.801*** (0.263)	-0.102 (0.336)	0.418 (0.273)
Change in Share of Movers, 1990-2000	-0.249** (0.104)	-0.255*** (0.081)	-0.039 (0.094)	-0.045 (0.074)	0.028 (0.094)	0.007 (0.074)
Observations	225	225	225	225	225	225
R^2	0.669	0.668	0.657	0.656	0.561	0.552
Panel C: Urban Areas and NUTS1 ≤ 9 (Excluding Eastern Türkiye)						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.624* (0.361)	0.739** (0.319)	0.682** (0.308)	0.866*** (0.280)	-0.070 (0.349)	0.491* (0.287)
Change in Share of Movers, 1990-2000	-0.206 (0.129)	-0.211** (0.101)	-0.027 (0.114)	-0.035 (0.089)	0.007 (0.115)	-0.019 (0.090)
Observations	176	176	176	176	176	176
R^2	0.579	0.579	0.644	0.643	0.566	0.555
Panel D: Urban Areas and NUTS1 ≤ 6 (Western half of Türkiye)						
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18-39	0.290 (0.413)	0.246 (0.374)	0.593* (0.356)	0.735** (0.335)	0.110 (0.363)	0.610* (0.317)
Change in Share of Movers, 1990-2000	-0.124 (0.167)	-0.122 (0.130)	-0.030 (0.143)	-0.038 (0.111)	0.006 (0.138)	-0.019 (0.106)
Observations	120	120	120	120	120	120
R^2	0.595	0.595	0.660	0.659	0.579	0.568

Notes: The specification, samples, controls, weights, and standard errors are identical to those in Table 3, with one addition: each regression controls for the change between 1990 and 2000 in the share of movers (individuals who did not reside in the same district center five years earlier). We note that this control is measured after the refugee shock and may itself respond to it, so Table 3 remains our preferred specification. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. Heteroskedasticity-robust standard errors are shown in parentheses.

Table C9: Comparison-Group and Binary-Treatment Exercises: Labor Market and Fertility Outcomes

	Employed		In the Labor Force		In Manufacturing		Fertility	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A. Provinces with positive refugee settlement								
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18–39	0.439 (0.295)	0.632** (0.308)	0.419* (0.224)	0.645** (0.260)	−0.018 (0.276)	0.449 (0.286)	−0.873 (0.566)	−1.118** (0.544)
Panel B. Binary treatment, any exposure								
Any 1989 refugee exposure	−0.010 (0.010)	0.053 (0.066)	−0.006 (0.008)	0.094 (0.062)	−0.006 (0.007)	0.044 (0.039)	−0.030 (0.022)	0.006 (0.176)
Panel C. Binary treatment, high exposure								
High 1989 refugee exposure	0.005 (0.011)	0.165** (0.064)	0.007 (0.011)	0.124** (0.057)	−0.008 (0.010)	0.043 (0.036)	−0.057*** (0.019)	−0.129 (0.120)

Notes: The first three outcomes are the differences between native women and men in the 1990–2000 change in each share; fertility is the 1990–2000 change in live births per woman aged 18–39. Panel A instruments the continuous ratio with the 1985 instrument within positive-settlement provinces ($N = 370$; first-stage $F = 109.3$ for the labor outcomes and 104.6 for fertility). Panels B and C instrument the exposure indicators with the analogous 1985 presence indicators ($N = 623$; first-stage $F = 7.6$ and 10.7 for the labor outcomes, 6.5 and 11.3 for fertility). Controls, weights, and samples follow the corresponding manuscript tables. The continuous ratio in Panel A is measured as a fraction, so its fertility coefficient gives the effect of a one-unit (100 percentage point) increase and dividing by 100 yields the effect per percentage point; the share outcomes read directly as percentage-point effects per percentage point (as in Table 6). Heteroskedasticity-robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table C10: Comparison-Group and Binary-Treatment Exercises: Schooling Outcomes

	Primary School		Middle School		High School		College	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
Panel A. Provinces with positive refugee settlement								
Ratio of 1989 Refugees to Natives in 1990 among Women aged 18–39	0.268 (0.529)	−0.158 (0.537)	0.496** (0.232)	0.381 (0.298)	0.067 (0.256)	−0.071 (0.298)	−0.155 (0.160)	0.007 (0.204)
Panel B. Binary treatment, any exposure								
Any 1989 refugee exposure	−0.008 (0.013)	0.056 (0.123)	0.005 (0.007)	−0.083 (0.067)	0.001 (0.011)	−0.138 (0.095)	0.006 (0.005)	0.061 (0.043)
Panel C. Binary treatment, high exposure								
High 1989 refugee exposure	0.013 (0.021)	0.005 (0.077)	0.015 (0.011)	0.105* (0.057)	−0.012 (0.012)	−0.080 (0.066)	0.001 (0.008)	0.013 (0.028)

Notes: Outcomes are the 1990–2000 changes in the share of native women completing each level, in the age brackets of the corresponding manuscript table. Panels are as in Appendix Table C9, with the same instruments. First-stage F statistics range from 97.7 to 104.3 across levels in Panel A, from 3.2 to 5.8 in Panel B, and from 9.4 to 11.1 in Panel C. Panel A uses 370 district centers (369 for high school and college); Panels B and C use 623 (622). Heteroskedasticity-robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.