# Breaking Barriers via Refugees: Cultural Transmission and Women's Economic Empowerment*

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**Abstract**

This paper provides causal evidence on the horizontal cultural transmission of gender norms and its impact on women's long-term socio-economic outcomes. We use the forced migration of ethnic Turks from Bulgaria to Türkiye after the fall of the Iron Curtain as a natural experiment. Despite a shared linguistic and religious heritage, ethnic Turkish women from Bulgaria exhibited more progressive gender norms and stronger labor market attachment than native Turkish women, who traditionally held more conservative roles. We examine whether the influx of these progressive women influenced native Turkish women's labor market participation, sector of employment, educational attainment, and fertility behavior over the following decade. Using difference-in-differences analyses, instrumenting refugee settlement patterns with those of earlier refugees, we find a significant increase in native Turkish women's labor market participation, particularly in male-dominated manufacturing sectors where refugee women were concentrated. These effects are gender-specific, with no parallel changes among native men. Additionally, native women's fertility rates declined, while the share attaining middle school education increased a decade later, closely aligning with refugee women. Our findings suggest that exposure to progressive gender norms spurred a cultural shift, reshaping native women's roles both at work and at home.

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# 1 Introduction

Over the past century, increased education, significant technological advancements, and family-friendly policies have greatly increased labor force participation among married women and women with children (Goldin, 2006; Greenwood et al., 2005; Olivetti and Petrongolo, 2017). Yet, in regions such as the Middle East and South Asia, female labor market participation remains low despite strides in female emancipation and broader economic progress (Bertrand, 2020; Giuliano, 2020). These persistent disparities in female labor market engagement are largely shaped by cultural and gender norms, which influence both women's employment choices and their identities concerning work (Giuliano, 2020; Jayachandran, 2015; Akerlof and Kranton, 2000). Despite this, the role of cultural transmission and social learning in shaping gender norms and women's labor market and fertility behavior and education remains underexplored, particularly in traditionally conservative societies where women are often confined to domestic roles (Fernandez, 2013; Alesina et al., 2013).

This paper provides causal evidence on the horizontal cultural transmission of gender norms and its impact on women's labor market outcomes, fertility behavior, and educational attainment.[1] Specifically, we explore the forced mass influx of ethnic Turkish refugees from Bulgaria to Türkiye in 1989 as a natural experiment to investigate how horizontal cultural transmission of gender norms and attitudes between neighbors and friends influences women's socioeconomic outcomes a decade later. Following the fall of the Iron Curtain, nearly half a million ethnic Turks were forced to migrate to Türkiye by the Bulgarian government, leading to one of the most rapid demographic transitions in late 20th-century Europe (Vasileva, 1992; Neuburger, 2004).

Ethnic Turkish refugees, sharing linguistic, religious, and ethnic heritage with the local population, were perceived as natives in Türkiye. However, having lived in Bulgaria for more than five centuries, these immigrant women brought deeply ingrained progressive gender norms, a legacy of Bulgaria's socialist period. During this era, women's participation in the labor force was not just encouraged; it was mandatory, reflecting broader industrial ambitions and ideals of gen-

[1] In their seminal work, Bisin and Verdier (2001) identify three forms of cultural transmission: vertical, horizontal, and oblique. Vertical transmission refers to the intergenerational transmission of values and beliefs from parents to children. Horizontal transmission occurs among peers, while oblique transmission focuses on the influence of role models such as teachers outside the family and peer group (Giuliano, 2020).

der equality. This experience contrasted sharply with Türkiye's traditional 'male breadwinner' model, which confined women to domestic and caregiving roles.

The impact of these divergent gender norms between refugees and native Turkish women was reflected in the significant differences in their labor force participation, fertility rates, educational attainment, employment in male-dominated industries, and attitudes toward gender roles. For instance, in our primary empirical analysis sample of the 1990 Turkish census in this study, 72% of ethnic Turkish women participated in the labor force compared to just 20% of native Turkish women. Similarly, 66% of the ethnic Turkish women worked in the manufacturing sector, a sharp contrast to only 23% of their native counterparts.[2] Thereby, this sudden influx of ethnic Turks into Türkiye precipitated an exogenous shock to the social and economic environments where native Turkish women socialize, providing a unique opportunity to study the malleability of gender norms and their effects on women's economic behavior in the long run (Fogli and Veldkamp, 2011; Fernández and Fogli, 2009; Alesina et al., 2013).

In our main analysis, we use data from the 1990 and 2000 censuses of Türkiye. To identify the impact of the 1989 refugee shock, we use a difference-in-differences (DiD) estimation across the 623 district centers in Türkiye. We examine the causal association between changes in the labor market and socioeconomic outcomes of native women (men) between 1990 and 2000 and the settlement patterns of 1989 refugees. To address potential biases in the settlement choices of the 1989 refugees, we employ an instrumental-variable strategy based on the population share of earlier ethnic Turks who arrived from Bulgaria before 1985 in several waves throughout the 20th century. The government settled these earlier waves of ethnic Turks and supported them through state-led housing and land allocation campaigns. Our data show that recent refugees were significantly more likely to settle in districts with a higher concentration of earlier Bulgarian migrants. In line with state-led settlement programs, we also find that the concentration of earlier Bulgarian migrants does not correlate with internal migration flows or labor market dynamics, fertility behavior, and educational attainment of the native population. Moreover, most of these migrants remained in their initial settlement provinces, as confirmed by a strong correlation

[2]The World Value Surveys from the early 1990s also show that while only 29% of Bulgarian women felt that men have greater employment rights, 57% of Turkish women held this belief.

between settlement and residence in the 1985 census.

A critical feature of our empirical analysis is that our data at the district level, which enables us to explore variation in Bulgarian refugee concentration across districts within the same province after accounting for province-level fixed effects. This approach also accounts for differential time trends across provinces in our time-differenced specification. This is empirically possible because there is significant variation in the earlier refugee density across districts of a given province (our instrument) due to the heavy involvement of the Turkish government in their settlement patterns. For instance, in the Tekirdağ province of northwestern Turkey, which is about 6,000 km square, the fraction of earlier refugees to natives is 0.18 in one district center, between 0.1 and 0.15 in two district centers, but less than 0.02 in four districts (out of the 9 district centers). Therefore, we compare highly similar district centers except for the refugee density, especially when we further restrict the sample by population size.

We find that the mass influx of ethnic Turkish women significantly improved the labor market attachment of native women a decade later both in absolute terms and relative to native men residing in the same districts. Specifically, our results indicate that when the refugee-to-native ratio increases by one percentage point, the employment rate of native women increases by 0.6 percentage points and their labor force participation rate by 0.7 percentage points. Importantly, the effects on employment are much larger in the tradable male-dominated manufacturing sector, where the majority of ethnic Turkish women were employed upon their arrival. In addition, the positive employment effects are also stronger for native women with educational attainment similar to that of refugees, namely those with middle or high school degrees; in fact, almost 85% of refugee women have these degrees. These positive labor market effects among native women contrast with the expected labor supply effects of mass migration, which would typically increase competition and potentially reduce demand for native women.

In contrast, our analysis reveals that the concentration of ethnic Turkish women has no discernible effect on the employment outcomes or the sectoral distribution of native men a decade later. We confirm this gendered impact of the 1989 refugee shock by conducting a triple-difference analysis where we take differences across both time and gender dimensions. Our

analysis of other socioeconomic outcomes indicates a significant decline in fertility rates among native Turkish women a decade later, bringing their fertility levels closer to those of refugee women. We also find that, a decade later, the proportion of native women with middle school education increased in districts with a higher concentration of refugees. Finally, the robustness of our findings is further supported by placebo tests conducted for each outcome of interest using the pre-influx census data from 1985 and 1990. These placebo tests yield economically and statistically insignificant estimates, providing supportive evidence that pre-migration trends in outcomes do not explain our results.

These findings, particularly the gender-specific effects on female labor market outcomes and fertility, suggest that social dynamics beyond traditional labor market mechanisms are at play. We posit that factors such as social learning, peer influence, and the formation of new gender norms are potential mediators explaining our results. To explore these underlying mechanisms, we turn to data from the World Value Surveys conducted in the 1990s. Our results indicate that native women in districts with a higher concentration of ethnic Turkish women tend to adopt more progressive attitudes towards female employment and autonomy within a decade. Specifically, they place greater importance on work as a part of life and are less likely to support male priority during times of scarcity. Moreover, native women in these districts report higher autonomy scores. These findings suggest that the transmission of gender norms, facilitated by social learning between groups that share a common language and religion but differ in gender norms, plays an important role in shaping the observed labor market outcomes, fertility and educational attainment of native women.

The rise in native women's employment levels could have other potential explanations. First, the refugee influx may have stimulated overall production and job creation through increased local demand in the product market; however, such effects are generally less evident in tradable sectors such as manufacturing. Furthermore, we find no effects on the labor market outcomes of native men in the same districts. Therefore, it is unlikely that the rise in native women's employment, particularly in manufacturing, is driven by an increase in labor demand or product market demand. Second, refugees, who are on average more educated than natives and have

significant labor market experience in sectors such as manufacturing, could enhance productivity. Moreover, if productivity gains were more pronounced in traditionally female-dominated sectors, such as textiles, we would expect a stronger positive impact on native women's employment through the expansion of these sectors in districts with a higher concentration of refugee women. However, when comparing the aggregate growth in employment across different manufacturing sub-sectors, we find no evidence of higher growth in traditionally female sectors. Additionally, the arrival of ethnic Turks in a certain location might have discouraged other potential migrants from relocating to this region; however, we show that changing internal migration patterns due to the arrival of refugees is unlikely to explain our results. Finally, refugee women providing childcare services could create employment opportunities for native women (Cortés and Tessada, 2011); however, this is unlikely in this context, as 66% of employed refugee women work in manufacturing and, on average, are much more educated than native women.

## 2 Related Literature

Our paper broadly relates to studies on social learning across generations, peers, and diverse groups sharing common labor market environments. Prior research shows that exposure to diverse gender norms through migration, media, or policy changes can transform deep-seated societal attitudes. These shifts often lead to more equitable gender norms and increased female labor force participation as individuals revise their beliefs in response to new information, thereby challenging traditional societal norms through local social learning (Fernández, Fogli, and Olivetti 2004; Fernández and Fogli, 2009; Fogli and Veldkamp, 2011; Jensen and Oster, 2009). Our work extends this body of research by examining a unique exogenous shock in cultural norms brought about by the sudden influx of ethnic Turks from Bulgaria to Türkiye, who introduced more progressive gender norms than those of the local population. This historical episode presents a particularly compelling empirical setting to estimate the causal impact of these shifting norms via horizontal cultural transmission on women's socioeconomic outcomes a decade later.

Our study also closely relates to a growing body of research investigating the horizontal

transmission of gender norms and attitudes amidst exogenous population movements. Miho et al. (2024) examine the horizontal transmission of cultural norms between groups during Stalin's ethnicity-based deportations in WWII, finding that regions with a higher influx of Protestant expellees, who held more egalitarian gender norms compared to their Muslim counterparts, now exhibit stronger female labor market attachment, higher rates of female business leadership, and higher educational achievements for both genders. Similarly, Boelmann et al. *(forthcoming)* and Jessen et al. (2024) analyze the effects of East German women migrating to West Germany after reunification. Both studies find that the migration of more progressive East German women to West Germany after reunification significantly improved work hours, maternal employment, and shortened parental leave duration among West German women. Further, related to our study, the literature on horizontal cultural transmission suggests that cultural transmission between groups is likely higher when the groups are culturally similar (Miho et al., 2024; Giuliano and Tabellini, 2020). This increased transmission occurs because culturally similar groups tend to have greater inter-group trust and more frequent communications and interactions (Guiso, Sapienza, and Zingales, 2009).[3]

Our first contribution to this literature is substantive. Our analysis shows that exposure to progressive gender norms through migration can influence labor market participation, fertility behavior, and educational attainment, even in a socially conservative country with low female labor force participation. Despite economic progress and improved female education, areas such as the Middle East and South Asia remain outliers with the lowest female labor force participation rates globally due to persistent gender norms that favor male employment, discourage mothers from working, and reinforce traditional domestic roles for women (Bertrand, 2020; Jayachandran, 2021). Consequently, economic opportunities for women are limited, which restricts both individual economic mobility and overall economic growth. Our findings indicate that social networks, peer influence, and exposure to alternative gender norms can gradually shift attitudes toward women's work and increase female employment, offering a sustainable pathway for change when the persistence of traditional gender norms limits the effectiveness of direct

[3]Other research on horizontal cultural transmission includes studies by Clingingsmith, Khwaja, and Kremer (2009), Bisin and Verdier (2010), Spolaore and Wacziarg (2013), Alesina and Giuliano (2015), Tuccio and Wahba (2018), Giuliano and Tabellini (2020), and Giesing et al. (2024).

economic interventions.

Another key finding of this study—that is different from the previous studies exploring the horizontal transmission of gender norms—is that the impact on native women's employment is particularly pronounced in the manufacturing sector, where 66% of ethnic Turkish immigrant women found work upon arrival. This is notable given that manufacturing has traditionally been male-dominated. The concentration of employment gains in this sector—rather than in traditionally female-dominated industries—suggests that cultural transmission not only facilitated greater labor force participation but also enabled entry into economic spaces where women were previously underrepresented. While this result may seem surprising at first, it is important to note that the shared language and religion between ethnic Turkish and native Turkish women foster trust, social interaction, and cultural exchange. This, in turn, makes it easier for native women to observe, internalize, and ultimately adopt new labor market behaviors (Miho et al., 2024; Giuliano and Tabellini, 2020). Further supporting this, we find that native women with educational attainment similar to that of refugees were the most responsive, suggesting that cultural transmission is strongest when skill levels align, facilitating entry into sectors where refugee women were already employed. Our finding that the impact is particularly prevalent in the manufacturing sector is also critical from a methodological point as the rise in native women's employment in this sector cannot be explained by an increase in local product market demand.

Compared to the previous literature, our identification framework has several strong features. While certain individual papers share some of these features, the combination of these features in our study make a strong case for internal validity. First, we examine the impact of a rapid and mass forced migration episode, which occurred over just three months. Second, we use a plausibly exogenous instrumental variable to account for the potential endogeneity in the settlement patterns of the 1989 refugees. Third, we use gender- and time-differenced outcomes (triple DiD), as well as time-differenced outcomes (DiD), so that we can better identify the gendered impact of the refugee shock. Fourth, we conduct several placebo checks that support our identification assumptions. Fifth, we examine cultural transmission about 11 years after refugee shock, which

is shorter than most similar studies, allowing us to bypass concerns about other confounding events occurring in longer periods. Finally, our findings rule out other potential explanations, such as gender-specific labor demand shifts and internal migration, for the observed changes in native women's socioeconomic outcomes.

Our study also contributes to the literature on the economic effects of mass cross-border migration by estimating the long-term impact of cultural transmission on native women's labor market, fertility, and education outcomes, an aspect often overlooked in migration studies that primarily focus on labor market effects. While prior research finds mixed evidence on how migration impacts native employment (Card, 1990; Aydemir and Borjas, 2007; Ottaviano and Peri, 2012), our study shifts the focus from labor market competition to social learning mechanisms. Unlike Aydemir and Kirdar (2017) who document no immediate effects of the 1989 migration shock on native male unemployment, we find that exposure to refugee women led to higher labor market participation among native women a decade later, particularly in male-dominated manufacturing sectors. This suggests that cultural diffusion, rather than direct economic displacement, played a key role in shaping native women's long-term labor market outcomes. Furthermore, by examining fertility and education effects, our study extends the migration literature beyond employment, showing that cultural transmission influences broader socioeconomic behaviors. These findings underscore the importance of social integration and peer influence in transforming gender norms—processes that require time, sustained interaction, and socialization, particularly in settings with historically low female labor force participation. By focusing on native women's outcomes a decade after the arrival of ethnic Turkish women, our analysis captures the gradual adoption of new gender norms and labor market behaviors.

# 3 Background on Migration of Ethnic Turks from Bulgaria to Türkiye and Gender Norms

## 3.1 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 upheavals, led to substantial migrations from the region to Türkiye (Karpat, 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 to the situation, the "Close Relative Migration Agreement" was instituted in 1968, facilitating the migration of 116,521 ethnic Turks to Türkiye (Doganay, 1996). However, starting in the early 1970s, Bulgaria's communist regime implemented strict emigration controls, halting further migration for nearly two decades.

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, the situation escalated, resulting in the forced transportation 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).[4]

Historically, state policies have significantly shaped the 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% of these migrants, which rose to 100% during the 1950-1951 period (Geray, 1962). The 1968 wave, aimed at 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 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. 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.

### 3.2 Gender Norms in Bulgaria and Türkiye

Turkish women in both Bulgaria and Anatolia shared common institutions until the dissolution of the Ottoman Empire in 1922, and they maintained close linguistic and religious ties. However, the influence of Bulgaria's socialist era from 1944 to 1989 shaped distinctly progressive gender norms among women. Under Bulgaria's socialist regime, women were mandated to participate in the labor force, supporting industrial and gender parity goals. By the 1980s, this policy led to an 87% female labor force participation rate, among the highest globally, bolstered by significant advancements in women's education, especially in STEM fields, and comprehensive legislative support including improved 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, during the same period, Türkiye adhered to a "male

[4]The 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 60% increase in the Bulgarian-born population in Türkiye (Kirisci, 2000).

breadwinner" model, where men were the primary earners and women primarily engaged in domestic and caregiving duties.

The transition to a socialist system in Bulgaria brought changes to the demographic and cultural characteristics of its ethnic minorities. Höpken (1997) notes that during the post-Balkan 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. Thus, the women who emigrated from the country between the 1930s and 1950s had only a few years of religious education and were mainly homemakers, while those who worked were primarily engaged in unpaid agricultural labor. In contrast, adult working-age women who migrated during the 1989 wave had access to public education while growing up and benefited from abundant employment opportunities across various sectors in Bulgaria (Parla, 1990). This shift stemmed from the socialist policies implemented by the communist government beginning in the late 1940s and early 1950s, which intensified in the 1960s as the Bulgarian Communist Party enforced repressive measures to "integrate" minorities, aiming to create a unified socialist citizenry and a homogeneous society (Zhelyazkova, 1998). Among this later generation of ethnic Turkish women, socialist policies fostered a work-oriented culture in which being a good worker was regarded as a prerequisite for good citizenship (Kaytan, 2014, p. 107). Hence, while earlier waves of immigrant women likely held gender norms—particularly regarding work—similar to those of their native counterparts in Türkiye, the 1989 wave of ethnic Turkish immigrants from Bulgaria exhibited a distinct work culture that set them apart from the native population.

The 1990 Turkish census, as summarized in Table 1, shows that female labor force participation in Türkiye was just 20% at the time. The descriptive statistics in Table 1 also demonstrate how significant institutional differences in gender roles translate into disparities in labor force participation, sectoral employment, fertility, and education between the native women and the immigrant women who arrived with the 1989 wave. Specifically, a notable gap in sectoral employment shows that 66% of employed ethnic Turkish women worked in manufacturing upon their arrival to Turkiye in 1989, in stark contrast to just 23% of employed native women. Addi-

tionally, our data indicates that ethnic Turkish women generally had fewer children and higher educational attainment, particularly in terms of middle and high school completion. However, their college completion rates were similar to those of native women.

This significant contrast in gender norms is further illustrated by the early 1990s World Value Survey, which reveals substantial cultural differences between Bulgarian and Turkish societies, especially in attitudes towards maternal employment and traditional gender norms. For instance, while 76% of the Bulgarian respondents believe that working mothers can maintain nurturing relationships with their children, only 48% of the Turkish women agree. Additionally, whereas only 29% of Bulgarian married women think that men should have priority in job opportunities, 57% of Turkish women hold this traditional view.

Qualitative research on migrant women's experiences in Türkiye also highlights substantial differences in gender norms between natives and the 1989 wave of migrants. Based on in-depth interviews with immigrant women from Bulgaria, Parla (2009) observes that these women contributed as much income to their households as men, in contrast to many of their local counterparts. Almost all immigrant women viewed work as an essential part of life and expressed amazement at the low level of women's workforce participation in Türkiye. Parla (2009) also highlights that many immigrant women took pride in working in jobs traditionally deemed "unsuitable for women." Because immigrants settled in cities and towns, becoming neighbors with the natives, their work choices became visible to the local population. Their attitudes toward work, in turn, led to struggles over proper gender roles. Locals, particularly older native residents, denounced their employment choices by appealing to traditional gender norms. Kaytan (2014) conducts interviews with Turkish refugee women from Bulgaria to explore their gendered experiences in Türkiye. Consistent with Parla's findings, all the immigrant women interviewed by Kaytan (2014) were employed in Türkiye, earned as much as men, and contributed equally to their households. The women also expressed negative views regarding the conservative gender norms and practices in Türkiye, noting that they faced criticism for their work culture.

The narratives reported by both Parla (2009) and Kaytan (2014) emphasize that norms within immigrant communities were significantly more supportive of women's work, with immigrant

women being much more likely to be employed than native women. Additionally, Kaytan (2014, p. 81) observes that "immigrant women think they set a good example for women in Turkey in terms of paid employment outside the home. Thus, immigrant women's employment might have encouraged women in their neighborhood in Turkey to be economically active and take up paid employment." In fact, several women stated that "local women have begun working after seeing it from us" and that immigrant women "broke the taboo of women's working" (p. 84, 86, 87).

Taken together, these substantial contrasts in gender norms, labor force engagement, and other demographic outcomes highlight the profound differences between the two groups of women, providing a unique framework for exploring the effects of horizontal cultural transmission triggered by the forced migration of ethnic Turks to Türkiye and subsequent change in native women's socioeconomic outcomes and gender attitudes a decade later.

## 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 World Value Surveys 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 provides detailed information on individuals' place of birth and current district of residence, which is crucial for our identification framework.

Our analysis in this paper 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. This information first identifies the province and its district. Second, it elicits whether the area of residence is a district center (a provincial center is also a district center), a town that is not a county 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 Kirdar (2017).[5] This choice of the unit of analysis has several reasons. First, in most districts, the population not living in the district center is mostly engaged in agriculture and, therefore, does not have exposure to the same labor market as the dwellers 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.[6] Moreover, most ethnic Turkish immigrants 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 "recent ethnic Turkish immigrants" as individuals who lived in Bulgaria in 1985 but were in Türkiye in 1990—virtually all of whom were 1989 refugees. 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. The latter census was conducted more than a decade after the arrival of ethnic Turkish immigrants in 1989. Given our focus on native Turkish women, we exclude individuals born in Bulgaria. Our primary variable of interest is the ratio of 1989 ethnic Turkish migrant women to native women, excluding those born in Bulgaria, in a given district.

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

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

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

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.[7] In addition to overall female labor force participation, we also generate an indicator for employment in the manufacturing sector, where ethnic Turkish women predominately start working upon their arrival in Türkiye. This variable takes a value of 1 if the native woman is employed in manufacturing and 0 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). Table 1 illustrates that ethnic Turkish immigrant women have significantly higher completion rates of middle and high school than native women, while differences in primary school completion and college graduation are minimal. Thus, for educational attainment, we focus on three levels: middle school, high school, and college graduation.

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 (Tunali et al., 2021).[8] Similarly, in analyzing fertility outcomes, we focus on the same age

[7]The 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.

[8]We check the robustness of our findings using alternative age intervals.

group, as it aligns with the peak reproductive years during the 2000s in Türkiye. For educational outcomes, we adjust the age range according to the specific educational level being assessed. For instance, in analyzing middle school degree attainment, we include individuals aged 17 to 22. The lower age limit of 17 ensures that individuals are old enough to have completed middle school. The upper age 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. This ensures that individuals in this age bracket were influenced by the arrival of the immigrants in their pursuit of middle school, given that the typical starting age for middle school is 12. Following similar logic, we focus on 14- to 19-year-olds when assessing primary school completion, 20- to 25-year-olds for high school completion, and 25- to 30-year-olds for college completion.[9]

### 4.1 Descriptive Statistics

Table 1 presents the descriptive statistics for our outcomes of interest for the 1989 ethnic immigrant women (and men) and the native population, using the 1990 census data conducted shortly after their arrival. We observe in Table 1 that 72% of the refugee women participated in the labor force upon their arrival in Türkiye, compared to just 20% of native Turkish women. Further, the employment sectors reveal sharp differences between the two groups of women, particularly in manufacturing. Table 1 shows that 66% of immigrant women worked in the manufacturing sector upon their arrival in 1989, in stark contrast to only 23% of their native counterparts. Native women, by comparison, had a much larger share in services and agriculture. Importantly, we observe no significant differences between native and ethnic Turkish men in labor market outcomes, and there are no notable disparities in their employment sectors.

Regarding socioeconomic outcomes, the number of births per woman is higher for native women than for refugee women (1.83 vs. 1.49). Additionally, both refugee men and women exhibit higher educational attainment. Notably, the fractions of middle school and high school graduates are much higher among refugee women; almost 40% of refugee women were middle school graduates compared to less than 9% of native women, and nearly 45% of refugee women

[9]The minimum ages used for each educational attainment level follow conventions established in other studies (Aydemir et al., 2022; Akyol and Kirdar, 2022).

were high school graduates compared to just under 16% of native women in 1990.

In summary, Table 1 highlights that ethnic Turkish immigrant women had significantly higher employment and labor force participation rates, a strong concentration in manufacturing, lower fertility, and higher educational attainment than native women upon their arrival in Türkiye. These differences likely reflect the pre-arrival gender norms of immigrant women, shaped by their prolonged exposure to the socialist regime in Bulgaria, which influenced their labor market behavior, family roles, and educational attainment.

Table 2 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 manufacturing employment rate dropped from 15 to 13 percentage points.[10]

Notably, Table 2 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, Table 2 highlights a secular decline in fertility, with the number of children per woman falling from 1.83 in 1990 to 1.46 in 2000.

Table 2 shows significant nationwide trends in both labor market and socioeconomic outcomes. Some of these trends may reflect changes in secular patterns of education and rural-to-urban migration, given that our analysis focuses on district centers. At the same time, as explained in the following section on the identification framework, we account for differential time trends in all outcomes across 81 provinces by controlling for province fixed effects. Notably, our placebo

[10]These figures pertain to 18- to 39-year-old women and men in district centers and may reflect changes in secular trends in education and rural-to-urban migration.

checks, discussed later in the paper, demonstrate that incorporating these province-level time trends is crucial for the identification assumption to hold.

## 5 Identification Method and Estimation

To examine the long-term effects of forced migration, the cultural shock it induced, and horizontal cultural transmission between refugee and native women, we first estimate a difference-in-differences analysis. This method exploits the spatial distribution of ethnic Turkish immigrants 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:

$$\Delta(Native\ Outcome)_{idt} = \alpha + \beta(Ethnic\ Turkish\ Immigrant/Native)_{id,90} + X_{id,90}\Gamma + \mu_i + \epsilon_{idt} \quad (1)$$

The unit of analysis in equation (1) is the 623 province and district centers according to the administrative classification in 1985. For each district $d$ in province $i$ in census year $t$, we compute the share among native women (men) who are a) employed, b) in the labor force, and c) employed in manufacturing for the sample of 18 to 39-year-olds, excluding all individuals born in Bulgaria. Each outcome is measured as the change in a given outcome between the 1990 and 2000 censuses. The control variables, $X_{id,90}$ , include district-level controls 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, college graduates), and 9 sectors of employment in the labor force, as well as, log population in 1990. In equation (1), $\mu_i$ represents province-fixed effects, which accounts for provincial trends in outcomes across two censuses. $\varepsilon_{idt}$ is the error term. Standard errors are clustered at the level of the district to account for correlation in outcomes across census years.

As previously mentioned, the summary statistics in Table 2 present nationwide time trends for our key outcomes. The province-level fixed effects in equation (1) account for province-specific

time trends in outcomes between 1990 and 2000; therefore, the identifying variation in outcomes comes from district-center level changes within the same province between the two periods. The key parameter of interest in equation (1), $\beta$, 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 the ethnic Turkish immigrants who arrived in Türkiye within the last 5 years in the 1990 census, our key parameter of interest essentially measures the effect of the 1989 forced migration of the ethnic Turkish women from Bulgaria and its impacts on native's socioeconomic outcomes a decade after their arrival.

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 $i$ 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-level observations by $[1/(1/pop1990+1/pop2000)]$, where pop1990 and pop2000 refer to the population size in 1990 and 2000, respectively.[11]

The ethnic Turks who arrived with the 1989 wave could have chosen the locations to settle based on some unobserved factors correlated with both our key variable of interest and the outcomes of interest. For example, they could have chosen locations with better labor market prospects conducive to labor force participation and employment growth of 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 immigrants. The instrument is defined as the ratio of ethnic Turkish immigrants 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 1985 in a given district. Hence, the instrument captures the settlement patterns of earlier ethnic

[11] Census data for 1990 and 2000 use different weights due to population changes. We, therefore, use a weighted average of the weights in the two survey years.

Turkish 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 2.1, due to strict border control by the communist state in Bulgaria, the latest migration wave from Bulgaria was in 1968, and there was almost no migration from Bulgaria starting in the early 1970s for the next two decades until the massive migration of 1989, which is also corroborated by data from the 1985 census. Moreover, the Turkish government had a significant role in the settlement of earlier flows of ethnic Turkish migrants from Bulgaria. Hence, the initial location of the vast majority of immigrants from Bulgaria before 1989 was determined by the government and not by the decisions of immigrants.

Although some ethnic Turkish migrants who arrived during earlier waves might have resettled after their initial arrival, two aspects of these migration waves enhance the credibility of our instrument. First, we find a strong correlation between the settlement provinces of those who arrived in 1950-51 and their places of residence in 1985. A 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 R2 of 0.72 in the sample of provinces where the share of ethnic Turkish migrants in 1985 exceeds 0.01. This implies that most of the earlier ethnic Turkish immigrants remained in their original settlement provinces, thereby shaping the settlement patterns of future migration flows from Bulgaria. This finding is not surprising given the state-led integration policies and housing campaigns.

Still, the government-mandated settlement patterns of refugees could still be influenced by economic conditions. To address this concern, we examine the association between the unemployment rate and our instrument across 623 district centers in 1985, accounting for the same control variables as in equation (1). The coefficient we estimate for the unemployment rate, 0.018 (0.024), and indicates no evidence of such an association. Taken together, these findings support the use of an instrument based on the historical settlement of ethnic Turkish migrants, which was largely determined by the government and persisted until the forced migration of 1989.

The assumption for the validity of our instrument is that, in the absence of the refugee shock, the trends in native women's socioeconomic outcomes in district centers with high and low values of the instrument would have been the same, conditional on province-fixed effects and a set of covariates. In other words, the residual trends in the outcomes must be uncorrelated with the instrument. We provide evidence on the validity of this assumption by conducting a battery of placebo tests for each outcome of interest. In these tests, we take the 1985 and 1990 census years as pre-shock periods and estimate the baseline specification using these censuses. For the fertility analysis, we also conduct placebo experiments focusing exclusively on women beyond their reproductive years. It is comforting that the placebo exercises for all outcomes we study are economically and statistically insignificant (as discussed in detail later), lending credence to the validity of our estimations.

## 6 Estimation Results

This section presents our estimation results on labor market, fertility, and schooling outcomes. It also includes identification checks, including placebo tests of the key identification assumption, and explores the heterogeneity of estimated labor market impacts by native women's schooling levels.

Before discussing the second-stage results, we briefly review the first-stage findings. Appendix Table A1 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 immigrants in 1985 and the share of the most recent ethnic Turkish immigrant women in 1989 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 highlight that the 1989 ethnic Turkish migrants were significantly more likely to settle in districts where earlier waves of Bulgarian immigrants had settled, which was facilitated by state-led policies. Collectively, evidence presented in Appendix Table A1 strongly supports the relevance of our instrument.

### 6.1 Labor Market Outcomes

Table 3 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+).

For the full sample, Panel (A) of Table 3 reports the results for native women, while the results for native men are presented in Panel B. 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 effects on native men are also positive, they are considerably smaller and not statistically significant. Specifically, focusing on Panel A, our 2SLS estimates indicate that a one percentage point increase in the share of recent ethnic Turkish migrant women in a given district brings about roughly a 0.6 percentage point increase in the employment rate of native women, 0.7 percentage point increase in their labor force participation rate, and 0.9 percentage point increase in the manufacturing employment rate of local women a decade later.[12] The results from the sample of urban district centers presented in Panels C and D of Table 3 indicate that our findings are quantitatively and statistically comparable to the full sample.

Table 4 uses a triple-difference specification that takes gender- and time-differenced dependent variables (native women— native men) rather than only time-differenced ones (as in Table 3). The findings presented in Table 4 for the full sample demonstrate significant improvements in the

[12] Appendix Table A2 presents 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 show 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.

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. According to the 2SLS estimates, 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 0.75 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 vis-a-vis men becomes statistically significant when we take the sample of urban district centers—where the manufacturing sector constitutes a more integral part of the overall economy. As seen in the second panel of Table 4, a one-percentage-point increase in the refugee-to-native ratio increases women's employment in manufacturing by more than 0.4 percentage points and labor force participation rate by 0.75 percentage points more than native men. The increase in women's overall employment relative to men's is similar to the change in manufacturing employment but is only marginally statistically insignificant.

Next, we focus our analysis on regions of the country predominantly settled by ethnic Turkish migrants. Panel (C) of Table 4 excludes eastern Türkiye (NUTS-1 regions 10 to 12), where a very small percentage of refugees settled, and panel (D) further restricts the geographical area to the western half of the country (NUTS-1 regions 1 to 6). In panels (C) and (D), the restriction on urban district centers is maintained due to the reasons discussed at the beginning of this section. Through these restrictions, we zoom into regions with a higher concentration of the 1989 ethnic Turkish migrants and locations where manufacturing is more important.

Our findings on the impact on manufacturing employment become even stronger when we make these regional restrictions. According to the 2SLS estimates, a one-percentage-point increase in the refugee-to-native ratio increases native women's employment in manufacturing by 0.47 percentage points more than men's in panel (C) and by nearly 0.6 percentage points more than men's in panel (D) with 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.

We would expect a greater impact on outcomes in district centers that were more heavily affected by the refugee shock. A natural test, therefore, is to categorize the district centers into low, medium, and high exposure groups and present results for high versus low exposure district centers. Appendix Table A3 replicates Table 4 using this approach. The results are presented in three panels: 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-density districts. The number of district centers in the high-intensity group is 52 in panel (A), 21 in panel (B), and 14 in panel (C). The estimates in Appendix Table A3 show larger and more precisely estimated effects of the refugee influx on all three labor market outcomes, as expected. Additionally, while the coefficient for manufacturing employment is marginally statistically insignificant for the full sample in Table 4, it becomes statistically significant at the 10% level in panel (A) and at the 5% level in panels (B) and (C) of Appendix Table A3.

Overall, the findings in Table 3, Table 4 and Appendix Table A3 show that a decade after the refugee shock, exposure to ethnic Turkish women led to increased labor market engagement and higher employment rates among native Turkish women. This effect is particularly evident in the manufacturing sector, where many ethnic Turkish women began working upon their arrival. Further, these gender-specific labor market impacts are most pronounced in western Türkiye, where manufacturing is the dominant industry but traditionally employs fewer women, as well as in districts that had the highest concentration of ethnic Turkish women.

These estimated gender-specific impacts on the labor market engagement of native women, particularly their increased employment in manufacturing a decade after ethnic Turks arrived, may be arising because of the nature of the manufacturing jobs and the characteristics of local women on the margin. Manufacturing jobs typically require mid-level skills. Therefore, native women who are attracted to the labor market through their exposure to ethnic Turkish migrant women's labor market behavior are also expected to possess mid-level education but were not

previously active in the labor market.[13] The heterogeneity results presented later in Table 13 indeed demonstrate that the estimated labor market effects are mostly driven by the changes in the labor market behavior of native women with at least a middle school diploma. This reinforces the notion that native women who have completed compulsory education and acquired the necessary skills for manufacturing jobs are also more likely to be influenced by the traditional "male breadwinner model" and related gender norms, which often view the labor market, particularly manufacturing jobs, as a predominantly male domain. Thus, through social learning and the horizontal transmission of more progressive gender norms from their interactions with ethnic Turkish neighbors with similar educational attainment, native women likely experienced increased employment in male-dominated sectors such as manufacturing, as these shifting norms aligned with their skill levels.

#### 6.1.1 Demand Shocks in the Product Market Potentially Favoring Women

An alternative explanation to our findings regarding women's improved employment outcomes is a potential demand-side effect. The refugee shock increases the product demand locally. For instance, we would expect the local demand for products in the services sector to increase in the refugee-dense regions. This positive demand shock in the product market would translate into higher production and, hence, job creation. If this job creation favors women more than men, the resulting outcome would be consistent with our findings. However, our key finding that makes this mechanism unlikely is the positive employment effects in the manufacturing sector for women. Since the manufacturing sector is tradable, we would not expect an increase in locally produced manufacturing products. Furthermore, our results indicate no substantial changes in native men's labor market outcomes, as summarized in the previous tables, suggesting that the observed effects are not driven by a general increase in labor demand in districts with a higher concentration of refugees.

[13] Dayioglu and Kirdar (2010) show that women with higher education already had high participation in the labor market before the refugee shock.

#### 6.1.2 Labor Demand Shocks Potentially Favoring Women

Another alternative to the cultural transmission explanation could be a shift in the labor demand curve that is more favorable to women than men in districts where the ethnic Turkish settled in 1989. The arrival of ethnic Turkish women in 1989 could have pushed firms to adjust in several ways. First, it could have altered production costs as the relative abundance of different factors of production and their prices change. This, in turn, could have influenced firms' production scale and spurred the establishment of new businesses. The ethnic Turkish refugees also bring a different set of skills, which could increase productivity more in certain sectors than others. For instance, Table 1 shows that ethnic Turkish women are much more likely to work in manufacturing than natives after arriving in Türkiye. Suppose that within the manufacturing sector, the influx of ethnic Turkish in 1989 increased productivity more in sectors that typically employ more female workers, such as textiles. Among natives, 30% of textile workers were female in 1990 compared to 8% in other sectors. In addition, the fraction working in textiles among manufacturing workers was slightly higher for ethnic Turkish compared to natives in 1990 (31.2% vs. 28.7% for men and 71.1% vs. 66.0% for women). The higher propensity to work in textiles for ethnic Turkish might imply a higher productivity shift in this sector. Furthermore, exposure to ethnic Turkish women in the workplace and observing their productivity may have significantly altered perceptions of female productivity, leading firms to hire more women, particularly in sectors with a higher female presence before the arrival of ethnic Turks in 1989.

We, therefore, investigate whether the influx of semi-skilled ethnic Turkish women in 1989 indeed boosted the production of textiles more than other sectors by separately estimating the impact of the refugee shock on total employment (men and women) in textiles and other manufacturing sectors, respectively. Table 5 presents the impact of the 1989 ethnic Turkish concentration on total employment in the aggregate manufacturing sector (which aggregates all sub-sectors categorized under manufacturing), textiles, and manufacturing other than textiles. We find that the positive impacts on textiles and non-textile manufacturing are of similar magnitudes. Moreover, for the full sample, while the coefficient for manufacturing other than textiles is statistically significant at the 5 percent level, it ceases to be statistically significant at

conventional levels when we exclusively focus on textiles. Essentially, these results indicate that the influx of ethnic Turkish in 1989 did not boost the textile sector—which employs relatively more women—more than the other manufacturing sectors, thereby suggesting that the differential increase in female labor demand following the arrival of ethnic Turkish women is unlikely the factor explaining our results. This result supports that the shifts in gender norms and attitudes related to work and family are potential mediators of improvements in native women's employment outcomes, which we will investigate later in the paper.

### 6.2 Fertility Outcomes

The effect of ethnic Turkish migrant women on native women may extend beyond its labor market impact. Through social interactions and cultural exchange, native women may adjust their own fertility preferences after being exposed to the family structures and reproductive behaviors of their ethnic Turkish neighbors (Fogli and Fernandez, 2011). To investigate this possibility, we first estimate the effects on the fertility behavior of native women. In this analysis, we focus on the total number of births a woman has experienced by the time of the census. This is motivated by the fact that almost all women marry in Türkiye and approximately 98% have at least one child (Kirdar et al., 2018).

The arrival of ethnic Turkish women could influence the fertility of native women through two main channels. First, the significant increase in the labor market attachment and employment among native women following the refugee influx raises the opportunity cost of children, potentially leading to lower fertility. As employment becomes a viable alternative, women may delay or reduce childbirth in favor of workforce participation. Second, as summarized in Table 2, ethnic Turkish women also have lower fertility rates than native women. Through social interaction and peer influence, native women may revise their own fertility expectations based on exposure to the reproductive behaviors and family structures of their ethnic Turkish neighbors.

Table 6 estimates these fertility effects for the sample of 18- to 39-year-old native women, where the dependent variable is the change in the number of live births per woman between 1990 and 2000. The table reports results for the full sample and subsamples based on the geographic

restrictions described earlier. The results indicate a significant and sizable reduction in fertility a decade after the refugee shock. Specifically, the 2SLS estimates in column (2) for the full sample reveal that one-percentage-point increase in the refugee-to-native ratio in 1990 is associated with a 1.138 decrease in the number of live births per woman a decade later. These results suggest that the arrival of progressive ethnic Turkish women influenced not only native women's labor market outcomes but also their fertility choices.

### 6.3 Schooling Outcomes

In addition to fertility behavior, the influx of ethnic Turkish women could also potentially influence the educational choices of native women. For instance, the presence of more educated ethnic Turkish women within their communities might inspire younger native women to pursue higher levels of education, reflecting evolving societal norms. Conversely, aspirations for further education may diminish if local women find greater acceptance in manufacturing employment, which often does not require advanced educational qualifications. 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.[14]

We find evidence that the refugee influx increases the share of native women with middle school degrees. A one-percentage-point increase in the refugee-native ratio raises the share of middle school graduates by 0.45 percentage points (equivalent to a 3.25% increase given the mean level of middle school graduates in Table 2). Moreover, this increase does not come at the expense of the shares of higher schooling levels. 2SLS coefficients for high school and college degrees are close to zero. The increase in middle school completion suggests that native women may have been influenced by the relatively higher education levels of ethnic Turkish women, many of whom had at least middle school or high school degrees. This result reinforces the role of peer effects and cultural transmission in shaping schooling decisions, as native women likely

[14]The analysis limits the sample to 14- to 19-year-olds when examining primary school degrees, 17- to 22-year-olds for middle school degrees, 20- to 25-year-olds for high school degrees, and 25- to 30-year-olds for college degrees. The reasons for these choices of age groups are provided in the Data Section.

adjusted their educational aspirations based on observed behaviors in their communities.

### 6.4 Identification Checks

#### 6.4.1 Placebo Tests of the Main Identification Assumption

The validity of our instrument relies on the assumption that conditional on province-fixed effects and a set of covariates, the trends in labor market, fertility, and schooling outcomes would have been similar in district centers with high and low instrument values had the refugee shock not occurred. In this section, we conduct several placebo exercises to provide supporting evidence on our identification assumption. Given that the 1989 refugee flow occurred toward the latter part of the same year, primarily during the period from May 26 to August 21, 1989, we do not anticipate any discernible influence on the outcomes of native Turkish women due to shifts societal norms within a single year by 1990. Thus, by using micro-level data from the 1985 and 1990 Turkish censuses and treating both as pre-periods, we redefine our dependent variable as the change in outcomes between 1985 and 1990, as opposed to the period between 1990 and 2000. The definition of the key independent variable, the 1989 ethnic Turkish women share, remains unchanged, capturing the magnitude of the actual shock experienced. Moreover, our analytical specifications remain consistent with the baseline model. In the absence of any pre-trends in outcomes that are correlated with the 1989 refugee shock, we expect these placebo experiments to yield null effects for our outcomes of interest.

Table 8 performs a placebo test on the impact of labor market outcomes for both the full and urban samples, as previously analyzed in Table 3. 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. The 2SLS estimates in all panels are much smaller than the corresponding estimates in Table 3, and all of them are statistically insignificant.

The placebo triple-difference analysis presented in Table 9 further supports these null findings. Similar to previous placebo checks, in the placebo exercise summarized in Table 9, 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 results continue to show similar null effects, reinforcing our confidence in the validity of our estimations and confirming 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 expect any fertility effect of ethnic Turkish 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 Table 10 indicate no reduction in fertility; in fact, compared to Table 6, the coefficients switch signs and turn insignificant. In Panel B of Table 10, we conducted another robustness check for fertility using data from the 1985 and 1990 Censuses. In this placebo analysis, the dependent variable is now defined as the change between 1985 and 1990 in the number of live births per woman among 18- to 39-year-old native women. This placebo exercise also reveals no evidence of an impact, and all point estimates are very close to zero.

Finally, Table 11 presents the results of placebo tests for native women's schooling outcomes using data from the 1985 and 1990 censuses. Similarly, we find no statistically significant impact on any schooling outcomes. Moreover, the coefficients for middle school degrees (for which we find evidence of a positive impact of the refugee inflow in Table 7) are much smaller than those reported in Table 7. Overall, the results of the placebo tests in Table 8- Table 11 strongly support our identification assumption and the validity of our instrument.

#### 6.4.2 Critical Role of Identification via Variation within Provinces

In our analysis, we include the province-level fixed effects; thereby, our estimations account for province-level changes in outcomes between 1990 and 2000. Hence, the identifying variation both in difference-in-differences and IV specification comes from comparing districts (within a province) with similar socioeconomic conditions; thereby accounting for common province-level

trends in outcomes of interest between two censuses. Nevertheless, a careful consideration of the potential time trends in our outcome variables over time is still important in our setting. For an outcome with national time trends, we could also expect regional time trends to differ markedly.[15] Appendix Tables A4 to A7 show the results of the placebo tests from Tables 8 to 11 without including province-fixed effects. Comparing these results with those in Tables 8 to 11 highlights the importance of accounting for differential time trends in outcomes across provinces by controlling for province dummies in our analysis.

Further, there may be concerns about a potential lack of variation in the concentration of ethnic Turks across districts within a given province. However, state-led settlement policies for ethnic Turks from Bulgaria have created significant variation in their presence across districts within the same province, addressing this concern. For instance, among the 8 district centers of Tekirdağ province in northwestern Türkiye, the fraction of refugees in the population is above 15 percent for one, between 10 and 15 for two, between 5 and 10 for one, between 1 and 5 for two, and under 1 for the last two.

#### 6.4.3 Internal Migration

Next, we examine the potential impact of internal migration on our results. Our data indicate that in 1990, 19.9% of 18–39-year-old individuals living in the district centers in our sample did not reside in the same district center five years ago. Hence, a potential concern is that the influx of the recent ethnic Turks might have discouraged other potential migrants from relocating, leading to higher overall employment and increased participation in manufacturing jobs among native women ten years later.

We, therefore, investigate whether the arrival of ethnic Turks 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. Therefore, these movers encompass both internal

[15] For instance, for the fertility outcome with a national downward trend, the downward trend in Eastern Türkiye (where the initial levels are higher) is stronger. In fact, from 1990 to 2000, the number of live births per woman declined by 0.25 in the district centers of NUTS-1 region 2 (northwestern Türkiye, which houses many ethnic Turkish migrants) but by more than 0.5 in each of the district centers of NUTS-1 regions 10 to 12 (eastern Türkiye). Similar regional differences also exist in labor force participation trends. For instance, from 1990 to 2000, the female labor force participation rate increased by 11.5 percentage points (53 percent) in the district centers of western Türkiye (NUTS-1 regions 1 to 4) compared to 6.3 percentage points (29 percent) in northern Türkiye (NUTS-1 regions 8 and 9).

and international migrants, although international migration was relatively limited during this period. Table 12 shows the effect of the 1989 refugee shock on the change in the fraction of movers from 1990 to 2000 in a given district, using the same specification as in the previous tables. The results indicate a positive but marginally significant (at the 10 percent level) 2SLS coefficient for the full sample. However, for the urban sample and for the sample restricted to the western half of the country (where the majority of the ethnic Turkish settled), the point estimates cease to be economically and statistically significant. In essence, we find very weak evidence, if any, of an increase in other migrants to the areas populated by the influx of ethnic Turkish migrants in 1989. While, as aforementioned, we might have expected the refugee shock to discourage internal migration to these areas, our findings suggest the opposite.

Further, we note that differential internal migration based on ethnic Turkish concentration in a district would only be a concern for our findings if other migrants were more likely to substitute local men rather than local women, potentially narrowing the gender gaps in labor market outcomes. However, this is unlikely since internal migrants, on average, are less-skilled individuals, for whom it is easier to substitute young and female workers than prime-aged men. In fact, in the context of recent Syrian migrants in Türkiye, Aksu et al. (2022) find that the impact of Syrian refugees on native employment is much more negative for women than for men. If internal migration were driving women out of the labor force by replacing them with young migrant men, we would expect to see a decline in female labor participation. However, our results suggest the opposite, with a significant increase in female labor market participation and employment in manufacturing. Therefore, it is unlikely that internal migration poses a threat to the causal interpretation of our results.

### 6.5 Heterogeneity by Schooling Level

In this section, we examine the impact of the arrival of ethnic Turkish 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 primary

school degree or lower education, only 8 percent of ethnic Turkish women are. A substantial share of ethnic Turkish women (almost 85 percent) belong to the second group compared to a quarter of native women. Finally, the share of college graduates is more comparable across ethnic Turkish women (7.3%) and native women (6.1%).

Table 13 replicates the main results of the 1989 refugee shock on the labor market outcomes for native women by education level.[16] We find that the estimated effects are significantly more pronounced for native women with middle school or high school degrees. This is the education group that most ethnic Turkish women also belong to (almost 85 percent, as stated above). Therefore, the estimation results are highly consistent with our argument of horizontal cultural transmission, in which native women can strongly associate with their ethnic Turkish neighbors and friends who have similar educational attainment. 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 impact on labor market participation of college-educated women, which is not a surprise because the participation rate of this group is already quite high (Dayioglu and Kirdar, 2010). However, we also observe a significant and positive impact on employment in manufacturing for this group. This suggests that the substantial presence of ethnic Turkish women in the male-dominated manufacturing sector may have had extensive effects on gender representation across various educational levels in these industries.

In contrast, we find no evidence suggesting any labor market impacts among native women with primary or lower levels of education. This group likely has much fewer role models of the same education group to interact with and lacks the skills needed for employment in manufacturing, both of which may hinder social learning. Taken together, the heterogeneity results in Table 13 demonstrate that the arrival of ethnic Turkish women, who are strongly attached to the labor market and predominantly employed in male-dominated manufacturing, has encouraged similarly educated native women to join the workforce, particularly in manufacturing.

[16] Here, 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.

# 7 Mechanisms

Several factors may explain the significant increase in labor supply and employment in manufacturing, the decline in fertility rates, and the increase in middle school completion among native Turkish women a decade after the influx of ethnic Turkish refugees. Social learning and horizontal cultural transmission between groups with a similar language and religion but with different cultural and gender norms could be one of the potential mediators that explain our results. Alternatively, there might have been a shift in the labor demand favoring women over men after the arrival of ethnic Turkish women in the regions ethnic Turkish migrants settled in 1989. However, as shown earlier in Table 3 and Table 5, we find no evidence of increased labor demand (when we focus on native men) or differential female employment in sectors predominantly employing women in districts with a higher concentration of refugee women (as summarized in Table 5). Therefore, in the remainder of this section, we focus on shifts in gender norms as a potential channel for explaining our results.

Earlier work by Fogli and Veldkamp (2011) and Miho et al. (2024) suggest that interactions between groups sharing language and religion but differing in cultural norms can build trust and facilitate the transmission of cultural attitudes over time. In our context, ongoing interactions between ethnic Turkish and native women as neighbors and friends could expose native women to more progressive labor market behaviors and employment sectors typical of ethnic Turkish women. Our findings also indicate a significant shift in fertility behavior and educational aspirations among native women in regions with a higher influx of ethnic Turkish immigrants, pointing to broader changes in marriage age, family planning decisions, and attitudes toward female autonomy.

This exposure may lead to social learning, reducing the stigma associated with breaking traditional gender roles. For example, observing their ethnic Turkish neighbors' labor market behavior could have altered native women's perceptions of safety concerns related to working and reduced uncertainty about the employment environment. Additionally, witnessing the autonomy and economic freedom gained by working ethnic Turkish women may have further encouraged native women to enter the workforce following the arrival of the ethnic Turkish community in

their neighborhoods. Over time, these shifts could lead to increased workforce participation among native women and changes in their roles at home, aligning more closely with the progressive norms observed among ethnic Turkish women, as postulated by Akerlof and Kranton (2000).

To explore potential shifts in gender norms and attitudes, we analyze how the presence of ethnic Turkish migrant women might influence gender norms in these regions using detailed data from the World Value 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 indices such as the Autonomy Index, which assesses perceptions of personal autonomy, and the Equality Index, which measures attitudes toward gender equality. 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; Fernandez, 2013).

We estimate a difference-in-differences analysis where we exploit the spatial distribution of ethnic Turkish immigrants at their time of arrival and the changes in attitudes and norms of native women between 1990 and 1996 as follows:

$$(Native\ Outcome)_{irt} = \alpha + \beta(Ethnic\ Turkish\ Immigrant/Native)_{rt,90} + X_{irt}\Gamma + \mu_r + \theta_t + \epsilon_{irt} \tag{2}$$

where $i$ is the individual in region $r$ in year $t$. Regressions control for age, year fixed effects ($\theta_t$) and region fixed effects ($\mu_r$). Since the finest location information in the WVS is at the region level,[17] 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 ethnic Turkish immigrants to natives in 1985, defined at the regional level. Standard errors are clustered at the regional level.

Native 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

[17] In 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.

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 two indices from the WVS to measure the degree of individuals' adherence to autonomy and equality norms. The autonomy index is based on the importance that individuals place on religious faith, obedience, independence, and perseverance. The equality index is constructed from individuals' responses regarding gender equality in employment, politics, and education.

Table 14 presents the estimation results for changes in cultural values, beliefs, and societal norms among native women (men), using the same specification as the previous analysis. The results summarized in Panel A indicate that native women in districts with a higher presence of ethnic Turkish women are more likely to view work as important and are less supportive of male job priority after the arrival of ethnic Turkish women. Specifically, a 1 percentage point increase in the share of ethnic Turkish women in a province results in an 8 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 share of recent ethnic Turkish women also increases the autonomy index score among native 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 ethnic Turkish women does not significantly impact native men's perceptions of the importance of work, their support for male job priority, or their scores on the equality and autonomy indices. However, we find that native 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. These findings suggest that the improvement in local native women's labor market outcomes and fertility behavior is primarily driven by changes in women's attitudes rather than shifts in men's perceptions of working women. Overall, the results in Table 14 suggest that social learning and cultural transmission from ethnic Turkish women have led to changes in native women's beliefs and societal norms. These shifts have contributed to increased labor market participation, greater employ-

ment in the male-dominated manufacturing sector, reduced fertility and increased educational attainment, demonstrating how cultural changes can interact with economic forces to reshape traditional and conservative societies.

## 8 Conclusion

This paper provides causal evidence on how horizontal cultural transmission of gender norms influences women's labor market participation, fertility behaviors, and educational attainment. We explore the forced migration of nearly half a million ethnic Turks from Bulgaria to Türkiye in 1989, following the collapse of the Iron Curtain, which led to one of the most rapid demographic shifts in late 20th-century Europe. This sudden influx exposed a traditionally conservative Turkish society to refugees who shared the same language and religious heritage but brought markedly progressive gender norms and had significantly higher labor force participation and employment rates compared to native women, particularly in the male-dominated manufacturing sector.

We exploit the plausibly exogenous settlement patterns of earlier ethnic Turkish migrants from Bulgaria, determined by the Turkish government and supported by state-led housing campaigns, to identify the causal effects of the 1989 refugee shock on native women's socioeconomic outcomes a decade later. Our results reveal a significant increase in labor force participation and employment among native women in regions with a higher share of refugee women a decade later, both in absolute terms and relative to men in the same districts. These employment effects are particularly strong in the tradable manufacturing sector, where ethnic Turkish immigrant women had a significant presence upon arrival. Additionally, we observe a significant decline in fertility and an increase in middle school completion among native women exposed to these migrants, aligning native women with the fertility patterns and educational attainment of refugee women. Our findings also indicate no significant impact on labor market attachment or sectoral choices among men.

Our findings demonstrating the positive employment effects in the manufacturing sector for native women are particularly significant. Although manufacturing has traditionally been a

male-dominated sector, ethnic Turkish immigrant women predominantly began working in this sector upon arrival. Importantly, these positive labor market effects demonstrate that as ethnic Turkish migrant women integrated into the Turkish labor market and started working in manufacturing, they boosted native women's labor market attachment as well as employment within the same sector. In addition, the improvement in native women's labor market attachment was particularly strong for groups with similar educational attainment to ethnic Turkish migrants. Our findings further suggest that the common language and religion between ethnic and native Turkish women, which fosters trust and facilitates cultural exchange, bolstered the social learning and cultural transmission between the two groups (Miho et al., 2024; Giuliano and Tabellini, 2020).

Our results demonstrate that an external shock to the social and economic environment can facilitate the horizontal cultural transmission of progressive gender norms in a developing country, traditionally characterized by conservative gender values. This transmission has furthered female emancipation, increased female labor market engagement, and reduced fertility among native women. Our findings present one of the first causal evidence in the literature on the malleability of gender norms under exogenous cultural shifts in a context with entrenched cultural norms restricting women's participation in both labor markets and the public sphere.

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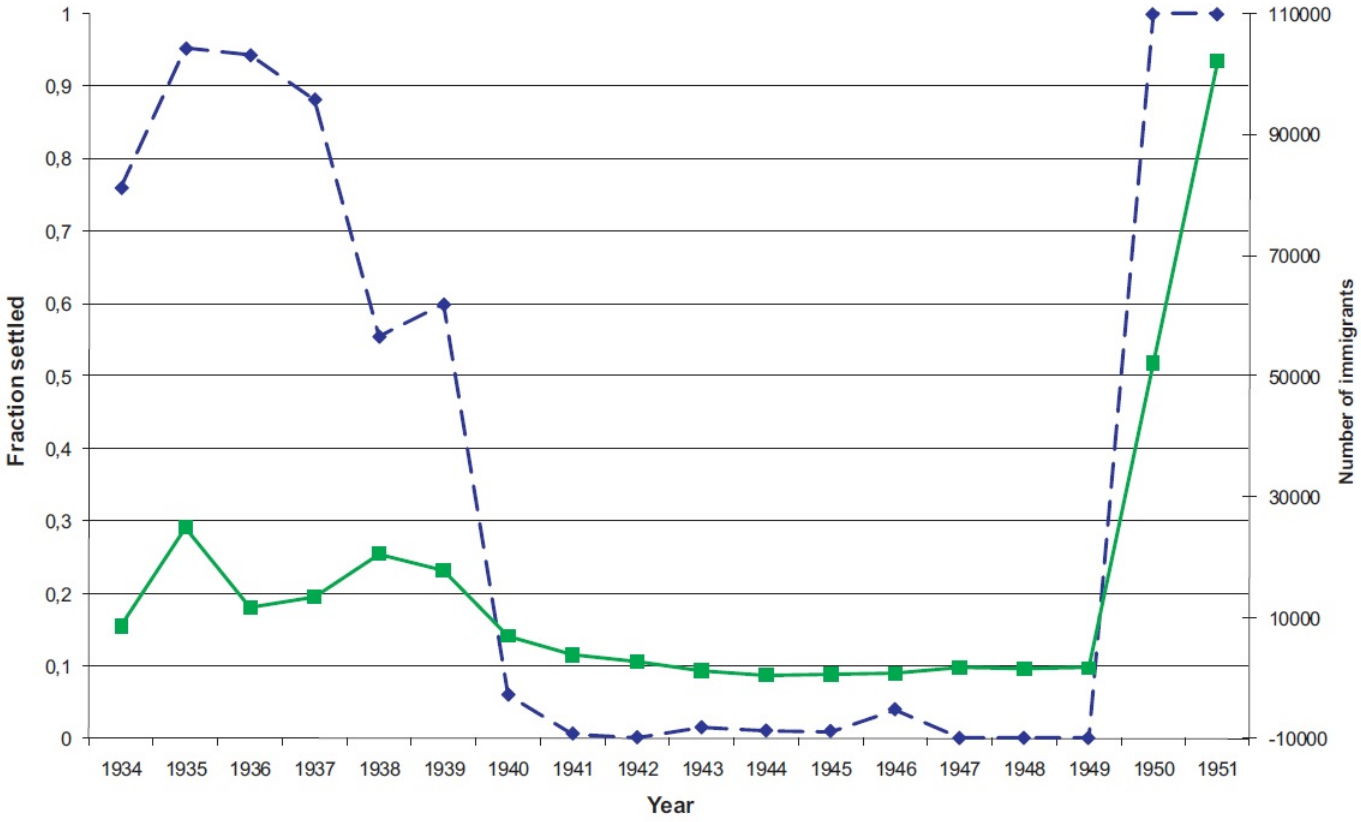
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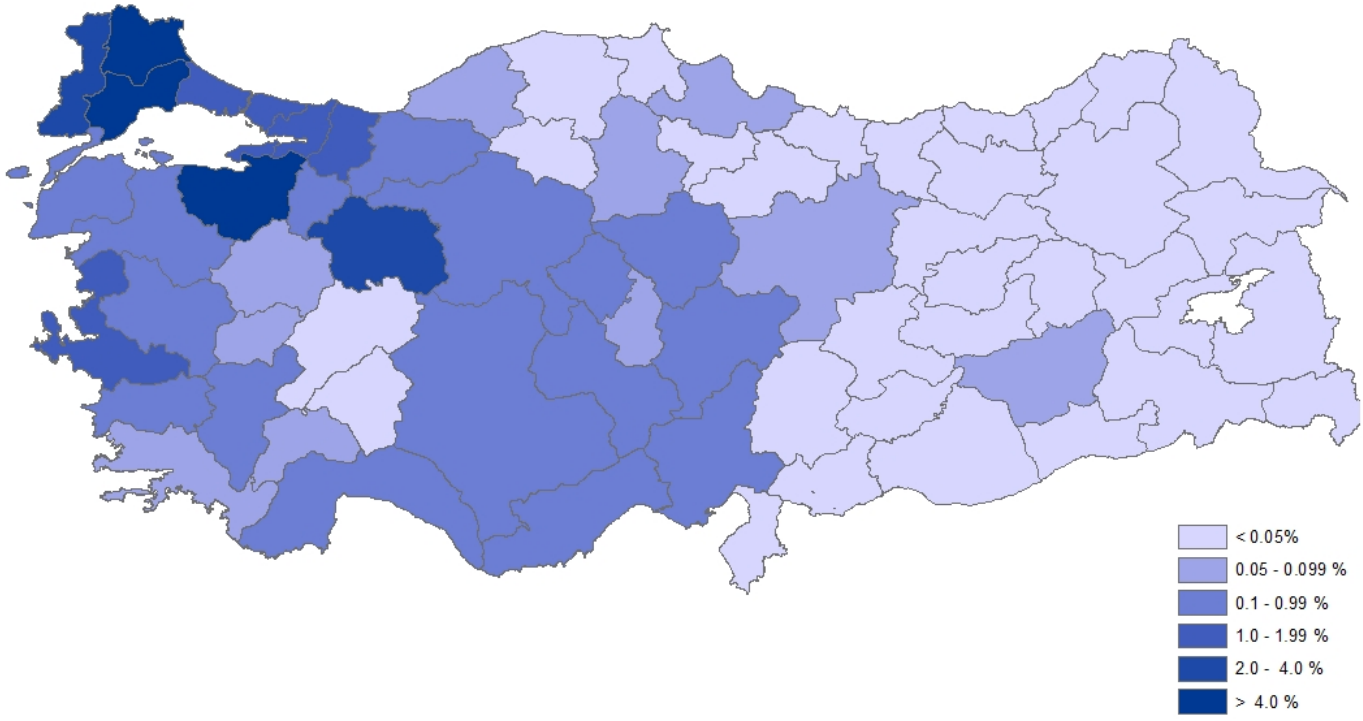
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**Figure 1: Immigrant flows from Bulgaria 1934–1951**



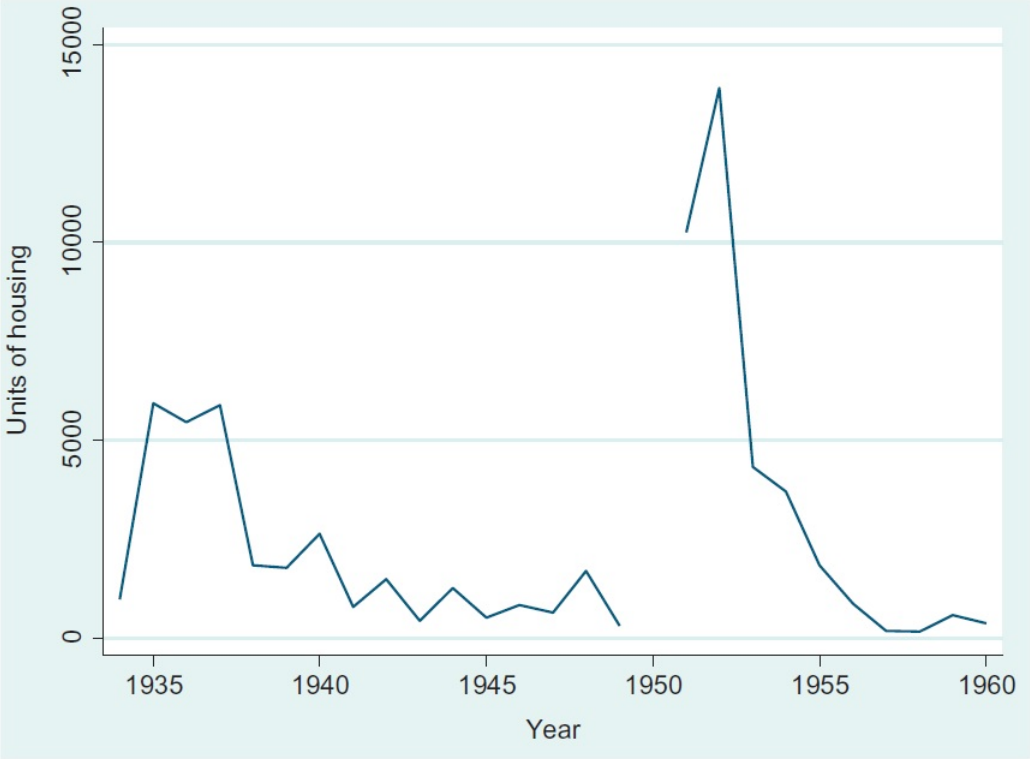

Notes: The dashed line represents the "Fraction settled" while the solid line corresponds to the "Number of immigrants." Data on the migrants who were settled by the state is accessible for the period between 1934 and 1960. The majority of the 1968 cohort, who arrived as part of the family reunification 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.

**Table 1: Ethnic Turkish vs Native Turkish Samples**

| | Women | | Men | |
|---|---|---|---|---|
| | 1989 Ethnic Turkish | Natives | 1989 Ethnic Turkish | 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 |
| 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 | 0.398 | 0.089 | 0.241 | 0.134 |
| Share High School Degree | 0.448 | 0.159 | 0.637 | 0.206 |
| Share College Degree | 0.073 | 0.061 | 0.068 | 0.121 |

Notes: The sample is restricted to 18- to 39-year-olds living in all 623 district centers (according to the 1985 classification) in the 1990 Türkiye Census, except in the calculations of shares with high school and college degrees. 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.

**Table 2: 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 3: 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 Ethnic Turkish to Natives | 0.459** | 0.574** | 0.545*** | 0.713** | 0.884*** | 0.922*** |
| in 1990 among Women aged 18-39 | (0.206) | (0.267) | (0.210) | (0.292) | (0.173) | (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 Ethnic Turkish to Natives | 0.031 | 0.185 | 0.164 | 0.248 | 0.842** | 0.510 |
| in 1990 among Men aged 18-39 | (0.230) | (0.272) | (0.137) | (0.176) | (0.370) | (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 Ethnic Turkish to Natives | 0.590** | 0.616*** | 0.665** | 0.739** | 0.850*** | 0.712*** |
| in 1990 among Women aged 18-39 | (0.254) | (0.223) | (0.287) | (0.289) | (0.210) | (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 Ethnic Turkish to Natives | 0.281 | 0.255 | 0.200 | 0.228 | 0.868* | 0.318 |
| in 1990 among Men aged 18-39 | (0.318) | (0.309) | (0.221) | (0.254) | (0.502) | (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 Ethnic Turkish migrants who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turks—to native Turks (excluding both the 1989 ethnic Turks and the ethnic Turks arriving in earlier waves) in the sample of 18 to 39-year-old women (men). 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 4: 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 |
| **Full Sample** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 0.419* | 0.607** | 0.566*** | 0.750*** | -0.113 | 0.350 |
| | (0.242) | (0.259) | (0.183) | (0.232) | (0.262) | (0.268) |
| Observations | 623 | 623 | 623 | 623 | 623 | 623 |
| $R^2$ | 0.442 | 0.442 | 0.491 | 0.49 | 0.402 | 0.394 |
| **Urban Areas (Population above 20,000)** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 0.331 | 0.434 | 0.613** | 0.751*** | -0.078 | 0.426* |
| | (0.359) | (0.286) | (0.277) | (0.249) | (0.316) | (0.250) |
| Observations | 225 | 225 | 225 | 225 | 225 | 225 |
| $R^2$ | 0.653 | 0.652 | 0.656 | 0.656 | 0.560 | 0.551 |
| **NUTS1 $\leq$ 9 (Excluding Eastern Türkiye)** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 0.456 | 0.507 | 0.660** | 0.827*** | -0.064 | 0.470* |
| | (0.373) | (0.318) | (0.297) | (0.267) | (0.324) | (0.257) |
| Observations | 176 | 176 | 176 | 176 | 176 | 176 |
| $R^2$ | 0.565 | 0.565 | 0.644 | 0.643 | 0.566 | 0.556 |
| **NUTS1 $\leq$ 6 (Western half of Türkiye)** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 0.192 | 0.099 | 0.569* | 0.690** | 0.115 | 0.586** |
| | (0.422) | (0.373) | (0.338) | (0.309) | (0.334) | (0.285) |
| Observations | 120 | 120 | 120 | 120 | 120 | 120 |
| $R^2$ | 0.589 | 0.589 | 0.659 | 0.659 | 0.579 | 0.569 |

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 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 province and district centers with populations above 20,000 in Panels (C) and (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, ad c) employed in manufacturing. The key variable of interest is the ratio of Ethnic Turkish migrants who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turks—to native Turks (excluding both the 1989 ethnic Turks and the ethnic Turks arriving in earlier waves) in the sample of 18 to 39-year-old women (men).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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**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 |
| | | | **Full Sample** | | | |
| Ratio of 1989 Ethnic Turkish 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 |
| | | | **Urban Areas** | | | |
| Ratio of 1989 Ethnic Turkish 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 ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

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

| | Full Sample | | NUTS1 $\leq$ 9 | | NUTS1 $\leq$ 6 | |
|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| Ratio of 1989 Ethnic Turkish to Natives | -0.995* | -1.138** | -0.930 | -1.077* | -0.830 | -0.942* |
| in 1990 among Women aged 18-39 | (0.554) | (0.566) | (0.573) | (0.577) | (0.553) | (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 ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to Native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**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 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 0.283 | -0.131 | 0.504** | 0.445* | 0.103 | -0.039 | -0.189 | 0.001 |
| | (0.470) | (0.487) | (0.207) | (0.270) | (0.232) | (0.275) | (0.137) | (0.185) |
| Observations | 623 | 623 | 623 | 623 | 622 | 622 | 622 | 622 |
| $R^2$ | 0.458 | 0.457 | 0.307 | 0.307 | 0.300 | 0.300 | 0.401 | 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 ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**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 Women aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.207 | 0.152 | 0.263 | 0.172 | 0.275** | 0.236 |
| in 1990 among Women aged 18-39 | (0.208) | (0.271) | (0.232) | (0.275) | (0.110) | (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 Men aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | -0.270 | -0.013 | -0.035 | 0.152 | 0.409 | 0.530 |
| in 1990 among Women aged 18-39 | (0.169) | (0.219) | (0.130) | (0.144) | (0.255) | (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 Women aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | -0.112 | -0.084 | -0.031 | 0.034 | 0.134 | 0.019 |
| in 1990 among Women aged 18-39 | (0.283) | (0.239) | (0.362) | (0.301) | (0.123) | (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 Men aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | -0.338* | -0.273 | 0.022 | 0.147 | 0.312 | 0.187 |
| in 1990 among Women aged 18-39 | (0.195) | (0.179) | (0.135) | (0.107) | (0.382) | (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 ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 9: 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 Ethnic Turkish to Natives | 0.518** | 0.310 | 0.280 | 0.103 | -0.233 | -0.377 |
| in 1990 among Women aged 18-39 | (0.230) | (0.282) | (0.241) | (0.283) | (0.231) | (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 Ethnic Turkish to Natives | 0.230 | 0.269 | -0.033 | -0.109 | -0.164 | -0.190 |
| in 1990 among Women aged 18-39 | (0.328) | (0.258) | (0.315) | (0.249) | (0.330) | (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 1990 and 2000 in the share of: a) employed b) in the labor market, ad c) employed in manufacturing. The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 10: Placebo Check for Number of Live Births per Woman**

| | Full Sample | | NUTS1 ≤9 | | NUTS1 ≤6 | |
|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| **A: Using 40- to 59-year-old Native Women** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.456 | 0.522 | 0.338 | 0.590 | 0.560 | 0.613 |
| in 1990 among Women aged 18-39 | (1.155) | (1.515) | (1.103) | (1.497) | (1.174) | (1.556) |
| Observations | 623 | 623 | 465 | 465 | 289 | 289 |
| $R^2$ | 0.483 | 0.483 | 0.541 | 0.541 | 0.639 | 0.639 |
| **B: Using the 1985 and 1990 Censuses** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.935 | 0.059 | 1.220 | 0.196 | 1.495 | 0.990 |
| in 1990 among Women aged 18-39 | (1.784) | (2.255) | (1.759) | (2.278) | (1.773) | (2.281) |
| Observations | 623 | 623 | 465 | 465 | 289 | 289 |
| $R^2$ | 0.323 | 0.323 | 0.380 | 0.380 | 0.391 | 0.391 |

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 ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 11: 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 Ethnic Turkish to Natives | -0.049 | -0.009 | 0.072 | 0.122 | -0.528* | -0.453 | 0.044 | 0.189 |
| in 1990 among Women aged 18-39 | (0.314) | (0.421) | (0.236) | (0.266) | (0.293) | (0.385) | (0.120) | (0.122) |
| 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 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 ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 12: The Impact of 1989 Ethnic Turkish on Internal Migration**

| | Full Sample | | Urban Areas | | NUTS1 $\leq 6$ | |
|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| Ratio of 1989 Ethnic Turkish 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 Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 13: Heterogeneity by Native Women's Schooling Level**

| | Employed | | In the Labor Force | | Employed in Manufacturing | |
|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| Panel A: Primary School or Lower | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | -0.003 | -0.078 | -0.007 | 0.021 | 0.502** | 0.328 |
| | (0.296) | (0.246) | (0.278) | (0.280) | (0.239) | (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 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 1.579*** | 1.917*** | 2.069*** | 2.538*** | 1.035*** | 1.011*** |
| | (0.453) | (0.377) | (0.585) | (0.473) | (0.232) | (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 Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 0.966 | 1.072 | 0.502 | 0.167 | 1.603*** | 2.010*** |
| | (1.163) | (1.132) | (0.676) | (0.750) | (0.429) | (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 Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially 1989 Ethnic Turkish—to native Turkish (excluding both 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table 14: 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 | Equality Index |
|---|---|---|---|---|---|
| Panel A: World Value Surveys (1990 and 1996): Women | | | | | |
| Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 8.057** | -9.989*** | -2.785 | 5.298*** | -167.870 |
| | (3.317) | (2.097) | (3.211) | (1.687) | (112.804) |
| Observations | 842 | 834 | 872 | 892 | 554 |
| $R^2$ | 0.084 | 0.117 | 0.053 | 0.043 | 0.185 |
| Panel B: World Value Surveys (1990 and 1996): Men | | | | | |
| Ethnic Turkish to Natives in 1990 among Women aged 18-39 | 1.119 | 2.579 | -6.615*** | 0.791 | 40.488 |
| | (0.864) | (2.297) | (2.564) | (1.804) | (64.500) |
| Observations | 848 | 804 | 855 | 864 | 541 |
| $R^2$ | 0.053 | 0.123 | 0.076 | 0.047 | 0.184 |

Notes: The sample includes men and women aged 18-39 from the 1990 and 1996 Turkish World Values Surveys, with results 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 Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) 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. *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the region.

**Table A1: First-Stage Results**

**Table 3: Labor Market Outcomes by Gender**

| | Women | | Men | |
|---|---|---|---|---|
| | Full Sample | Urban Sample | Full Sample | Urban Sample |
| Instrument | 0.399*** | 0.451*** | 0.402*** | 0.432*** |
| | (0.037) | (0.053) | (0.041) | (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 4: Labor Market Outcomes, Gendered Difference**

| | Full Sample | Urban Sample | NUTS1 $\leq 9$ | NUTS1 $\leq 6$ |
|---|---|---|---|---|
| Instrument | 0.431*** | 0.469*** | 0.460*** | 0.445*** |
| | (0.045) | (0.060) | (0.055) | (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 $\leq 9$ | NUTS1 $\leq 6$ | Full Sample |
| Instrument | 0.444*** | 0.444*** | 0.447*** | 0.431*** |
| | (0.047) | (0.047) | (0.048) | (0.046) |
| F-Stat | 89.482 | 88.251 | 85.301 | 87.824 |
| Observations | 623 | 465 | 289 | 623 |
| $R^2$ | 0.911 | 0.908 | 0.9059 | 0.914 |

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. The sample restrictions are as defined in Tables 3, 4, 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 ethnic Turkish who arrived in Turkey within the last 5 years in the 1990 Census—essentially the 1989 refugees—to natives (excluding both 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table A2: 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 Women aged 18-49** | | | | | | |
| Ratio of 1989 Ethnic Turkish 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 Men aged 18-49** | | | | | | |
| Ratio of 1989 Ethnic Turkish 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 Women aged 18-59** | | | | | | |
| Ratio of 1989 Ethnic Turkish 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 Men aged 18-59** | | | | | | |
| Ratio of 1989 Ethnic Turkish 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. Refugees are individuals in the sample who are born in Bulgaria. The sample is restricted to 18- to 49-year-old individuals who are natives in panel (I) and to 18- to 59-year-olds who are natives in panel (II). The sample is further restricted to women in panel (A) and to men in panel (B). 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 panel A (B) 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, c) employed in manufacturing, d) employed in services.

c) The key variable of interest is the ratio of refugees who arrived in Turkey within the last 5 years in the 1990 Census—essentially the 1989 refugees (excluding both 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of women (men) specified in each panel. 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table A3: Gender-Differenced Labor Market Outcomes (Women - Men): Only High-Density and Low-Density Locations**

| | Employed | | In the Labor Force | | Employed in Manufacturing | |
|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| **Panel A: Exclude district centers where 0 < instrument < 0.02** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.777** | 0.979*** | 0.642** | 0.936** | 0.215 | 0.847* |
| in 1990 among Women aged 18-39 | (0.314) | (0.376) | (0.260) | (0.388) | (0.412) | (0.493) |
| Observations | 439 | 439 | 439 | 439 | 439 | 439 |
| $R^2$ | 0.466 | 0.466 | 0.473 | 0.473 | 0.356 | 0.343 |
| **Panel B: Exclude district centers where 0 < instrument < 0.04** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.915 | 2.222** | 0.837 | 2.314** | 0.313 | 2.601** |
| in 1990 among Women aged 18-39 | (0.799) | (0.980) | (0.809) | (1.069) | (0.998) | (1.279) |
| Observations | 408 | 408 | 408 | 408 | 408 | 408 |
| $R^2$ | 0.471 | 0.467 | 0.497 | 0.491 | 0.345 | 0.284 |
| **Panel C: Exclude district centers where 0 < instrument < 0.06** | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.740 | 2.045* | 0.222 | 1.873 | 0.319 | 3.088** |
| in 1990 among Women aged 18-39 | (0.874) | (1.144) | (0.709) | (1.183) | (1.215) | (1.575) |
| Observations | 401 | 401 | 401 | 401 | 401 | 401 |
| $R^2$ | 0.469 | 0.466 | 0.485 | 0.479 | 0.329 | 0.249 |

Notes: a) The micro-level data come from the 1990 and 2000 Turkish censuses. Refugees are individuals in the sample 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 refugees who arrived in Turkey within the last 5 years in the 1990 Census—essentially the 1989 refugees (excluding both 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) in the sample of women (men) specified in each panel. 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. Standard errors are clustered at the district level.

**Table A4: 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 Women aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.126 | 0.074 | 0.095 | 0.082 | 0.228*** | 0.226*** |
| in 1990 among Women aged 18-39 | (0.105) | (0.102) | (0.106) | (0.108) | (0.084) | (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 Men aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.157* | 0.246** | 0.173** | 0.205*** | 0.655*** | 0.812*** |
| in 1990 among Women aged 18-39 | (0.093) | (0.114) | (0.068) | (0.068) | (0.136) | (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 Women aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.079 | 0.112 | 0.077 | 0.161 | 0.156* | 0.161** |
| in 1990 among Women aged 18-39 | (0.105) | (0.091) | (0.131) | (0.103) | (0.083) | (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 Men aged 18-39 | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 0.154 | 0.225* | 0.218*** | 0.232*** | 0.471*** | 0.577*** |
| in 1990 among Women aged 18-39 | (0.110) | (0.118) | (0.072) | (0.071) | (0.176) | (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 Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 Ethnic Turkish and the Ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table A5: 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 Ethnic Turkish to Natives | 0.131 | 0.053 | -0.009 | 0.014 | -0.483*** | -0.601*** |
| in 1990 among Women aged 18-39 | (0.098) | (0.108) | (0.113) | (0.118) | (0.116) | (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 Ethnic Turkish to Natives | -0,004 | 0,007 | -0,153 | -0,039 | -0.347** | -0.409** |
| in 1990 among Women aged 18-39 | (0.123) | (0.121) | (0.151) | (0.137) | (0.160) | (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 Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table A6: Placebo Check for Number of Live Births: Excluding Province Dummies**

| | Full Sample | | NUTS1 $\leq$ 9 | | NUTS1 $\leq$ 6 | | Urban Areas | |
|---|---|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| Panel A: Using 40- to 59-year-old Native Women | | | | | | | | |
| Ratio of 1989 Ethnic Turkish to Natives | 2.985** | 2.345** | 1.052 | 0.180 | 0.724 | -0.231 | 3.253** | 2.403* |
| in 1990 among Women aged 18-39 | (1.250) | (1.133) | (0.926) | (0.811) | (0.899) | (0.791) | (1.480) | (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 Ethnic Turkish to Natives | 2.738* | 3.383** | 2.502 | 3.131* | 2.731 | 3.592** | 3.366** | 4.270*** |
| in 1990 among Women aged 18-39 | (1.620) | (1.453) | (1.747) | (1.608) | (1.755) | (1.485) | (1.596) | (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 Ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 Ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.

**Table A7: 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 Ethnic Turkish to Natives | -0.645*** | -0.928*** | -0.024 | 0.043 | -0.281 | -0.349 | -0.398 | -0.429 |
| in 1990 among Women aged 18-39 | (0.212) | (0.342) | (0.139) | (0.107) | (0.218) | (0.228) | (0.282) | (0.339) |
| Observations | 622 | 622 | 623 | 623 | 622 | 622 | 622 | 622 |
| $R^2$ | 0.010 | 0.008 | 0.013 | 0.013 | 0.137 | 0.137 | 0.007 | 0.007 |

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 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). c) The key variable of interest is the ratio of ethnic Turkish who arrived in Türkiye within the last 5 years in the 1990 Census—essentially the 1989 ethnic Turkish—to native Turkish (excluding both the 1989 ethnic Turkish and the ethnic Turkish arriving in earlier waves) 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/pop(1990)+1/pop(2000)). *** significant at 1 percent level, ** at 5 percent level, * at 10 percent level. The standard errors are clustered at the level of the district.